Tasmania's Threatened Fauna Handbook

What, Where and How to Protect Tasmania's Threatened Animals

BRYANT & JACKSON 1999

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Parks and Wildlife Service
Tasmania 1999

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This Handbook has been prepared as part of the Tasmanian Vegetation Management Strategy and Threatened Species Unit conservation programs.

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Introduction

Fauna Conservation

Tasmania's vertebrate and invertebrate fauna have received national and international recognition for their uniqueness and visual splendour. The variety of forms reflects Tasmania's diversity of habitats and topography, over 10 000 years of island separation, and our Gondwanan origins. Tasmania has a large complement of endemic species ranging from the Tasmanian devil, native hen and mountain skink to the giant velvet worm and burrowing crayfish; all of which are important elements in our national and global biodiversity.

The State's comparatively large tracts of undisturbed land and the absence of exotic predators like the European fox and stoat has meant that many species now extinct or under threat on mainland Australia continue to survive and flourish in relative abundance. For example, the eastern quoll and Tasmanian bettong are now extinct on the mainland while the spotted-tail quoll, eastern barred bandicoot and ground parrot retain a stronghold in this State.

Tasmania's coastline and offshore islands are important breeding sites for many species such as the Pedra Branca skink, New Zealand fur seal, little tern, and internationally recognised albatross species. The range of the New Holland mouse, orange-bellied parrot, forty-spotted pardalote and swift parrot are also coastal and centre around important elements in the landscape like old growth forest or coastal heath. Our marine species like the spotted handfish, Port Davey skate and tiny seastars of the tidal zone are only now being recognised as essential elements of Tasmania's unique biodiversity.

The task of assessing the conservation status of our invertebrate fauna is enormous considering there are an estimated 35 000 non-marine species alone. Approximately one third of all invertebrates known in Tasmania are endemic and some groups such as the stag beetles (Lucanidae), geometrid moths (Lepidoptera) and primitive syncarid crustaceans (Allanaspides) are of immense biological significance because of their ancient origins and evolutionary links. Many of the freshwater snails *Hydrobiidae* and cave invertebrates like harvestmen *Hickmanoxyomma* display high local endemicity and occur only in one stream or one cave site. The giant freshwater lobster *Astacopsis gouldi* occurs only in rivers across northern Tasmania. Having the distinction of being the largest freshwater invertebrate in the world, this creature is threatened by pollution of waterways, loss of stream vegetation, and recreational fishing. Tasmania's has much to protect in terms of natural heritage.

Despite Tasmania's extensive national park and reserved land system our State is no different to other parts of Australia in having a long list of species declining due to human impact and other threatening activities. Ongoing clearance, degradation and conversion of native vegetation are recognised as major threats to the long-term survival of many of our unique and common animal species. Other impacts such as pollution of waterways, commercial and industrial practices, inappropriate recreational activities, persecution, and even feral and exotic pests which are not confined to map boundaries, collectively threaten our native wildlife. In some cases it is our own lack of knowledge which prevents us from better understanding and managing declining species.

STATUS OF ANIMALS ON THE TASMANIAN ACT

GROUP	ENDANGERED	VULNERABLE	RARE	EXTINCT	TOTAL
Mammals	3	1	2	1	7
Birds	5	11	5	4	25
Reptiles	1	4	-	-	5
Amphibians	-	1	-	-	1
Fish	3	2	1	-	6
Invertebrates	10	19	83	6	118
Total	22	38	91	11	162

(2 mammals, 2 birds and 1 fish are listed on the National Act but not the Tasmanian Act)

Tasmania's reputation for the extinction of the world's largest carnivorous marsupial, the thylacine, overshadows the fact that many other species are also officially extinct in this State. The Tasmanian emu, King Island emu, Macquarie Island rail and Macquarie Island parakeet all became extinct in the early 19th century either from hunting by early settlers or predation by feral pests. The Miena jewel beetle, known only on flowering shrubs in the Central Highlands, has not been collected since the 1920s despite active searching. A story lies behind every one of our most recent extinctions and the mistakes made continue to be repeated. Persecution of the wedge-tailed eagle today is little different to that of the thylacine.

While it is an enormous task to address these activities often simple actions or minor changes are all that are needed to ensure the safety and maintenance of wildlife. In many cases a threatened species in your area means that your current management practices are appropriate and have enabled the species to survive. No changes are needed. Do nothing more than be aware and proud that you are protecting Tasmania's natural heritage.

While this Handbook focuses on Tasmania's most threatened fauna it aims to promote protection of all our native species. Shifting the emphasis from the most critical to the more common species will itself bring about better protection of Tasmania's biodiversity.

About this Handbook

The two most commonly asked questions about threatened animals are "Where do they occur, and, What do we need to do?". This Handbook aims to provide answers to both of these questions in a clear and concise way. It also provides a wealth of information on how to recognise threatened animals, their life history, habitat requirements and any important aspects to be aware of when surveying or managing them.

This Handbook is designed for anyone associated with the land, coast, fresh waterways and oceans of Tasmania, whether they be owners, managers, commercial or recreational users. The management recommendations suggested in the Handbook are practical, applied suggestions especially aimed at those involved with planning and on-ground management, e.g. farmers, landholders, councils, industry, Government, Landcare, Rivercare, Coastcare, Waterwatch, etc. While this Handbook focuses specifically on threatened fauna conservation and management, its recommendations are equally appropriate for the long-term conservation of all our native fauna, flora and geo-heritage.

This Handbook should also be useful for anyone interested in learning more about Tasmania's threatened animals and their conservation needs, either as general reading or as an essential reference text. Suggestions are provided on ways to help to enable every member of the community to become involved in threatened species' conservation.

Animals Included

The Handbook includes every native animal (vertebrate and invertebrate) listed on Tasmania's *Threatened Species Protection Act 1995* and the Commonwealth *Endangered Species Protection Act 1992* by mid 1999 (see Appendix). Wherever possible and appropriate, species of high conservation significance or of unknown status but believed to be at risk are also included, especially when their management and protection is consistent with similarly threatened species, e.g. wedge-tailed eagle and white-bellied sea-eagle, all seals, etc. The Handbook includes animals in all types of habitats and environments ranging from log dwelling, cave ecosystems, forest, wetland, coastal and marine species.

How to Use the Handbook

The Handbook is divided into three Sections.

Section I: Locations

This section identifies where threatened species occur according to site information from a 1: 25 000 mapsheet (TASMAP series). Known localities and areas containing potential habitat are detailed. Where a 1: 25 000 map is not available a 1: 100 000 TASMAP sheet or topographical map (e.g. Macquarie Island topographical map) is included. In some cases site details are not specific, because they are unknown (e.g. extinct species or never listed), inappropriate (e.g. species is mobile), or to ensure protection or confidentiality of a sensitive site (e.g. cave entrances).

A reference guide to the mapsheets of Tasmania is provided in the front of Section I including some explanatory notes.

Section II Animal Profiles

Section II contains concise information about every threatened animal, either as an individual species profile, or as a grouping of similar species, e.g. burrowing crayfish, or as a threatened ecosystem, e.g. the Great Lake, caves, etc. Every profile contains information on the species' conservation status, identifying features, distribution, habitat, biology, important locations, key threats, management recommendations, and other ways to help. Additional information including references, organisations to contact, diagnostic illustration, and a distribution map are also provided. A list of mapsheets will enable easy cross-reference between sections.

Management recommendations for species affected by commercial forestry operations are not detailed. Forest Practices Officers are provided with recommendations according to the Forest Practices Board's computer 'Expert System' based on the *Threatened Fauna Manual for Production Forests in Tasmania* (1998 revised version, Forest Practices Board, Hobart). These recommendations vary according to the species and type of forestry operation being undertaken and may change according to site, new information or when specialist advice is needed for sensitive species or zones.

Section III Habitat Types

This section is a quick reference guide on how to recognise broad habitat types and to identify which threatened animals they potentially may contain. This section may be useful if your region is not well surveyed or covered by mapsheets, or if you are intending to rehabilitate or restore native habitats to naturally encourage threatened species into the area. You may manage land adjacent to a known threatened species site which has never been surveyed and therefore you can either undertake your own conservation surveys or be responsible in your activities.

Appendix

A complete list of fauna species on Tasmania's *Threatened Species Protection Act 1995* and the Commonwealth *Endangered Species Protection Act 1992* is provided. This list is under constant review and may change at any time. For easy reference the appendix contains the scientific name for every species and common names where they exist.

Conservation Categories

The following definitions apply under Tasmania's *Threatened Species Protection Act 1995*

1. *Endangered:* species which are either:
    - in danger of extinction because long term survival is unlikely while the factors causing the species to be endangered continue operating, or
    - presumed extinct on the grounds that no occurrence of the species in the wild can be confirmed during the past 50 years.
2. *Vulnerable:* a species which is likely to become endangered while the factors causing it to be vulnerable continue operating.
3. *Rare:* a species which has a small population in Tasmania that is not endangered or vulnerable but is at risk.

Species are listed on the Commonwealth *Endangered Species Protection Act 1992* as being either Endangered or Vulnerable in the national context.

Legislative Protection

Under Tasmania's *Threatened Species Protection Act 1995* and the *National Parks and Wildlife Act 1970* it is an offence to trade, collect, possess or disturb any native wildlife unless under permit from the Director, Parks and Wildlife Service. Wildlife is defined as any native plant or animal (vertebrate and invertebrate) and includes most of Tasmania's widespread and commonly occurring species as well as those identified as threatened. Whales are also protected under the *Whales Protection Act 1988*. The powers of these Acts extend to all land tenures in Tasmania.

'Land' also includes land covered by the sea or other waters, covering land above the high water mark to three nautical miles seaward.

Commonwealth legislation extends over nationally signified land in Tasmania to 200 nautical miles seaward. The *Endangered Species Protection Act 1992* came into effect in 1993 to promote the recovery of flora and fauna species and ecological communities that are endangered and vulnerable at the national level.

Copies of all these acts are available from the nearest Government printing authority or bookshop.

Site Access is Not Allowed

This Handbook provides precise locality information for many threatened species on a wide range of land tenures. In no way does this information infer or encourage access (unless where public land) or allow disturbance to any sites. Private land, in particular, should be respected and never accessed without the authority of the landmanager. Sites should be left undisturbed unless a permit has been issued. Please act responsibly.

How to Nominate a Species for the Tasmanian Threatened Species Protection Act 1995

The Tasmanian Scientific Advisory Committee (SAC) has produced a set of guidelines or rule sets based on scientific information which determines whether a species qualifies as being threatened (extinct, endangered, vulnerable or rare) in Tasmania. The criteria are based on internationally accepted definitions but are modified to suit the Tasmanian regional context. Information on total population number, distribution, range decline over time and ongoing threats may be needed. To nominate a species for consideration by the SAC you must prepare your information on a special nomination form and submit it to the SAC Committee Secretary. The nomination form and the guidelines to determine conservation status are available from the SAC Committee Secretary (address below) or contact the Threatened Species Unit.

Useful Contacts

- Parks and Wildlife Service Home Page -Threatened Species:
  http://www.dpiwe.tas.gov.au/esl
- Environment Australia Endangered Species Program:
  http://www.biodiversity.environment.gov.au/plants/threaten
- Threatened Species Unit, Parks and Wildlife Service
  Department of Primary Industries, Water and Environment
  GPO Box 44A, Hobart, Tasmania, 7001
  Phone 03 6233 6556, Fax 03 6233 3477
- SAC Committee Secretary, Department of Primary Industries, Water and Environment
  GPO Box 44A, Hobart, Tasmania, 7001
  Phone 03 6233 3424, Fax 03 6233 3477
- Parks and Wildlife Service (northern office)
  Prospect Office, PO Box 180 Kings Meadows, Launceston, 7248
  Phone 03 6336 5312, Fax 03 6344 8109
- Senior Zoologist, Forest Practices Board
  'Roydon', 30 Patrick Street, Hobart, 7000
  Phone 03 6233 8710, Fax 03 6233 7954
- Conservation Planner, Forestry Tasmania
  69 Melville Street, Hobart, Tasmania 7000
  Phone 03 6233 8373, Fax 03 6233 8252
- Inland Fisheries Commission
  6B Lampton Avenue, Derwent Park, Tasmania, 7009
  Phone 03 6233 4140, Fax 03 6233 4141
- CSIRO Marine Laboratories
  GPO Box 1538, Hobart, Tasmania, 7001
  Phone 03 6232 5222, Fax 03 6232 5000
- Marine Resources, GPO Box 44A, Hobart, Tasmania, 7001
  Phone 03 6233 2147, Fax 03 6223 1539
- Land Information Bureau (TASMAP sales)
  Ground Floor, 134 Macquarie Street, Hobart, Tasmania, 7000
  Phone 03 6233 3382, Fax 03 6233 2158

We Need to Know More

Large areas of Tasmania, especially our coastline and many offshore islands, have never been surveyed. Our information on the distribution and management needs of many species, especially invertebrates and marine species, is very limited. Any information on new sites or inaccuracies in the material presented in this Handbook will help us to improve our understanding of Tasmania's unique wildlife and enable better conservation management.

If you have any information or queries in relation to threatened species, their conservation or the legislation, please contact the Threatened Species Unit.

Disclaimer

Although every effort has been made to ensure that the information presented in this Handbook is correct, neither the authors nor the State or Commonwealth Governments accept any liability for the accuracy, any inclusion, advice given, or for omissions from the Handbook. Much of the information provided is already available in the public domain. The status of species is constantly being reviewed and with increasing surveys new locations are being identified. Land tenure has been extracted from maps and in some cases may no longer be current.

Acknowledgements and Specialists Providing Advice

This Handbook has been prepared with joint financial assistance from the Tasmanian Threatened Species Unit of the Parks and Wildlife Service and the Tasmanian Vegetation Management Strategy funded under the Bushcare Program, Natural Heritage Trust. Peter Brown (Manager of Threatened Species Unit) and Stephen Harris (Senior Botanist) provided the endorsement and continual encouragement to make it possible. The Forest Practices Board very generously allowed the use of the *Threatened Fauna Manual for Production Forests* (revised version, 1998) as the framework for this manual and we sincerely thank Sarah Munks, Mark Wapstra and Graham Wilkinson for their co-operation. We also sincerely thank Ros Wood for proof reading and editing, Maria Moore and Kath Sund from the GIS Section for map preparation, and Karen Richards for specialist drawings and scanning assistance. Thanks also to David James who provided penguin mapsheet references for last minute entries. Sean Mennitz from the Printing Authority of Tasmania designed the layout and graphics and Peter Johns the printing, both were a pleasure to work with. All specific artwork, illustrations and photographs are fully acknowledged in the profiles. Finally, we thank the many specialists listed below who contributed species information and advice (either knowingly or otherwise).

Specialists Providing Advice

BASHFORD, Richard, Forestry Tasmania, 69 Melville Street, Hobart, 7000.

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BORNEMISSZA, George, 78 Nelson Road, Sandy Bay, 7005.

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BROTHERS, Nigel, Marine Unit, Parks and Wildlife Service, Hobart, 7000.

BROWN, Peter, Threatened Species Unit, Parks and Wildlife Service, Hobart, 7000.

BRUCE, Barry, CSIRO Marine Laboratories, Castray Esplanade, Hobart, 7000.

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FLETCHER, Alan, Birds Tasmania, GPO Box 68, Hobart, 7000.

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HOCKING, Greg, Fauna Section, Parks and Wildlife Service, Hobart, 7000.

HOLDSWORTH, Mark, Threatened Species Unit, Parks and Wildlife Service, Hobart, 7000.

HOUSHOLD, Ian, Geoheritage Unit, Parks and Wildlife Service, Hobart, 7000.

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McQUILLAN, Peter, Department of Geography & Environmental Studies, University of Tasmania, GPO Box 252C, Sandy Bay, 7005.

MAWBEY, Brett, Inland Fisheries Commission, 6B Lampton Avenue, Derwent Park, 7009.

MEGGS, Jeff, Mersey District, Forestry Tasmania, GPO Box 343, Devonport, 7310.

MESIBOV, Robert, GPO Box 101, Penguin, 7316.

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MUNKS, Sarah, Forest Practices Board, 30 Patrick Street, Hobart, 7000.

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PARK, Priscilla, Birds Tasmania, GPO Box 68, Hobart, 7000.

PEMBERTON, David, Tasmanian Museum and Art Gallery, 40 Macquarie Street, Hobart, 7000.

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SKIRA, Irenej, Marine Unit, Parks and Wildlife Service, Hobart, 7000.

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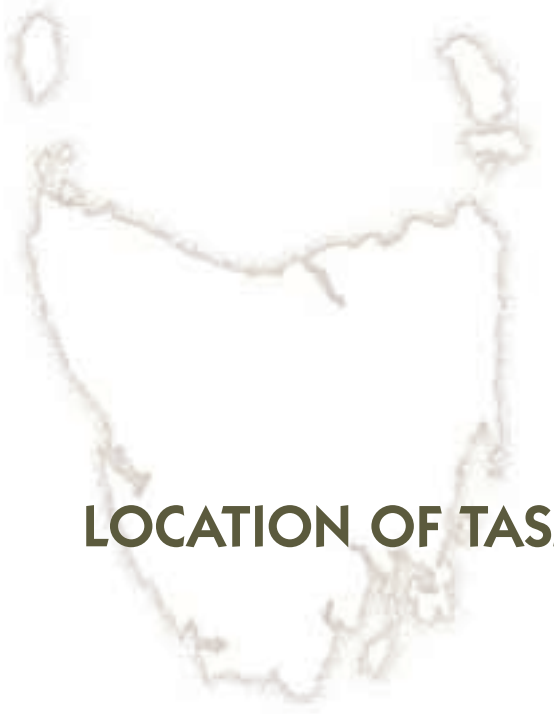
WAPSTRA, Mark, Forest Practices Board, 30 Patrick Street, Hobart, 7000.

WOEHLER, Eric, Birds Tasmania, GPO Box 68, Hobart, 7000.



SECTION 1

LOCATION OF TASMANIA'S THREATENED ANIMALS

1: 25 000 Map Sheets

Section I Explanatory Notes

All mapsheets are listed alphabetically by map name. Unless stated otherwise all the mapsheets are in the 1: 25 000 TASMAP series.

Species, Known Locations and Suitable Habitat

Species' common names are used where they exist. The name of the species refers to either a single species, e.g. grey goshawk, a group of similar species, e.g. eagles, or an ecosystem where the species occurs, e.g. Great Lake ecosystem. The name can be cross-referenced to Section II - Species Profiles where more information about the animal or group is supplied.

Known locations refer to specific sites where the species is or has been reported on that mapsheet.

Suitable habitat refers to any areas on the mapsheet where the species may occur in the type of habitat described. These areas require survey.

Tenure

For ease of interpretation, tenure (owner or manager of land) has been simplified. When an area has multiple tenures an abbreviated form of the code is used, e.g. Private, Priv, P. In most cases tenure has been obtained from mapsheets which may be now out of date and therefore should always be re-checked for currency.

Tenure (abbreviations)	Description
Commonwealth (Com'w, Com)	Areas owned or managed by the Commonwealth.
Council (Cou)	Area vested under the control of the municipal council.
Crown (Crwn, Crn)	Unallocated Crown or public land.
HEC	Areas under the control or management of the Hydro Electric Commission (or Aurora Energy or Transend), usually streams, rivers, impoundments, lakes, weirs, dams, poles and wires, sub-stations and surrounding land, etc.
FReserve (FRes, FR)	Area has full legal reserve protection status, i.e. requires two houses of parliament for revocation, e.g. National Park, State Reserve, Forest Reserve, Nature Reserve, etc.
Private (Priv, Pr, P)	Private property. Includes all forms of ownership, e.g. individual, group, club, corporate ownership (e.g. Boral), etc.
Reserve (Res, R)	Area which has some form of legal protection status, e.g., coastal reserve, game reserve, conservation area, private sanctuary, etc.
State Forest (SF)	Area owned or managed by Forestry Tasmania usually for commercial timber production.
Tasmanian Aborigine (TA)	Area owned and or managed by the Tasmanian Aboriginal community.

Map Grid

This refers to the grid co-ordinates on the mapsheet which will identify the site or location. The mapsheet is covered by thin lines forming grid squares which extend to the edge of the map and a reference digit. The first three digits of the map grid provided are the 'Eastings' which are found across the top and bottom of the mapsheet, the first two digits referring to the start of the block. The last three digits are the 'Northings' which are found on either side of the mapsheet, and are calculated in the same manner.

Specific locations are indicated by grid co-ordinates. However, where the site is large, e.g. along a beach, or where the species occurs in a cluster or colony covering a large area, e.g. forty-spotted pardalote, then the mid point (or a distinguishing feature) of the site is provided. In some cases grid locations are not provided because they are unknown (extinct species, oceanic species or never listed), or to ensure protection or confidentiality of a sensitive site (e.g. cave entrances).

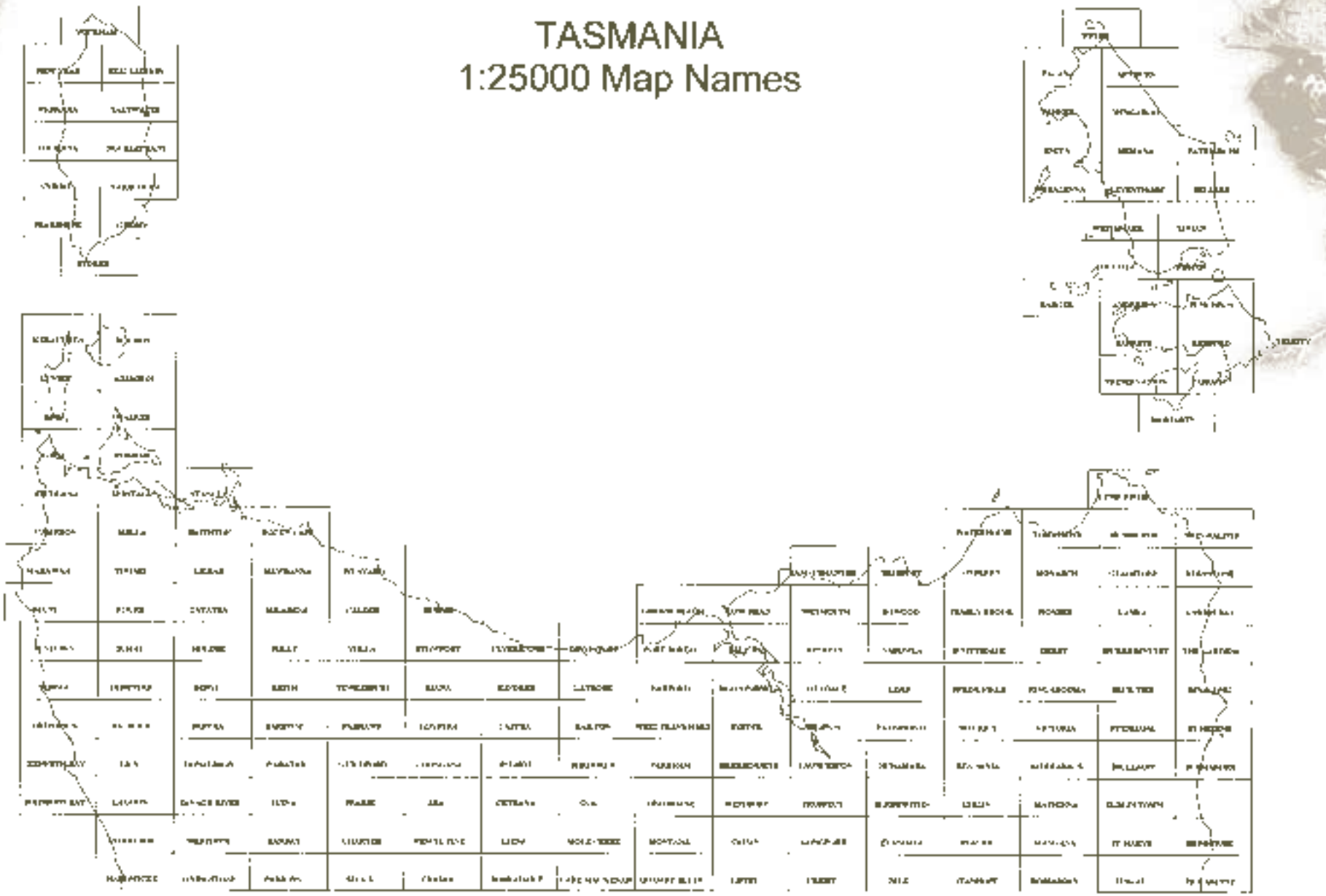
Locality

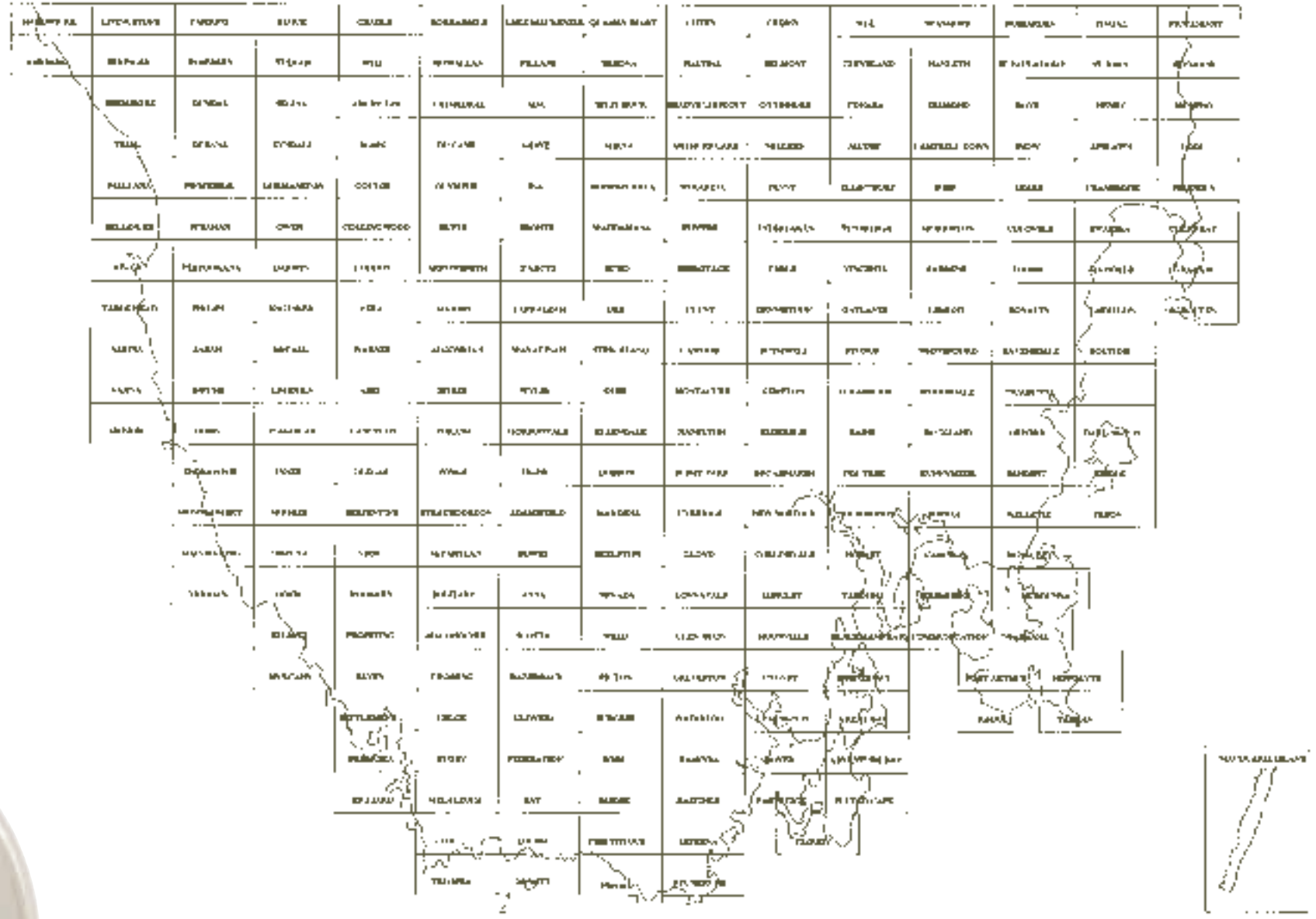
Refers specifically or generally to the area where the species was collected or is known to have been present. Abbreviations are sometimes used for direction (N, S, E, W, NE, SE, NW, NE), distance (km, nm), or to shorten site names (River, Riv, R, etc.).

Notes

In some cases additional information such as breeding, nest site, key area, name of collector, date of collection, or report reference, etc. is provided.

TASMANIA
1:25000 Map Names





ABEL 4029

Species May Occur in Suitable Habitat	Habitat to Survey
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

ACHILLES 4036

Species May Occur in Suitable Habitat	Habitat to Survey
pencil pine moth	Pencil pine forest.
ptunarra brown butterfly	Native grassland or woodland with more than 15% cover of tussock grass.

ADA 4436

Known Localities of Species	Tenure	Map Grid	Locality	Notes
pencil pine moth	FReserve	410 689	1.5 km northeast of Mt Moriah	colony
pencil pine moth	FReserve	493 645	Talleh Lagoons	colony
pencil pine moth	FReserve	495 629	Theresa Lagoon	colony
pencil pine moth	FReserve	560 630	Lake Ada	colony
eagles (wedge-tailed)	FReserve	Confidential	Lake Ada area	nest near

Species May Occur in Suitable Habitat	Habitat to Survey
pencil pine moth	Pencil pine forest.
ptunarra brown butterfly	Native grassland or woodland with more than 15% cover of tussock grass.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.

ADAMSFIELD 4426

Known Localities of Species	Tenure	Map Grid	Locality	Notes
freshwater snails *(Phrantela pupiformis)*	SF	572 684	Tyenna River tributary on Gordon Road	
caddisfly *(Diplectrona lyella)*	FReserve	527 679	Little Florentine River, Gordon Road	Jackson 99

Species May Occur in Suitable Habitat	Habitat to Survey
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
pencil pine moth	Pencil pine forest.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

ADAMSON 3251

Known Localities of Species	Tenure	Map Grid	Locality	Notes
keeled snail	FReserve	218 174	Near summit of South Hummock	
keeled snail	FReserve	218 178	Eastern slope South Hummock	
eagles (wedge-tailed)	FReserve	Confidential	South Hummock	nest near
coastal birds (fairy tern, hooded plover)	FReserve		Three Hummock Island coastline	breeding sites
coastal birds (short-tailed shearwater)	FReserve	215 163	Three Hummock Island, South Paddock	colony

Species May Occur in Suitable Habitat	Habitat to Survey
keeled snail	Wet eucalypt forest on Three Hummock Island.
orange-bellied parrot	Migration feeding habitat: saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast, including vegetated offshore islands.

coastal birds (hooded plover)	Sandy ocean beaches and dunes.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

ADVENTURE BAY 5220

Known Localities of Species	Tenure	Map Grid	Locality	Notes
forty-spotted pardalote	Private	235 097	West of Aikens Point	colony B 57a
forty-spotted pardalote	Private	234 085	North of Listers Hill	colony B 57b
forty-spotted pardalote	Private	244 079	Simpsons Bay	colony B 57c
forty-spotted pardalote	Private	228 075	Below Listers Hill	colony B 57d
forty-spotted pardalote	Private	243 073	Simpsons Bay	colony B 57e
forty-spotted pardalote	Private	233 065	North of Driscolls Hill	colony B 57f
forty-spotted pardalote	Private	235 052	Simpsons Bay Road	colony B 57g
forty-spotted pardalote	Private	235 035	Wooreddy Road	colony B 58
forty-spotted pardalote	SF	235 038	Wooreddy Road, Wildlife Priority Area	colony B 58
forty-spotted pardalote	SF	236 030	Wooreddy Road, Wildlife Priority Area	colony B 58
forty-spotted pardalote	Private	211 034	Along Dillons Road near junction	colony B 59
forty-spotted pardalote	Private	217 017	Wooreddy Road	colony B 60
forty-spotted pardalote	SF	217 010	Wooreddy Road, Wildlife Priority Area	colony B 60
swift parrot	Private	224 035	S of Adams Saddle on Musketts Road	foraging area
swift parrot	Private	238 042	2 km southeast of Driscolls Hill	foraging area
swift parrot	Private	239 043	2 km south of Driscolls Hill	foraging area
swift parrot	Private	240 043	2 km southeast of Driscolls Hill	foraging area
swift parrot	Private	242 053	1.5 km southeast of Driscolls Hill	foraging area
swift parrot	Priv / Res	262 019	Coal Point on Bruny Island	foraging area
eagles (white-bellied sea-eagle)	Private	Confidential	Near Cooleys Gully	nest
coastal birds (little penguin)	FReserve	283 088	The Neck Beach - lookout	breeding site
coastal birds (fairy tern)	Reserve	260 060	The Neck - historic breeding site	infrequent
coastal birds (hooded plover)	Reserve	270 073	The Neck Beach	breeding site
southeast stag beetles (Mt Mangana)	Private	233 056	Driscolls Hill	
southeast stag beetles (Mt Mangana)	SF	235 024	Simpsons Creek	

Species May Occur in Suitable Habitat	Habitat to Survey
broad-striped ghost moth	Bruny Island heathland and sedgeland.
forty-spotted pardalote	Grassy dry forest and woodland with white gum within 3 km of the coast.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
southeast seastars (live-bearing seastar)	Intertidal rocky areas, on sandstone.
southeast stag beetles (Mt Mangana)	Wet forest containing decaying logs.
coastal birds (fairy tern)	Sand or shingle beaches, unvegetated sites near estuaries and nearby lakes, and estuarine and offshore islands.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
swift parrot	Forest and woodland dominated by blue gum or black gum within 10 km of the coast, including slopes and ridges.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

AHRBERG 3237

Known Localities of Species	Tenure	Map Grid	Locality	Notes
coastal birds (fairy tern)	Crown	365 695	Granville Harbour	breeding site
orange-bellied parrot	Crown	363 692	Granville Harbour	migration '92

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
orange-bellied parrot	Migration feeding habitat: saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast, including vegetated offshore islands.
coastal birds (fairy tern)	Sand or shingle beaches, unvegetated sites near estuaries and nearby lakes, and estuarine and offshore islands.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

ALBINA 3530 (Albina-Table Head)

Known Localities of Species	Tenure	Map Grid	Locality	Notes
coastal birds (hooded plover)	Reserve	530 080	Beach, northern side of Gorge Point	breeding site
coastal birds (hooded plover)	Reserve	533 077	Beach, southern side of Gorge Point	breeding site
coastal birds (hooded plover)	Reserve	535 085	Gorge Creek Beach	breeding site
coastal birds (hooded plover)	Reserve	538 076	Beach (not named)	breeding site
coastal birds (hooded plover)	Reserve	545 051	Lagoon Creek Beach	breeding site
coastal birds (hooded plover)	Reserve	549 030	Waller Creek and Albina Creek beach	breeding site
coastal birds (hooded plover)	Reserve	552 013	Birthday Bay Beach	breeding site
eagles (white-bellied sea-eagle)	Reserve	Confidential	Near Gorge Point	nest
eagles (white-bellied sea-eagle)	Reserve	Confidential	Near Birthday Bay	nest

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
orange-bellied parrot	Migration feeding habitat: saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast, including vegetated offshore islands.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

ALGONKIAN 4230

Species May Occur in Suitable Habitat	Habitat to Survey
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

ANDERSON 5853

Known Localities of Species	Tenure	Map Grid	Locality	Notes
coastal birds (fairy tern, white-fronted tern, little penguin, short-tailed shearwater)	FReserve	907 396	Oyster Rocks	breeding site
coastal birds (white-fronted tern)	Crown	912 347	Neds Reef	breeding site
coastal birds (white-fronted tern)	Crown	946 388	Mid Woody Island	breeding site
coastal birds (little penguin)	Crown	940 396	Anderson Island	colony
coastal birds (little penguin)	Crown	892 337	Doughboy Island	colony

coastal birds (little penguin)	Crn/Pv/R	855 320	Long Island	colony
coastal birds (little penguin)	Crown	975 387	Tin Kettle Island	colony
coastal birds (little penguin)	Crown	912 347	Neds Reef	colony
coastal birds (little penguin)	Crown	945 391	Little Anderson Island	colony
coastal birds (little penguin)	Crown	946 388	Mid-Woody Island	colony
eagles (white-bellied sea-eagle)	Reserve	Confidential	Near Mount Munro	nest
burrowing crayfish (Flinders Island)	Reserve	944 304	Centre Creek, western side of Mt Munro	

Species May Occur in Suitable Habitat	Habitat to Survey
coastal birds (fairy tern, white-fronted tern)	Sand or shingle beaches, unvegetated sites near estuaries and nearby lakes, and estuarine and offshore islands.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.
burrowing crayfish (Flinders Island)	Wet, fern gullies with dense vegetation.

ANNE 4424

Species May Occur in Suitable Habitat	Habitat to Survey
broad-striped ghost moth	Condominium Creek area needs survey.
Hickmans pygmy mountain shrimp	Buttongrass areas within the original Lake Pedder-Serpentine drainage.
Pedder galaxias	Tributaries of the Lake Pedder impoundment.
pencil pine moth	Pencil pine forest.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.
Lake Pedder earthworm	Shore and sediments of Lake Pedder.

ANSONS BAY 6045

Known Localities of Species	Tenure	Map Grid	Locality	Notes
Australian grayling	Reserve	033 539	Ansons River at The Bottleneck	
great crested grebe	Reserve	074 565	Ansons Bay	foraging site
New Holland mouse	FReserve	107 585	North of Bayley Rock, Mt William	colony
coastal birds (fairy tern)	Reserve	085 535	Ansons Bay, Spit and Policemans Point	breeding sites
coastal birds (hooded plover)	Reserve	089 532	Policemans Point	? breeding
coastal birds (hooded plover)	Reserve	085 523	Bay of Fires	breeding site
eagles (white-bellied sea-eagle)	Reserve	Confidential	Near Ansons Bay	nest
marine turtles (leatherback)	Crown		Swimming 4 nm offshore Ansons Bay	1997 record

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers, esp. Ansons River.
dwarf galaxiid	Slow-flowing and still waters with aquatic vegetation.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
great crested grebe	Lakes, rivers and estuaries.
New Holland mouse	Dry coastal heathland and open heathy forest.
coastal birds (fairy tern)	Sand or shingle beaches, unvegetated sites near estuaries and nearby lakes, and estuarine and offshore islands.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

APSLAWN 5835

Known Localities of Species	Tenure	Map Grid	Locality	Notes
eagles (wedge-tailed)	Private	Confidential	Near Reynolds Hill, West Swan River	nest
eagles (wedge-tailed)	Private	Confidential	Near Sherbourne Bay	nest
eagles (wedge-tailed)	SF	Confidential	Near Twelve O'Clock Hill	nest
Australian grayling	Reserve		Apsley River	

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers, esp. Apsley River.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
swift parrot	Forest and woodland dominated by blue gum or black gum within 10 km of the coast, including slopes and ridges.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

ARROWSMITH 4232

Species May Occur in Suitable Habitat	Habitat to Survey
pencil pine moth	Pencil pine forest.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

ARTHURS 5859

Known Localities of Species	Tenure	Map Grid	Locality	Notes
coastal birds (fairy tern)	Res/Crwn	828 983	North East River, lagoon and surrounds	breeding site
coastal birds (hooded plover)	Reserve	868 950	Foochow Beach	breeding site

Species May Occur in Suitable Habitat	Habitat to Survey
Bass Strait wombat	Heath, scrub, woodland and pasture.
Australian grayling	Lower and middle reaches of coastal rivers.
dwarf galaxiid	Slow-flowing and still waters with aquatic vegetation.
forty-spotted pardalote	Grassy dry forest and woodland with white gum within 3 km of the coast.
coastal birds (fairy tern)	Sand or shingle beaches, unvegetated sites near estuaries and nearby lakes, and estuarine and offshore islands.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

ARTHURS LAKE 4835

Known Localities of Species	Tenure	Map Grid	Locality	Notes
Great Lake ecosystem *(Tasniphargus tyler, Mesacanthotelson tasmaniae)*	HEC	806 540	Great Lake benthos and sediments	type localities
Great Lake ecosystem (all species)	HEC	806 540	Great Lake margin, benthos, sediments	
ptunarra brown butterfly	Private	815 515	Barren Plains (Ellis Plains)	colony
ptunarra brown butterfly	Private	894 547	Hydro Bay	colony
saddled galaxias	HEC		Arthurs Lake margins and open water	

Species May Occur in Suitable Habitat	Habitat to Survey
Great Lake ecosystem (all species, especially *Glacidorbis paupela, Mesacanthotelson setosus, Onchotelson brevicaudatus, O. spatulatus, Uramphisopus pearsoni*)	Great Lake margin, benthos and soft sediments.
ptunarra brown butterfly	Native grassland or woodland with more than 15% cover of tussock grass.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

BADGER 5653

Known Localities of Species	Tenure	Map Grid	Locality	Notes
coastal birds (fairy tern, little penguin, short-tailed shearwater)	FReserve	782 343	Beagle Island and Reef	breeding sites
coastal birds (little penguin, s-t shearwater)	FReserve	675 385	Goose Island	colonies
coastal birds (little penguin, s-t shearwater)	FReserve	665 390	Little Goose Island	colonies
coastal birds (little penguin, s-t shearwater)	FReserve	777 383	Little Badger Island	colonies
coastal birds (little penguin)	FReserve	666 387	Inner Little Goose Island	colony
coastal birds (little penguin)	Crown	760 297	Boxen Island, south of Badger Island	colony
eagles (white-bellied sea-eagle)	TA	Confidential	Near Badger Island	nest

Species May Occur in Suitable Habitat	Habitat to Survey
coastal birds (fairy tern)	Sand or shingle beaches, unvegetated sites near estuaries and nearby lakes, and estuarine and offshore islands.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.

BAINS 5228

Known Localities of Species	Tenure	Map Grid	Locality	Notes
eagles (wedge-tailed)	Private	Confidential	Dysart	nest
eagles (wedge-tailed)	Private	Confidential	Chauncy Vale area	nest near

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
green and gold frog	Permanent or temporary water bodies (streams, ponds, dams) with vegetation in or around them.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

BALFOUR 3242

Species May Occur in Suitable Habitat	Habitat to Survey
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes, and Arthur River system, below about 400 m alt.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
orange-bellied parrot	Migration feeding habitat: saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast, including vegetated offshore islands.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

BARETOP 3642

Species May Occur in Suitable Habitat	Habitat to Survey
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
ptunarra brown butterfly	Native grassland or woodland with more than 15% cover of tussock grass.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes, and Arthur River system, below about 400 m alt.

BARNES BAY 5222

Known Localities of Species	Tenure	Map Grid	Locality	Notes
chaostola skipper	Crown	214 299	Old Station Road, Coningham	found 1992
forty-spotted pardalote	FReserve	243 295	Snug Point, Coningham State Reserve	historic site
forty-spotted pardalote	Private	231 212	End of Apollo Bay Road	colony B 41
forty-spotted pardalote	Private	231 269	Simmonds Point, Coningham	historic site
forty-spotted pardalote	Private	231 274	North of Simmonds Point, Coningham	historic site
forty-spotted pardalote	Private	234 212	Along Apollo Bay Road	colony B 40
forty-spotted pardalote	Private	243 213	Along Apollo Bay Road	colony B 40
forty-spotted pardalote	Private	242 203	South Kinghorne Point	colony B 45
forty-spotted pardalote	Private	252 215	1 km northwest of Roberts Hill	colony B 39
forty-spotted pardalote	Private	249 219	Along Apollo Bay Road	colony B 38
forty-spotted pardalote	Private	249 224	1 km south of Lennon Road	colony B 35
forty-spotted pardalote	Private	255 220	Surrounding Roberts Hill	colony B 37
forty-spotted pardalote	Private	260 214	Surrounding Roberts Hill	colony B 37
forty-spotted pardalote	Private	261 279	Rat Bay, Killora Road	colony B 19
forty-spotted pardalote	Private	265 205	South of Roberts Hill	colony B 43
forty-spotted pardalote	Private	265 210	East of Roberts Hill	colony B 42
forty-spotted pardalote	Private	265 215	South of Richards Beach	colony B 36
forty-spotted pardalote	Private	269 287	Around Killora	colony B 6
forty-spotted pardalote	Private	265 281	Inland of Rat Bay	colony B 9
forty-spotted pardalote	Private	263 277	Along Killora Road	colony B 14
forty-spotted pardalote	Com'w	266 247	Below the Quarantine Station residences	colony B 19
forty-spotted pardalote	Private	266 293	Longfords Beach	colony B 4
forty-spotted pardalote	Private	263 287	Longfords Beach	colony B 4
forty-spotted pardalote	Private	270 221	Richards Beach, Sykes Cove	colony B 34
forty-spotted pardalote	Private	273 223	Throughout Lodge Hill	colony B 32
forty-spotted pardalote	Private	275 215	North of Robinsons Hill	colony B 44
forty-spotted pardalote	Private	277 225	Throughout Lodge Hill	colony B 32
forty-spotted pardalote	Private	272 290	Inland of Killora Bay	colony B 5
forty-spotted pardalote	Private	274 283	Inland of Killora Bay	colony B 8
forty-spotted pardalote	Private	275 272	Nebraska Property	colony B 11
forty-spotted pardalote	Private	279 280	Nebraska Property	colony B 11
forty-spotted pardalote	Private	277 285	South of Nebraska	colony B 7
forty-spotted pardalote	Private	280 299	Inland of Nebraska Beach	colony B 2
forty-spotted pardalote	Private	280 235	North Lodge Hill	colony B 29
forty-spotted pardalote	Private	282 277	Lowes Hill	colony B 12
forty-spotted pardalote	FReserve	286 293	Dennes Hill State Reserve	colony B 3
forty-spotted pardalote	FReserve	286 285	Dennes Hill State Reserve	colony B 3
forty-spotted pardalote	Private	289 234	Duckpond, Missionary Road	colony B 25

forty-spotted pardalote	Private	290 238	Duckpond, Missionary Road	colony B 25
forty-spotted pardalote	Private	291 279	'The Township', adjoining Dennes Hill	colony B 10
forty-spotted pardalote	Private	292 228	Kirkby Creek	colony B 30
forty-spotted pardalote	Private	293 275	'Waterview Hill', adjoining Dennes Hill	colony B 13
forty-spotted pardalote	Private	295 282	'Waterview Hill', adjoining Dennes Hill	colony B 13
forty-spotted pardalote	Private	295 245	McCrackens Gully	colony B 24
forty-spotted pardalote	Private	297 267	Along Killora Road	colony B 15
forty-spotted pardalote	Private	300 235	McCrackens Gully	colony B 24
forty-spotted pardalote	Private	305 221	'Murrayfield' plant site, opposite quarry	1 ha plot
forty-spotted pardalote	Private	306 266	South of One Tree Point	colony B 16
forty-spotted pardalote	Private	309 222	'Murrayfield'	colony B 33
forty-spotted pardalote	Private	309 234	'Murrayfield'	colony B 28
forty-spotted pardalote	Private	309 261	Inland of Bleachs Bluff	colony B 18
forty-spotted pardalote	Private	314 228	East of Top Slip Point	colony B 31
forty-spotted pardalote	Private	314 265	North of Bleachs Bluff	colony B 17
forty-spotted pardalote	Private	315 248	Southwest of Powells Pinnacle	colony B 21
forty-spotted pardalote	Private	317 234	North of Top Slip Point	colony B 27
forty-spotted pardalote	Private	317 250	Southwest of Powells Pinnacle	colony B 20
forty-spotted pardalote	Private	318 249	Southwest of Powells Pinnacle	colony B 22
forty-spotted pardalote	Private	319 238	North of Top Slip Point	colony B 26
forty-spotted pardalote	Private	320 242	South of Powells Pinnacle	colony B 23
swift parrot	Private	212 277	Benbows Road	foraging area
swift parrot	Private	230 213	Apollo Bay	foraging area
swift parrot	Reserve	242 293	Snug Point	foraging area
swift parrot	Private	243 216	2 km northwest of Roberts Hill	foraging area
swift parrot	Private	247 219	1.5 km northwest of Roberts Hill	foraging area
swift parrot	Private	254 220	Roberts Hill	nest
swift parrot	Private	255 228	0.5 km southwest of Rosebanks Beach	foraging area
swift parrot	Private	257 219	Roberts Hill	nest
swift parrot	Private	258 215	Roberts Hill	nest
swift parrot	Private	259 215	Roberts Hill	foraging area
swift parrot	Private	261 225	Sykes Cove	foraging area
swift parrot	Private	264 211	0.5 km east of Roberts Hill	nest
swift parrot	Private	264 223	Sykes Cove	foraging area
swift parrot	Private	265 213	0.5 km east of Roberts Hill	foraging area
swift parrot	Private	267 272	1.5 km southwest of Lowes Hill	foraging area
swift parrot	Private	277 203	Robinsons Hill	nest
swift parrot	Private	296 217	Missionary Hills	nest
swift parrot	Private	299 223	Missionary Hills	nest
swift parrot	Private	303 221	1 km northeast of Missionary Hills	foraging area
swift parrot	Private	303 221	0.5 km east of Missionary Hills	foraging area
swift parrot	Private	303 263	Northeast Barnes Bay, Barnes Bay Road	foraging area
swift parrot	Private	304 218	0.5 km east of Missionary Hills	foraging area
swift parrot	Private	306 250	1.4 km east of Barnes Bay	foraging area
swift parrot	Private	306 255	1.5 km east of Barnes Bay	foraging area
eagles (white-bellied sea-eagle)	Com'w	Confidential	Quarantine Bay coastline	nest
eagles (white-bellied sea-eagle)	Private	Confidential	Near Richards Beach	nest
eagles (white-bellied sea-eagle)	Private	Confidential	Near Yellow Bluff	nest
eagles (white-bellied sea-eagle)	Private	Confidential	Bull Bay area	nest
southeast seastars *(Smilasteris tasmaniae)*	Crown	261 295	Bligh Point, North Bruny Island	colony
southeast seastars *(Smilasteris tasmaniae)*	Crown	290 245	Simmonds Bay, North Bruny Island	colony

Species May Occur in Suitable Habitat	Habitat to Survey
broad-striped ghost moth	Bruny Island heathland and sedgeland.
chaostola skipper	Dry open forest with *Gahnia radula* at low altitude.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
forty-spotted pardalote	Grassy dry forest and woodland with white gum within 3 km of the coast.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
southeast seastars (live-bearing seastar and *Smilasteris tasmaniae*)	Coastal, intertidal rocky areas.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
spotted handfish	Derwent River estuary and adjoining bays and channels.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
swift parrot	Forest and woodland dominated by blue gum or black gum within 10 km of the coast, including slopes and ridges.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

BARRETTS 5852

Known Localities of Species	Tenure	Map Grid	Locality	Notes
coastal birds (little penguin)	Crown	998 205	Battery Island, Bass Strait	colony
coastal birds (little penguin)		878 236	Spike Island, near Key Island	colony
coastal birds (little penguin, w-fronted tern)	Crown	870 233	Key Island	breeding sites
coastal birds (white-fronted tern)	Crown	998 205	Battery Island, Bass Strait	breeding site
coastal birds (hooded plover)	Crown	963 222	Dyas Bay, Cape Barren Island	breeding site
coastal birds (hooded plover)		936 218	Brearleys Beach, Cape Barren Island	breeding site
coastal birds (hooded plover)		885 235	Key Island Bay, Cape Barren Island	breeding site
coastal birds (hooded plover)		874 244	Modder River entrance, Cape Barren Is.	breeding site
coastal birds (hooded plover)		863 256	Thunder and Lightening Bay, Cape B Is.	breeding site
coastal birds (hooded plover)			Freds Beach, Cape Barren Island	breeding site

Species May Occur in Suitable Habitat	Habitat to Survey
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
coastal birds (white-fronted tern)	Sand or shingle beaches, unvegetated sites near estuaries and nearby lakes, and estuarine and offshore islands.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

BEACONSFIELD 4843

Known Localities of Species	Tenure	Map Grid	Locality	Notes
green and gold frog	Private	930 302	Northwest of Exeter	
eagles (wedge-tailed)	Crwn/Prv	Confidential	Flowery Gully area	nest
eagles (white-bellied sea-eagle)	Private	Confidential	Middle Arm	nest
eagles (white-bellied sea-eagle)	Private	Confidential	Spring Bay	nest
eagles (white-bellied sea-eagle)	Private	Confidential	Spring Bay	nest
eagles (white-bellied sea-eagle)	Res/Crwn	943 370	Tamar River and estuary	key foraging

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.

eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
New Holland mouse	Dry coastal heathland and open heathy forest.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

BEAUMARIS (Scamander) 6041

Known Localities of Species	Tenure	Map Grid	Locality	Notes
Australian grayling		005 106	Middle and lower Scamander River	
velvet worms (giant)	SF	003 179	Loila Tier, Loita Tier WPA	
velvet worms (giant)	Private	018 115	Trout Road	
velvet worms (giant)	SF	021 148	Arm Creek	
velvet worms (giant)	SF	034 114	Scamander River	
velvet worms (giant)	SF	036 179	Basin Creek, Basin Creek WPA	
velvet worms (giant)	SF	042 180	Basin Creek	
velvet worms (giant)	Priv / SF	052 185	Basin Creek	
velvet worms (giant)	Private	068 157	Dark Hollow Creek	
coastal birds (hooded plover)	Reserve	060 108	Wrinklers Beach - key survey site	breeding site
coastal birds (hooded plover)	Reserve	068 142	Beaumaris Beach - key survey site	breeding site
coastal birds (hooded plover, little tern)	Reserve	079 180	Dianas Beach - key survey site	breeding site
coastal birds (little tern)	Reserve	057 092	Scamander River - key survey site	breeding site
eagles (wedge-tailed)	SF	Confidential	Near Pitts Hill	nest near
eagles (wedge-tailed)	SF	Confidential	Near Hospital Corner	nest near
eagles (wedge-tailed)	SF	Confidential	Near Skyline Tier	nest near
eagles (wedge-tailed)	SF	Confidential	Near Flagstaff Lookout	nest

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers, esp. Scamander River.
velvet worms (giant)	Eucalypt forest with rotting logs.
great crested grebe	Lakes, rivers and estuaries.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
New Holland mouse	Dry coastal heathland and open heathy forest.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
coastal birds (little tern)	Sand or shingle beaches, unvegetated sites near estuaries and nearby lakes, and estuarine and offshore islands.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
swift parrot	Forest and woodland dominated by blue gum or black gum within 10 km of the coast, including slopes and ridges.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

BELL BAY 4844

Known Localities of Species	Tenure	Map Grid	Locality	Notes
green and gold frog	Private	927 411	Rowella	
eagles (wedge-tailed)	Private	Confidential	Near Ralstons Hill	nest
eagles (wedge-tailed)	SF	Confidential	West of Curries River Reservoir	nest (Bass D)
eagles (wedge-tailed)	SF	Confidential	Near Tippogoree Hills	nest

eagles (white-bellied sea-eagle)	Private	Confidential	Bell Bay area	nest
eagles (white-bellied sea-eagle)		862 430	Tamar River and estuary	key foraging

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
New Holland mouse	Dry coastal heathland and open heathy forest.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

BELLINGER (Henty) 3533

Known Localities of Species	Tenure	Map Grid	Locality	Notes
coastal birds (hooded plover)	Reserve	564 330	Ocean Beach and Denison Beach	breeding
coastal birds (fairy tern)	Reserve	562 310	Ocean Beach	observed
orange-bellied parrot	Reserve	563 319	Ocean Beach, Strahan	historical '78
orange-bellied parrot	Crown	550 435	Henty River	historical '74

Species May Occur in Suitable Habitat	Habitat to Survey
orange-bellied parrot	Migration feeding habitat: saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast, including vegetated offshore islands.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

BEN NEVIS 5441

Known Localities of Species	Tenure	Map Grid	Locality	Notes
northeast forest snail	SF	433 167	Beckett Creek	
northeast forest snail	SF	494 125	Billybrook Creek	
northeast forest snail	SF	517 124	Upper Blessington Road	
northeast forest snail	SF	562 153	Joseph Creek	
northeast forest snail	SF	569 112	Stag Creek	
northeast forest snail	SF	570 168	Tombstone Creek	
eagles (wedge-tailed)	SF	Confidential	Near Porcupine Ridge	nest
eagles (wedge-tailed)	SF	Confidential	Near Porcupine Ridge	nest
eagles (wedge-tailed)	SF	Confidential	Near Memory Creek	nest

Species May Occur in Suitable Habitat	Habitat to Survey
northeast forest snail	Rainforest, mixed forest or wet forest containing rainforest elements.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

BERTHA 3442

Known Localities of Species	Tenure	Map Grid	Locality	Notes
freshwater snails (*Beddomeia angulata*)	Crwn/SF	583 274	Tributary of Rapid River, Pipeline Road	type locality

Species May Occur in Suitable Habitat	Habitat to Survey
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

BERYL 3443

Known Localities of Species	Tenure	Map Grid	Locality	Notes
freshwater snails (*Beddomeia angulata*)	SF	600 322	Rapid River tributary, NE of Mt Bertha	
velvet worms (northwest)	SF	435 385	Dodds Creek	
eagles (wedge-tailed)	SF	Confidential	South of Lost Hill	nest near

Species May Occur in Suitable Habitat	Habitat to Survey
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes, especially the Rapid River.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
velvet worms (northwest)	Wet forest with rotting logs and woody ground litter.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

BICHENO 6036 (Bicheno-Seymour)

Known Localities of Species	Tenure	Map Grid	Locality	Notes
coastal birds (little penguin)	FReserve	070 650	Diamond Island	colony
coastal birds (white-fronted tern)	Crown	088 632	Governor Island	observed
coastal birds (hooded plover)	Reserve	050 715	Denison Beach - key site	breeding site
eagles (wedge-tailed)	Private	Confidential	Denison Rivulet	nest near
eagles (wedge-tailed)	SF	Confidential	Bicheno area	nest
marine turtles (leatherback)			Beachwashed Denison Beach	1959 record

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Middle and lower reaches of Apsley River and Denison River.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
forty-spotted pardalote	Grassy dry forest and woodland with white gum within 3 km of the coast.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
New Holland mouse	Dry coastal heathland and open heathy forest.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
swift parrot	Forest and woodland dominated by blue gum or black gum within 10 km of the coast, including slopes and ridges.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

BINALONG 6043

Known Localities of Species	Tenure	Map Grid	Locality	Notes
green and gold frog	Reserve	086 319	Grants Lagoon	
New Holland mouse	SF	062 346	Tributary of Swimcart Creek	colony
coastal birds (hooded plover)	Reserve	065 385	Taylors Beach - survey site	breeding site
coastal birds (hooded plover)	Reserve	085 327	Binalong Bay - survey site	breeding site
coastal birds (hooded plover)	Reserve	081 338	Jeanneret Beach - survey site	breeding site
swift parrot	Reserve	096 325	Binalong Bay	foraging area
eagles (white-bellied sea-eagle)	Reserve	Confidential	Near Humbug Hill	nest
eagles (white-bellied sea-eagle)	Reserve	Confidential	South of Binalong Bay	nest
eagles (white-bellied sea-eagle)	Reserve	Confidential	Near Humbug Hill	nest
marine turtles (leatherback)	Crown		Entangled at sea off Binalong Bay	1969 record

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	George River (middle and lower parts).
broad-striped ghost moth	Woodland and sedge at Binalong Bay.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
New Holland mouse	Dry coastal heathland and open heathy forest.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
swift parrot	Forest and woodland dominated by blue gum or black gum within 10 km of the coast, including slopes and ridges.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

BIRCHS 3629

Known Localities of Species	Tenure	Map Grid	Locality	Notes
orange-bellied parrot	FReserve	Confidential	Birchs Inlet	breeding site

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
orange-bellied parrot	Breeding and migration feeding habitat: buttongrass plains with eucalypt forest patches, saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

BIRD 3050

Known Localities of Species	Tenure	Map Grid	Locality	Notes
eagles (white-bellied sea-eagle)	FReserve	Confidential	Hunter Island	nest
eagles (white-bellied sea-eagle)	FReserve	Confidential	Hunter Island	nest
coastal birds (fairy tern)	FReserve		Hunter Island coastline	breeding site
coastal birds (little penguin)	FReserve	102 024	Weber Point, southern tip of Hunter Is.	colony
coastal birds (little penguin)	FReserve	074 057	Around Perigo Point, west Hunter Island	colony
coastal birds (little penguin, s-t shearwater)	FReserve	118 025	Stack Island, southeast of Hunter Island	colonies
coastal birds (little penguin, s-t shearwater)	Crown	121 030	Dugay Islets	colonies
coastal birds (little penguin, s-t shearwater)	Crown	122 032	Edwards Islet	colonies
coastal birds (little penguin, s-t shearwater)	FReserve	146 060	Penguin Island	colonies
coastal birds (little penguin, s-t shearwater)	Crown	086 608	Sea Crow Islet	colonies

coastal birds (little penguin, s-t shearwater)	FReserve	069 025	Bird Island	colonies
coastal birds (short-tailed shearwater)	FReserve	096 030	South and west coast of Hunter Island	colonies
coastal birds (short-tailed shearwater)	TA		Steep Island	colony

Species May Occur in Suitable Habitat	**Habitat to Survey**
orange-bellied parrot	Migration feeding habitat: saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast, including vegetated offshore islands.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.

BISDEE 4619

Species May Occur in Suitable Habitat	**Habitat to Survey**
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

BLACKMANS BAY 5223

Known Localities of Species	**Tenure**	**Map Grid**	**Locality**	**Notes**
Australian grayling	Crown	217 366	North West Bay River near bridge	
broad-striped ghost moth	Private	258 389	Blackmans Bay	
forty-spotted pardalote	Reserve	237 393	Penrhyn Pond, Huntingfield Reserve	colony H 1
forty-spotted pardalote	Reserve	237 389	Heron Pond, Huntingfield Reserve	colony H 2
forty-spotted pardalote	Private	263 365	Fossil Cove, Tinderbox	colony T 1
forty-spotted pardalote	Private	267 359	Tinderbox Road	colony T 2
forty-spotted pardalote	Private	264 355	Tinderbox Hills	colony T 3
forty-spotted pardalote	Reserve	259 347	Magazine Reserve, Tinderbox Hills	colony T 4
forty-spotted pardalote	Private	264 343	Behind Quarry Reserve, Tinderbox	colony T 5
forty-spotted pardalote	Private	262 335	West of McGowans, Tinderbox	colony T 6
forty-spotted pardalote	Reserve	277 333	Piersons Park, Tinderbox	colony T 7
forty-spotted pardalote	Private	269 328	Tinderbox Bay Road	colony T 8
forty-spotted pardalote	Private	258 329	Gully above Tinderbox Bay	colony T 9
forty-spotted pardalote	Private	255 335	Gully west of Tinderbox Bay	colony T 10
forty-spotted pardalote	Private	258 334	Gully west of Tinderbox Bay	colony T 11
forty-spotted pardalote	Private	265 334	McGowans Gully, Tinderbox	colony T 12
forty-spotted pardalote	Private	292 310	West Sheep Hill, Bruny Island	colony B 1
forty-spotted pardalote	Private	280 303	Nebraska Beach, North Bruny Island	colony B 2
forty-spotted pardalote	Private	286 303	Top of Dennes Hill, Bruny Island	colony B 3
swift parrot	Private	241 352	Howden area	foraging area
swift parrot	Private	252 332	Tinderbox Hills area	foraging area
swift parrot	Private	253 326	Tinderbox and surrounds	foraging area
swift parrot	Private	254 366	Tinderbox Hills	nest
swift parrot	Private	255 367	Tinderbox Hills area	foraging area
swift parrot	Private	257 326	Tinderbox and surrounds	foraging area
swift parrot	Reserve	257 347	Tinderbox Hills area	foraging area
swift parrot	Reserve	262 348	Tinderbox Hills area	foraging area
swift parrot	Private	262 352	Tinderbox Hills area	foraging area
swift parrot	Private	263 350	Tinderbox Hills area	foraging area
swift parrot	Private	266 391	Blackmans Bay area	foraging area
swift parrot	Private	266 394	Blackmans Bay area	foraging area
eagles (wedge-tailed)	Private	Confidential	Tinderbox Hills	nest
eagles (wedge-tailed)	Private	Confidential	Tinderbox Hills	nest
eagles (wedge-tailed)	Private	Confidential	Tinderbox Hills	nest
eagles (wedge-tailed)	FReserve	Confidential	Near Betsey Island	nest
eagles (white-bellied sea-eagle)	FReserve	Confidential	Near Betsey Island	nest
coastal birds (hooded plover)	Priv / Res	398 370	Calverts Lagoon - key site	breeding site
coastal birds (hooded plover)		353 346	Dunes around Hopes Beach	breeding site

coastal birds (migratory waders)	Priv / Res	398 370	Calverts Lagoon - key site	foraging site
coastal birds (short-tailed shearwater)	FReserve	390 339	Betsey Island	colony
coastal birds (little penguin, s-t shearwater)	FReserve	340 333	Cape (Fort) Direction	colonies
spotted handfish		Confidential	Derwent River and adjoining channels	colony
southeast seastars (live-bearing seastar)	Reserve	244 340	Intertidal area of Powder Jetty, Howden	colony

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of North West Bay River.
broad-striped ghost moth	Shrubby woodland and sedgeland.
chaostola skipper	Dry open forest with *Gahnia radula* at low altitude.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
forty-spotted pardalote	Grassy dry forest and woodland with white gum within 3 km of the coast.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
southeast seastars (live-bearing seastar)	Intertidal rocky areas, on sandstone.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
spotted handfish	Derwent River estuary and adjoining bays and channels.
swift parrot	Forest and woodland dominated by blue gum or black gum within 10 km of the coast, including slopes and ridges.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

BLESSINGTON 5240

Known Localities of Species	Tenure	Map Grid	Locality	Notes
eagles (wedge-tailed)	Private	Confidential	Oakdens Ravine	nest near
eagles (wedge-tailed)	Private	Confidential	North Esk River	nest
eagles (wedge-tailed)	Private	Confidential	North Esk River	nest near
eagles (wedge-tailed)	FReserve	Confidential	Near Weavers Creek	nest

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

BLOCK 3838

Species May Occur in Suitable Habitat	Habitat to Survey
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
ptunarra brown butterfly	Native grassland or woodland with more than 15% cover of tussock grass.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

BLUE TIER 5843

Known Localities of Species	Tenure	Map Grid	Locality	Notes
velvet worms (giant)	SF	853 327	Pyengana	
velvet worms (giant)	SF	860 301	Pyengana Saddle	
velvet worms (giant)	SF	861 302	Pyengana Saddle	
velvet worms (giant)	SF	862 310	Pyengana Saddle	

velvet worms (giant)	SF	863 303	Pyengana Saddle	
velvet worms (giant)	SF	864 302	Pyengana Saddle	
velvet worms (giant)	SF	866 313	Honeymoon Creek	control site
velvet worms (giant)	SF	867 311	Honeymoon Creek	control site
velvet worms (giant)	SF	868 312	Honeymoon Creek	control site
velvet worms (giant)	Priv / SF	882 348	Ransom River	
velvet worms (giant)	SF	899 303	George River	
velvet worms (giant)	SF	963 304	Pyengana Saddle	
velvet worms (giant)	SF	864 301	GC171A	coupe
velvet worms (giant)	SF	864 303	GC171A	coupe
velvet worms (giant)	SF	864 304	GC171A	coupe
velvet worms (giant)	SF	865 303	GC171A	coupe
velvet worms (giant)	SF	861 304	GC171A	coupe
northeast forest snail	SF		Goulds Country	
northeast forest snail	SF		Lottah	
northeast forest snail	SF	825 347	Lehners Ridge	
northeast forest snail	SF	830 365	Crystal Creek, Lottah Road	
northeast forest snail	SF	847 398	Near Sun Creek, Blue Tier	
northeast forest snail	Reserve	852 361	Lottah	
northeast forest snail	Private	880 340	Halls Hill	
northeast forest snail	Private	885 341	Near Marguerita Ridge	
northeast forest snail	SF	898 397	New England Link junction	
northeast forest snail	SF	901 376	Platts Lookout	
northeast forest snail	Private	915 347	Marguerita Ridge	
northeast forest snail	SF	921 311	North of Goshen	
northeast forest snail	SF	925 337	Terrys Hill Road	
northeast stag beetles (Bornemisszas)	SF	909 337	Marguerita Ridge	
northeast stag beetles (Bornemisszas)	SF	922 349	Terrys Hill	
northeast stag beetles (Bornemisszas)	SF	925 336	Terrys Hill Road	
northeast stag beetles (Bornemisszas)	SF	934 364	Mother Logans Creek	
northeast stag beetles (Bornemisszas)	SF	975 329	Coupe GC149B	Richards '99
northeast stag beetles (Bornemisszas)	SF	910 325	Coupe GC149B	Richards '99
northeast stag beetles (Bornemisszas)	SF	928 340	Coupe GC149E	Richards '99
northeast stag beetles (Bornemisszas)	SF	922 345	Coupe GC016C	Richards '99
northeast stag beetles (Bornemisszas)	SF	933 360	Coupe GC152A	Richards '99
northeast stag beetles (Bornemisszas)	SF	933 364	Coupe GC152A	Richards '99
northeast stag beetles (Bornemisszas)	SF	901 328	Coupe GC148A	Richards '99
northeast stag beetles (Bornemisszas)	SF	934 351	Coupe GC152A	Richards '99
northeast stag beetles (Bornemisszas)	SF	931 347	Coupe GC016C	Richards '99
northeast stag beetles (Bornemisszas)	SF	932 346	Coupe GC016C	Richards '99
northeast stag beetles (Bornemisszas)	SF	929 347	Coupe GC018C	Richards '99
northeast stag beetles (Bornemisszas)	SF	982 350	Coupe GC016C	Richards '99
northeast stag beetles (Bornemisszas)	SF	925 331	Coupe GC150B	Richards '99
northeast stag beetles (Bornemisszas)	SF	925 332	Coupe GC150B	Richards '99
northeast stag beetles (Bornemisszas)	SF	925 331	Coupe GC150B	Richards '99
northeast stag beetles (Bornemisszas)	SF	897 336	Near Coupe GC148A	Richards '99
northeast stag beetles (Bornemisszas)	SF	911 347	Coupe GC148C/D	Richards '99
northeast stag beetles (Bornemisszas)	SF	910 348	Coupe GC148C/D	Richards '99
northeast stag beetles (Simsons)	SF	829 315	Organ Hill	
northeast stag beetles (Simsons)	SF	839 383	Poimena	
northeast stag beetles (Simsons)	SF	859 329	Groom River	
northeast stag beetles (Simsons)	SF	860 319	Anchor Road	
northeast stag beetles (Simsons)	Private	860 343	Private property adjacent to State Forest	
northeast stag beetles (Simsons)	SF	861 352	Lottah Rec. Reserve, Goughs Hill	

northeast stag beetles (Simsons)	SF	879 357	North Forest spur 2	
northeast stag beetles (Simsons)	SF	882 351	Wildlife habitat strip 2	
northeast stag beetles (Simsons)	SF	882 364	North Forest spur 1	
northeast stag beetles (Simsons)	SF	884 377	Sunflats Road	
northeast stag beetles (Simsons)	SF	887 356	Murdochs Road east	
northeast stag beetles (Simsons)	SF	890 358	Murdochs Road east	
northeast stag beetles (Simsons)	SF	896 382	Goulds Country coupe	
northeast stag beetles (Simsons)	SF	897 346	Boundary near private property	
northeast stag beetles (Simsons)	SF	903 392	Goulds Country coupe	
northeast stag beetles (Simsons)	SF	903 398	Wildlife habitat strip	
northeast stag beetles (Simsons)	SF	907 365	Murdochs Hill	
northeast stag beetles (Simsons)	SF	917 395	New England Road	
northeast stag beetles (Simsons)	SF	896 397	GC113A	coupe
northeast stag beetles (Simsons)	SF	894 393	GC113A	coupe
northeast stag beetles (Simsons)	SF	891 395	GC113A	coupe
northeast stag beetles (Simsons)	SF	913 388	GC004F	coupe
northeast stag beetles (Simsons)	SF	912 384	GC004F	coupe
northeast stag beetles (Simsons)	SF	915 382	GC004F	coupe
northeast stag beetles (Simsons)	SF	909 380	GC004G	coupe
northeast stag beetles (Simsons)	SF	906 378	GC004G	coupe
northeast stag beetles (Simsons)	SF	922 392	GC115B	coupe
northeast stag beetles (Simsons)	SF	917 390	GC115B	coupe
northeast stag beetles (Simsons)	SF	892 377	GC005A	coupe
northeast stag beetles (Simsons)	SF	895 370	GC005A	coupe
northeast stag beetles (Simsons)	SF	890 367	GC005A	coupe
northeast stag beetles (Simsons)	SF	890 363	GC146A	coupe
northeast stag beetles (Simsons)	SF	890 360	GC146A	coupe
northeast stag beetles (Simsons)	SF	888 354	GC146A	coupe
northeast stag beetles (Simsons)	SF	893 355	GC146A	coupe
northeast stag beetles (Simsons)	SF	873 375	GC118B	coupe
northeast stag beetles (Simsons)	SF	865 433	GC145A	coupe
northeast stag beetles (Simsons)	SF	863 336	GC145B	coupe
northeast stag beetles (Simsons)	SF	859 333	GC145B	coupe
northeast stag beetles (Simsons)	SF	863 333	GC145B	coupe
northeast stag beetles (Simsons)	SF	869 328	GC145C	coupe
northeast stag beetles (Simsons)	SF	874 333	GC145D	coupe
northeast stag beetles (Simsons)	SF	874 331	GC145D	coupe
northeast stag beetles (Simsons)	SF	852 316	GC165A	coupe
northeast stag beetles (Simsons)	SF	855 310	GC165B	coupe
northeast stag beetles (Simsons)	SF	853 320	GC165B	coupe
northeast stag beetles (Simsons)	SF	863 321	GC165C	coupe
northeast stag beetles (Simsons)	SF	860 319	GC165C	coupe
northeast stag beetles (Simsons)	SF	858 327	GC165D	coupe
northeast stag beetles (Simsons)	SF	830 316	GC163A	coupe
northeast stag beetles (Simsons)	SF	832 318	GC163A	coupe
northeast stag beetles (Simsons)	SF	833 321	GC 163A	coupe
northeast stag beetles (Simsons)	SF	975 328	GC149B	Richards '99
northeast stag beetles (Simsons)	SF	902 328	GC148A	Richards '99
northeast stag beetles (Simsons)	SF	902 327	GC149D	Richards '99
northeast stag beetles (Simsons)	SF	897 336	Near GC148A	Richards '99
northeast stag beetles (Simsons)	SF	906 350	GC148B	Richards '99
northeast stag beetles (Simsons)	SF	905 349	GC148B	Richards '99
freshwater snails (*Beddomeia tasmanica*)	SF	926 341	Terrys Creek, Terrys Hill Road	

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
velvet worms (giant)	Eucalypt forest with rotting logs.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
northeast forest snail	Rainforest, mixed forest or wet forest containing rainforest elements.
northeast stag beetles (all 3 species)	Wet forest with a well-developed litter layer on well-drained soils.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

BLUFF 3045

Known Localities of Species	Tenure	Map Grid	Locality	Notes
Australian grayling	Reserve	032 523	Arthur River at mouth	
Australian grayling	Reserve	035 526	Arthur River near bridge	
Australian grayling	Crown	053 542	Arthur River at Big Bend	
caddisfly (*Stenopsychodes lineata*)	Reserve	038 575	Bluff Hill Creek, 12 km S of Marrawah	
keeled snail	SF	128 503	Arthur and Frankland River junction	
coastal birds (hooded plover)	Reserve	038 510	Arthur Beach - survey site	breeding site
coastal birds (hooded plover)	Reserve	006 580	Mawsons Bay	breeding site
coastal birds (little penguin)	Reserve	015 533	Australia Point	colony
orange-bellied parrot	FReserve	989 571	Bluff Hill Point	migration '99
eagles (wedge-tailed)	Reserve	Confidential	Near Elver Falls	nest near
eagles (wedge-tailed)	Reserve	Confidential	Near Big Bend	nest near
eagles (wedge-tailed)	SF	Confidential	Near Fairview Hill	nest near
eagles (white-bellied sea-eagle)	Reserve	Confidential	Near Big Bend	nest
eagles (white-bellied sea-eagle)	Reserve	Confidential	East of Arthur River	nest

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Middle and lower parts of Arthur River.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes below about 400 m alt., esp. the Arthur River.

BOBS 4620

Species May Occur in Suitable Habitat	Habitat to Survey
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

BOLTONS 5829 (see Bougainville 5829, Grindstone 5830)

BORRADAILE 4238

Known Localities of Species	Tenure	Map Grid	Locality	Notes
eagles (wedge-tailed)	SF	Confidential	Borradaile Plains, Arm River	nest
eagles (wedge-tailed)	SF	Confidential	Near Deception Point	nest
eagles (wedge-tailed)	SF	Confidential	Near Deception Point	nest

Species May Occur in Suitable Habitat	Habitat to Survey
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
ptunarra brown butterfly	Native grassland or woodland with more than 15% cover of tussock grass.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

BOTHWELL 5030

Known Localities of Species	Tenure	Map Grid	Locality	Notes
ptunarra brown butterfly	Private	156 028	Little White Hill	colony
ptunarra brown butterfly	Private	165 002	Big White Hill	colony
ptunarra brown butterfly	Private	183 067	Below Spring Hill Tier	colony
ptunarra brown butterfly	Private	193 023	Hoopers Gully	colony

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
giant freshwater lobster	Clyde River - translocated population
ptunarra brown butterfly	Native grassland or woodland with more than 15% cover of tussock grass.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

BOUGAINVILLE (Boltons) 5829

Known Localities of Species	Tenure	Map Grid	Locality	Notes
eagles (wedge-tailed)	Private	Confidential	Mount Murray area	nest
eagles (wedge-tailed)	Private	Confidential	Mount Murray area	nest
eagles (white-bellied sea-eagle)	Private	Confidential	Cape Bougainville area	nest
eagles (white-bellied sea-eagle)	Private	Confidential	Near Grindstone Point	nest
eagles (white-bellied sea-eagle)	Private	Confidential	Near Grindstone Point	nest

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
forty-spotted pardalote	Grassy dry forest and woodland with white gum within 3 km of the coast.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
swift parrot	Forest and woodland dominated by blue gum or black gum within 10 km of the coast, including slopes and ridges.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

BOWES 4425

Known Localities of Species	Tenure	Map Grid	Locality	Notes
eagles (wedge-tailed)	SF	Confidential	Near Mount Wedge	nest
caddisfly (*Orphninotrichia maculatai*)	FReserve	493 513	Gelignite Creek	Jackson '99

Species May Occur in Suitable Habitat	Habitat to Survey
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
Hickmans pygmy mountain shrimp	Buttongrass areas within the original Lake Pedder-Serpentine drainage.
Pedder galaxias	Tributaries of the Lake Pedder impoundment.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

BOWOOD 5245

Known Localities of Species	Tenure	Map Grid	Locality	Notes
green and gold frog	Private	357 590	Waterhouse Road	key site
green and gold frog	Private	389 580	Boddingtons Road	
eagles (white-bellied sea-eagle)	Private	Confidential	South of Bridport	nest
giant freshwater lobster			Little Forester River and tributaries	key catchm't

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
dwarf galaxiid	Slow-flowing and still waters with aquatic vegetation, especially around Waterhouse area.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes, below about 400 m alt., esp. Great Forester River and Little Forester River.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.
coastal birds (hooded plover)	Sandy ocean beaches and dunes around Trentwater and Bridport.

BRADYS LOOKOUT 4836

Known Localities of Species	Tenure	Map Grid	Locality	Notes
ptunarra brown butterfly	HEC	865 695	Sandbanks Creek	colony
Great Lake ecosystem *(Tasniphargus tyleri)*	HEC	825 660	Great Lake benthos	type locality
Great Lake ecosystem *(Onchotelson brevicaudatus)*	HEC	845 635	Cramps Bay, Great Lake	
Great Lake ecosystem *(Onchotelson spatulatus, Glacidorbis pawpela)*	HEC	813 623	Elizabeth Bay, Great Lake	
Great Lake ecosystem *(Onchotelson spatulatus)*	HEC	818 628	Elizabeth Bay, Great Lake	

Species May Occur in Suitable Habitat	Habitat to Survey
Great Lake ecosystem (all species)	Great Lake margin, benthos, sediments.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
ptunarra brown butterfly	Native grassland or woodland with more than 15% cover of tussock grass.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

BREAKSEA 4020

Known Localities of Species	Tenure	Map Grid	Locality	Notes
coastal birds (fairy tern)	FReserve	102 091	Kelly Basin, Port Davey	breeding site
coastal birds (fairy tern)	FReserve		Port Davey coastline	breeding site
coastal birds (fairy tern)	FReserve	106 096	Bond Bay coastline	breeding site
coastal birds (hooded plover)	FReserve	049 070	Quail Flat Beach	breeding site
coastal birds (little penguin)	FReserve	034 072	Trumpeter Islets (west)	colony
coastal birds (short-tailed shearwater)	FReserve	157 000	Shanks Island	colony
coastal birds (short-tailed shearwater)	FReserve	159 044	Kathleen Island	colony
coastal birds (short-tailed shearwater)	FReserve	161 019	Main Breaksea Island	colony
coastal birds (short-tailed shearwater)	FReserve	164 026	North Breaksea Island	colony
coastal birds (short-tailed shearwater)	FReserve	041 054	West Pyramid	colony
coastal birds (short-tailed shearwater)	FReserve	037 072	Trumpeter Island	colony
eagles (white-bellied sea-eagle)	FReserve	Confidential	Near Davey Head	nest
eagles (white-bellied sea-eagle)	FReserve	Confidential	Near Kathleen Island	nest

Species May Occur in Suitable Habitat	Habitat to Survey
orange-bellied parrot	Breeding and migration feeding habitat: buttongrass plains with eucalypt forest patches, saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast.
coastal birds (fairy tern)	Sand or shingle beaches, unvegetated sites near estuaries and nearby lakes, and estuarine and offshore islands.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

BREONA 4637

Known Localities of Species	Tenure	Map Grid	Locality	Notes
Great Lake ecosystem *(Onchotelson brevicaudatus)*	HEC	732 705	Brandum Bay, Great Lake	type locality
Great Lake ecosystem *(Uramphisopus pearsoni)*	HEC	762 701	Brandum Bay, Great Lake	type locality
Great Lake ecosystem *(Glacidorbis pawpela)*	HEC	762 701	Brandum Bay, Great Lake	
pencil pine moth	FReserve	741 782	750 m southwest of Adams Peak	
pencil pine moth	FReserve	745 789	Adams Peak	
ptunarra brown butterfly	FReserve	750 760	Mickeys Creek	colony
eagles (wedge-tailed)	SF	Confidential	Jackeys Marsh area	nest

Species May Occur in Suitable Habitat	Habitat to Survey
Great Lake ecosystem (all species)	Great Lake, including benthos and sediments.
pencil pine moth	Pencil pine forest.
ptunarra brown butterfly	Native grassland or woodland with more than 15% cover of tussock grass.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

BRIDGENORTH 4841

Known Localities of Species	Tenure	Map Grid	Locality	Notes
eagles (wedge-tailed)	Private	Confidential	Near Black Sugarloaf Ridge	nest
eagles (wedge-tailed)	Private	Confidential	Near Black Sugarloaf Ridge	nest
eagles (wedge-tailed)	SF	Confidential	The Tump area	nest near
eagles (wedge-tailed)	SF	Confidential	The Tump area	nest

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

BRIDPORT 5246

Known Localities of Species	Tenure	Map Grid	Locality	Notes
Australian grayling	Crown	396 600	Great Forester River on Waterhouse Rd	
coastal birds (fairy tern, hooded plover)	Crown	333 605	Bridport River mouth	breeding sites
coastal birds (fairy tern, little tern, hooded plover)	Reserve	372 608	Great Forester River mouth, Adams Cut	breeding sites
coastal birds (fairy tern, hooded plover)	Reserve	298 650	Lades Beach	breeding sites
coastal birds (little penguin, s-t shearwater)	Priv/Crw		Ninth Island, north of St Albans Bay	colonies
giant freshwater lobster	Priv / Res		Great Forester River and tributaries	key catchm't
giant freshwater lobster	Priv / Res		Little Forester River and tributaries	key catchm't
marine turtles (leatherback)	Crown		Sighted at sea off Bridport	1957 record

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
New Holland mouse	Dry coastal heathland and open heathy forest.
coastal birds (fairy tern, little tern)	Sand or shingle beaches, unvegetated sites near estuaries and nearby lakes, and estuarine and offshore islands.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

BRILLIANT 5841

Known Localities of Species	Tenure	Map Grid	Locality	Notes
caddisfly (*Hydroptila scamandra*)	SF	997 112	Scamander River, Upper Scamander	
velvet worms (giant)	SF	803 140	Robinson Creek	
velvet worms (giant)	FReserve	813 161	Evercreech area	
velvet worms (giant)	FReserve	813 163	Evercreech Rivulet, Evercreech Fr. Res.	Doran '99
velvet worms (giant)	SF / FRes	814 163	Evercreech Rivulet	
velvet worms (giant)	SF	825 167	Back Gully Creek	
velvet worms (giant)	SF	839 118	Barrows Creek	
velvet worms (giant)	SF	843 188	Coupe UR0202B, Haleys Road	Horner '98
velvet worms (giant)	SF	849 162	Western Golden Ridge, Hogans Road	Horner '98
velvet worms (giant)	SF	856 178	Hogans Road	
velvet worms (giant)	SF	864 193	West of Risky Ridge, Carters Road	Horner '98
velvet worms (giant)	SF	869 132	Hogans Road	
velvet worms (giant)	SF	873 198	Carters Road, northwest of Risky Ridge	Horner '98
velvet worms (giant)	SF	883 165	Trafalgar Flat	
velvet worms (giant)	SF	900 195	Carters Road	
velvet worms (giant)	SF	929 178	Carters Creek	
velvet worms (giant)	SF	937 175	Haleys Creek	
velvet worms (giant)	SF	940 177	Carters Track	

velvet worms (giant)	SF	941 179	Haleys Creek	
velvet worms (giant)	SF	942 178	Carters Track	
velvet worms (giant)	SF	942 181	Haleys Creek	
velvet worms (giant)	SF		Wildlife Priority Area near Haleys Crk	WPA
velvet worms (giant)	SF	943 172	Carters Track	
velvet worms (giant)	SF	962 152	Wolfram Creek	
velvet worms (giant)	SF	999 130	Eastern Creek Road	
northeast forest snail	FReserve	815 154	Evercreech Reserve	
eagles (wedge-tailed)	SF	Confidential	Near Constable Creek	nest near

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Scamander River (middle and lower reaches).
velvet worms (giant)	Eucalypt forest with rotting logs.
northeast forest snail	Rainforest, mixed forest or wet forest containing rainforest elements.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

BROADMARSH 5027

Known Localities of Species	Tenure	Map Grid	Locality	Notes
eagles (wedge-tailed)	SF	Confidential	Billy Camp Marsh	nest
eagles (wedge-tailed)	SF	Confidential	Billy Camp Marsh	nest
eagles (wedge-tailed)	SF	Confidential	Billy Camp Marsh	nest
eagles (wedge-tailed)	Private	Confidential	Billy Camp Marsh	nest
eagles (wedge-tailed)	SF	Confidential	Billy Camp Marsh	nest
eagles (wedge-tailed)	SF	Confidential	Gittus Marsh, Grahams Creek	nest

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
swift parrot	Forest and woodland dominated by blue gum or black gum within 10 km of the coast, including slopes and ridges.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

BRONTE 4433

Known Localities of Species	Tenure	Map Grid	Locality	Notes
Clarence galaxias	SF	Confidential	Streams, Clarence and Nive Catchments	
ptunarra brown butterfly	Private	541 334	Nive Plains	colony
ptunarra brown butterfly	Private	573 346	West of Bronte Park on Nile River	colony
ptunarra brown butterfly	Private	576 313	Marlborough - Lyell Highway junction	colony
eagles (wedge-tailed)	SF	Confidential	Nive Plains area	nest near
eagles (wedge-tailed)	SF	Confidential	North of Nive Plains	nest near
eagles (wedge-tailed)	SF	Confidential	North of Nive Plains	nest near

Species May Occur in Suitable Habitat	Habitat to Survey
Clarence galaxias	Streams, marshes and lakes without brown trout in the Clarence and Nive catchments.

eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
pencil pine moth	Pencil pine forest.
ptunarra brown butterfly	Native grassland or woodland with more than 15% cover of tussock grass.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

BUCKLAND 5428

Known Localities of Species	Tenure	Map Grid	Locality	Notes
southeast stag beetles (broad-toothed)	Private	514 800	Roadside of Bust-Me-Gall Hill	
swift parrot	Private	522 809	Stringy Bark Bottom	foraging area
swift parrot	Private	525 814	Stringy Bark Bottom	foraging area

Species May Occur in Suitable Habitat	Habitat to Survey
southeast stag beetles (broad-toothed)	Dry or wet forest with rotting logs and litter on the ground.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
swift parrot	Forest and woodland dominated by blue gum or black gum within 10 km of the coast, including slopes and ridges.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

BURGESS 4621

Species May Occur in Suitable Habitat	Habitat to Survey
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
southeast stag beetles (Mt Mangana)	Wet forest containing decaying logs.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

BURNIE 4045

Known Localities of Species	Tenure	Map Grid	Locality	Notes
Australian grayling	Reserve	022 552	Cam River about 1 km from mouth	
Australian grayling	Reserve	136 513	Blythe River about 2 km from mouth	
Australian grayling	Reserve	184 500	Sulphur Creek at mouth	
coastal birds (little penguin)	Crown	029 561	Camdale east to Parsonage Point	colony
coastal birds (little penguin)	Reserve	121 535	Round Hill Point and surrounding coast	colony
burrowing crayfish (Burnie)	Private	054 539	Cooee Creek	key site
burrowing crayfish (Burnie)	Private	056 523	Cooee Creek	key site
burrowing crayfish (Burnie)	Private	064 533	Shorewell Creek	key site
burrowing crayfish (Burnie)	Private	065 525	Shorewell Creek	key site
burrowing crayfish (Burnie)	Council	067 544	Shorewell Creek	key site
burrowing crayfish (Burnie)	Council	068 551	Shorewell Creek	key site
burrowing crayfish (Burnie)	Private	070 511	Romaine Creek	key site
burrowing crayfish (Burnie)	Council	080 513	Romaine Creek	key site
burrowing crayfish (Burnie)	Private	083 521	Romaine Creek	key site

burrowing crayfish (Burnie)	Private	084 524	Romaine Creek	key site
giant freshwater lobster	Private	000 500	Cam River	
giant freshwater lobster	Priv / Crn	015 530	Cam River	
giant freshwater lobster	Res / Crn	015 530	Emu River and tributaries	key catchm't
velvet worms (northwest)	Private	019 512	Cam River area	
velvet worms (northwest)	Private	088 504	Fern Glade	
velvet worms (northwest)	Reserve	097 516	Fern Glade Reserve	
marine turtles (leatherback)	Com'w		Sighted 40 km north of Burnie	1968 record

Species May Occur in Suitable Habitat	**Habitat to Survey**
Australian grayling	Lower and middle reaches of coastal rivers, particularly Cam River.
burrowing crayfish (Burnie)	Survey all seepages and streambanks in the catchments of Cooee, Shorewell and Romaine Creeks.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes, below 400 m alt., esp. the Emu and Cam River.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
velvet worms (northwest)	Wet forest with rotting logs and woody ground litter.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

BUSHY PARK 4827

Known Localities of Species	**Tenure**	**Map Grid**	**Locality**	**Notes**
caddisfly (*Orthotrichia adornata*)	Private	924 713	Derwent River, Bushy Park	
green and gold frog	Private	948 716	Cawthorns Lane, Rosegarland	

Species May Occur in Suitable Habitat	**Habitat to Survey**
Australian grayling	Derwent River (middle and lower reaches).
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

CALDER 3845

Known Localities of Species	**Tenure**	**Map Grid**	**Locality**	**Notes**
burrowing crayfish (Burnie)	Priv / SF	917 558	Camp Creek	Doran 1998
burrowing crayfish (Burnie)	Private	918 545	Camp Creek	Doran 1998
burrowing crayfish (Burnie)	SF	921 561	Tributary of Cam Creek	Doran 1998
burrowing crayfish (Burnie)	Private	942 518	Tributary of Seabrook Creek	Doran 1998
burrowing crayfish (Burnie)	Private	946 520	Tributary of Seabrook Creek	Doran 1998
burrowing crayfish (Burnie)	Private	952 527	Tributary of Seabrook Creek	Doran 1998
burrowing crayfish (Burnie)	Private	953 508	Tributary of Seabrook Creek, Nunns Rd	key site

burrowing crayfish (Burnie)	Private	953 512	Tributary of Seabrook Creek	key site
burrowing crayfish (Burnie)	Private	955 513	Tributary of Seabrook Creek, Nunns Rd	key site
burrowing crayfish (Burnie)	Private	956 514	Tributary of Seabrook Creek, Nunns Rd	key site
burrowing crayfish (Burnie)	Private	956 516	Tributary of Seabrook Creek, Nunns Rd	key sites
burrowing crayfish (Burnie)	Crown	962 543	Seabrook Creek	key site
burrowing crayfish (Burnie)	Private	962 568	Tributary of Seabrook Creek	Doran 1998
burrowing crayfish (Burnie)	Private	966 566	Tributary of Seabrook Creek	Doran 1998
burrowing crayfish (Burnie)	Private	973 519	Tributary of Seabrook Creek	Doran 1998
burrowing crayfish (Burnie)	Private	974 518	Tributary of Seabrook Creek	Doran 1998
burrowing crayfish (Burnie)	Private	978 576	Catchment northeast of Busbys Hill	Doran 1998
burrowing crayfish (Burnie)	Private	979 580	Catchment northeast of Busbys Hill	Doran 1998
burrowing crayfish (Burnie)	Private	987 539	Distillery Creek	Doran 1998
burrowing crayfish (Burnie)	Private	987 542	Distillery Creek	Doran 1998
burrowing crayfish (Burnie)	Private	988 555	Catchment north of Seabrook Road	Doran 1998
giant freshwater lobster	SF	895 590	Big Creek	
giant freshwater lobster	Crown	962 543	Seabrook Creek	
giant freshwater lobster			Inglis River and Flowerdale River	key catchm't
eagles (wedge-tailed)	Private	Confidential	Distillery Creek	nest near
coastal birds (little penguin)	Reserve	978 589	Doctors Rocks	colony

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Middle and lower parts of Inglis River.
burrowing crayfish (Burnie)	Seepages and streambanks in the catchment of Seabrook Creek.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes, below about 400 m alt., especially the Inglis River and Flowerdale River.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
velvet worms (northwest)	Wet forest with rotting logs and woody ground litter.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

CAMERON 3047

Known Localities of Species	Tenure	Map Grid	Locality	Notes
dwarf galaxiid	Private	110 769	Pool in paddock, Welcome R catchment	
orange-bellied parrot	FReserve	069 736	Mt Cameron West	historical '77
coastal birds (hooded plover)	Reserve	071 760	Mt Cameron Beach - along length	breeding site
coastal birds (short-tailed shearwater)		060 779	Maxies Point	colony
coastal birds (short-tailed shearwater)		058 737	Mt Cameron West	colony

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
dwarf galaxiid	Slow-flowing and still waters with aquatic vegetation.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
keeled snail	Forest with deep damp litter.
orange-bellied parrot	Migration feeding habitat: saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast, including vegetated offshore islands.

coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

CAMPBELL TOWN 5435

Known Localities of Species	Tenure	Map Grid	Locality	Notes
ptunarra brown butterfly	Private	534 535	Stony Gully Road, north of highway	colony
ptunarra brown butterfly	Private	535 523	Stony Gully Road, south of highway	colony
ptunarra brown butterfly	Private	535 529	Stony Gully Road, midpoint of highway	colony
ptunarra brown butterfly	Private	555 512	Wells Marsh	colony
ptunarra brown butterfly	Reserve	593 581	Elizabeth River, near Chimney Hill	colony
ptunarra brown butterfly	Private	593 596	Black Snake Marsh East	colony
eagles (wedge-tailed)	Private	Confidential	Near The Pinnacles	nest (Spicer)
eagles (wedge-tailed)	Private	Confidential	Near Chimney Hill	nest

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
ptunarra brown butterfly	Native grassland or woodland with more than 15% cover of tussock grass.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

CARLTON 5425

Known Localities of Species	Tenure	Map Grid	Locality	Notes
green and gold frog	Private	499 588	Townsends Lagoon	key site
southeast seastars (live-bearing seastar)	Crown	408 506	Reef off Bambra Street, Roches Beach	colony
coastal birds (hooded plover)	Reserve	498 559	End of Seven Mile Beach - survey site	breeding site
coastal birds (migratory waders)	Reserve	410 597	Barilla Bay and Pittwater area	foraging sites
coastal birds (migratory waders)	Reserve	441 581	Five Mile Beach	foraging sites
coastal birds (short-tailed shearwater)	Private	522 518	Carlton Bluff	colony
coastal birds (little penguin, s-t shearwater)	Crown	490 536	Spectacle Island	colonies
coastal birds (white-fronted tern)	Crown	490 536	Spectacle Island	observed
eagles (white-bellied sea-eagle)	Private	Confidential	Connellys Marsh area	nest

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
forty-spotted pardalote	Grassy dry forest and woodland with white gum within 3 km of the coast.
southeast seastars (live-bearing seastar)	Intertidal rocky areas, on sandstone.
coastal birds (fairy tern)	Sand or shingle beaches, unvegetated sites near estuaries and nearby lakes, and estuarine and offshore islands. Seven Mile Beach - needs monitoring.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
spotted handfish	Derwent River estuary and adjoining bays and channels.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.

swift parrot	Forest and woodland dominated by blue gum or black gum within 10 km of the coast, including slopes and ridges.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

CASTRA 4242

Known Localities of Species	Tenure	Map Grid	Locality	Notes
freshwater snails *(Beddomeia averni)*	Private	244 289	Stream 3 km by road east of Preston	type locality
freshwater snails *(Beddomeia hallae)*	Private	202 218	Buttons Rivulet on Sth Preston Road	type locality
freshwater snails *(Beddomeia inflata, B. fallax)*	Private	272 242	Heathcote Creek on Castra Road	type localities
freshwater snails *(Beddomeia lodderae)*	Private		Castra Rivulet & creek near Castra Road	
freshwater snails *(Beddomeia wilmotensis)*	Private	297 220	Gully 400 m north of Spellman Bridge	type locality
eagles (wedge-tailed)	SF	Confidential	Lake Paloona	nest

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes, below about 400 m altitude, including Lake Barrington.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

CATHEDRAL 4236

Known Localities of Species	Tenure	Map Grid	Locality	Notes
pencil pine moth	FReserve	207 644	Mt Doris	
eagles (wedge-tailed)	SF	Confidential	Maggs Mountain	nest
giant freshwater lobster			Mersey River and tributaries	key catchm't

Species May Occur in Suitable Habitat	Habitat to Survey
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
pencil pine moth	Pencil pine forest.
ptunarra brown butterfly	Native grassland or woodland with more than 15% cover of tussock grass.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

CAWOOD 4830

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
giant freshwater lobster	Clyde River - translocated population
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

CETHANA 4240

Known Localities of Species	Tenure	Map Grid	Locality	Notes
ptunarra brown butterfly	Private	224 017	Bull Creek	colony

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes, below about 400 m alt., esp. the Mersey River.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
ptunarra brown butterfly	Native grassland or woodland with more than 15% cover of tussock grass.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

CHARTER 3839

Known Localities of Species	Tenure	Map Grid	Locality	Notes
ptunarra brown butterfly	Private	865 995	Hatfield Road	colony
ptunarra brown butterfly	Private	890 000	Romney Marsh	colony

Species May Occur in Suitable Habitat	Habitat to Survey
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
ptunarra brown butterfly	Native grassland or woodland with more than 15% cover of tussock grass.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

CLEVELAND 5237

Known Localities of Species	Tenure	Map Grid	Locality	Notes
eagles (wedge-tailed)	Private	Confidential	Near Bostock Hill, Cleveland	nest near

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

CLOUDY 5118

Known Localities of Species	Tenure	Map Grid	Locality	Notes
coastal birds (hooded plover)	FReserve	206 883	Cloudy Bay Beach - survey site	breeding site
coastal birds (hooded plover)	FReserve	130 880	Wares Point - survey site	breeding site
coastal birds (short-tailed shearwater)	Crown	237 817	Big Friars, Tasman Head	colony
coastal birds (short-tailed shearwater)	Crown	241 804	Little Friars	colony
coastal birds (short-tailed shearwater)	Crown	237 805	The Friars	colony

coastal birds (short-tailed shearwater)	Reserve	188 899	Whalebone Point	colony
coastal birds (short-tailed shearwater)	FReserve	204 890	Cloudy Bay, Bruny Island	colony
coastal birds (short-tailed shearwater)	Crown	107 839	Courts Island, off Bruny Island	colony
orange-bellied parrot	Crown	107 839	Courts Island, off Bruny Island	historical '81
seals (Australian fur seal)	Crown	235 808	The Friars, off Bruny Island	haul-out site
marine turtles (leatherback)	Crown		Entangled off Cape Bruny	1968 record

Species May Occur in Suitable Habitat	Habitat to Survey
broad-striped ghost moth	Bruny Island heathland and sedgeland.
forty-spotted pardalote	Grassy dry forest and woodland with white gum (Eucalyptus viminalis).
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
southeast seastars (live-bearing seastar)	Intertidal rocky areas, on sandstone.
coastal birds (hooded plover, little penguin)	Sandy ocean beaches and dunes.
swift parrot	Forest and woodland dominated by blue gum or black gum within 10 km of the coast, including slopes and ridges.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

CLUAN 4839

Known Localities of Species	Tenure	Map Grid	Locality	Notes
green and gold frog	Private	862 946	Cluan	
green and gold frog	Private	940 962	Whitemore	
eagles (wedge-tailed)	Private	Confidential	Northwest of Cluan Tiers	nest
eagles (wedge-tailed)	Private	Confidential	Near Whitemores Creek	nest (Boral)

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

CLUNY 4831

Known Localities of Species	Tenure	Map Grid	Locality	Notes
ptunarra brown butterfly	Private	961 172	Jug Gully, adjacent to highway	colony
ptunarra brown butterfly	Private	980 133	Blair Hill	colony
eagles (wedge-tailed)	Private	Confidential	Near Devils Back	nest
eagles (wedge-tailed)	Private	Confidential	Blue Hill area	nest
eagles (wedge-tailed)	Private	Confidential	Grubbed Marsh Creek area	nest near

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
ptunarra brown butterfly	Native grassland or woodland with more than 15% cover of tussock grass.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.

eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

COLEBROOK 5229

Known Localities of Species	Tenure	Map Grid	Locality	Notes
eagles (wedge-tailed)	Private	Confidential	Near Yarlington Tier	nest
eagles (wedge-tailed)	Private	Confidential	Near Yarlington Tier	nest

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

COLES BAY 6033

Known Localities of Species	Tenure	Map Grid	Locality	Notes
New Holland mouse	Reserve	360 370	Coles Bay Coastal Reserve	colony
New Holland mouse	Reserve	367 369	Coles Bay Coastal Reserve	colony
New Holland mouse	Reserve	372 370	Coles Bay Coastal Reserve	colony
New Holland mouse	Reserve	387 368	Coles Bay Coastal Reserve	colony
green and gold frog	FReserve	065 302	Hazards Lagoon, Freycinet Nat. Park	
coastal birds (fairy tern)	Reserve	072 353	Coles Bay, Richardson Beach	breeding site
coastal birds (hooded plover)	Reserve	018 383	Nine Mile Beach (Dolphin Sands)	breeding site
coastal birds (short-tailed shearwater)	Crown	119 359	The Nuggets	colony
coastal birds (short-tailed shearwater)	Private	048 355	Picnic Island	colony
eagles (white-bellied sea-eagle)	Private	Confidential	Near Hepburn Point	nest
eagles (white-bellied sea-eagle)	FReserve	Confidential	Near Hawksnest Cove, Freycinet N. Pk	nest
eagles (white-bellied sea-eagle)	FReserve	Confidential	Near Sleepy Bay, Freycinet National Park	nest
eagles (white-bellied sea-eagle)	FReserve	Confidential	Near Little Bluestone Bay, Freycinet Nat. Pk	nest

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
chaostola skipper	Dry open forest with *Gahnia radula* at low altitude.
forty-spotted pardalote	Grassy dry forest and woodland with white gum within 3 km of the coast.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
New Holland mouse	Dry coastal heathland and open heathy forest.
coastal birds (fairy tern)	Sand or shingle beaches, unvegetated sites near estuaries and nearby lakes, and estuarine and offshore islands.
coastal birds (hooded plover, little penguin)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

COLLINGWOOD 4033

Species May Occur in Suitable Habitat	Habitat to Survey
pencil pine moth	Pencil pine forest.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

COLLINSVALE 5025

Known Localities of Species	Tenure	Map Grid	Locality	Notes
eastern barred bandicoot	P / Crown	158 569	Collinsvale township and surrounds	hot spot
swift parrot	Private	169 584	2 km northeast of Collinsvale	foraging area
swift parrot	Private	192 598	Gullies from Berriedale to Collinsvale	foraging area
eagles (wedge-tailed)	FReserve	Confidential	Collins Cap area	nest
grey goshawk	Priv/FRes	Confidential	Collinsvale to Mt Wellington slopes	nesting sites
southeast stag beetles (Mt Mangana)	FReserve	129 548	Myrtle Forest Road	
Mt Wellington land snail	FReserve	192 513	'The Chalet', Mt Wellington	
caddisfly (*Hydrobiosella armata*)	Reserve	191 505	Mt Wellington Scenic Lookout	

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
southeast stag beetles (Mt Mangana)	Wet forest containing decaying logs.
Mt Wellington land snail	Subalpine wet eucalypt forest.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
swift parrot	Forest and woodland dominated by blue gum or black gum within 10 km of the coast, including slopes and ridges.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

COLONELS 5633

Known Localities of Species	Tenure	Map Grid	Locality	Notes
ptunarra brown butterfly	Priv / Res	694 368	Evansville Flats, near Game Park	colony
ptunarra brown butterfly	Reserve	695 355	Long Marsh	colony
Swan galaxias	SF	Confidential	Headwaters, Swan and Macquarie Rivers	natural pop.
Swan galaxias	Priv / SF	Confidential	Headwaters, Swan and Macquarie Rivers	natural pop.
Swan galaxias	Private	Confidential	Headwaters, Swan and Macquarie Rivers	Jackson '99
eagles (wedge-tailed)	Private	Confidential	Near Little Blue Tier	nest near
eagles (wedge-tailed)	SF	Confidential	Near Snaky Creek	nest
eagles (wedge-tailed)	Private	Confidential	Near Bens Hill	nest
eagles (wedge-tailed)	SF	Confidential	Near Eaglehawk Hill	nest
eagles (wedge-tailed)	SF	Confidential	Near Eaglehawk Hill	nest
eagles (wedge-tailed)	SF	Confidential	Northwest Kioka Hill	nest (Craven)

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
ptunarra brown butterfly	Native grassland or woodland with more than 15% cover of tussock grass.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
Swan galaxias	In catchment upstream of map sites.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

COMMUNICATION 5423

Known Localities of Species	Tenure	Map Grid	Locality	Notes
coastal birds (hooded plover)	Priv / Res	405 370	Calverts Lagoon - survey site	breeding site
coastal birds (hooded plover)	Reserve	553 397	Sloping Main Beach, near creek	breeding site

coastal birds (hooded plover)	Reserve	406 370	Calverts Lagoon - survey site	breeding site
coastal birds (migratory waders)	Reserve	404 365	Calverts Lagoon - survey site	foraging site
coastal birds (migratory waders)	Priv / Res	405 370	Calverts Lagoon	foraging site
coastal birds (short-tailed shearwater)	Private		Watsons Bluff	colony
coastal birds (short-tailed shearwater)	Crown	532 396	Black Jack Point, Tasman Peninsula	colony
swift parrot	Private	549 319	2 km north of Roaring Beach	nest
eagles (wedge-tailed)	Private	Confidential	Black Jack Hills on Tasman Peninsula	nest
eagles (wedge-tailed)	Private	Confidential	Black Jack Hills on Tasman Peninsula	nest
eagles (wedge-tailed)	Private	Confidential	Mount Communication	nest
eagles (wedge-tailed)	Private	Confidential	Mount Communication	nest
eagles (white-bellied sea-eagle)	Private	Confidential	Black Jack Hills area	nest
eagles (white-bellied sea-eagle)	Private	Confidential	Black Jack area on Tasman Peninsula	nest

Species May Occur in Suitable Habitat	**Habitat to Survey**
Australian grayling	Lower and middle reaches of coastal rivers.
southeast stag beetles (broad-toothed)	Dry or wet forest with rotting logs and litter on the ground.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
forty-spotted pardalote	Grassy dry forest and woodland with white gum within 3 km of the coast.
great crested grebe	Lakes, rivers and estuaries.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
southeast seastars (live-bearing seastar)	Intertidal rocky areas, on sandstone.
southeast stag beetles (Mt Mangana)	Wet forest containing decaying logs.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
spotted handfish	Derwent River estuary and adjoining bays and channels.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
swift parrot	Forest and woodland dominated by blue gum or black gum within 10 km of the coast, including slopes and ridges.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

CONARA 5236

Known Localities of Species	**Tenure**	**Map Grid**	**Locality**	**Notes**
caddisfly (*Ecnomina vega*)	Private	323 602	Macquarie R., west of Campbell Town	type locality

Species May Occur in Suitable Habitat	**Habitat to Survey**
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

COX 4218

Known Localities of Species	**Tenure**	**Map Grid**	**Locality**	**Notes**
orange-bellied parrot	FReserve	Confidential	Near Mt Melaleuca	nest site
orange-bellied parrot	FReserve	Confidential	Half Woody Hill and surrounding forest	nest sites
orange-bellied parrot	FReserve	Confidential	Pandora Hill and surrounding forest	nest sites

orange-bellied parrot	FReserve	Confidential	North of Freyney Lagoon	historical '75
orange-bellied parrot	FReserve	Confidential	Cox Bight	historical '77
orange-bellied parrot	FReserve	Confidential	Window Pane Bay	historical '81
coastal birds (hooded plover)	FReserve	367 840	Cox Bight Beach	breeding site
coastal birds (short-tailed shearwater)	FReserve		Smoke Signal Hill islet	colony
coastal birds (short-tailed shearwater)	FReserve		Island Bay #1, #2, #3, #4 and #5	5 colonies

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
orange-bellied parrot	Breeding and migration feeding habitat: buttongrass plains with eucalypt patches, saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

CRADLE 4038

Known Localities of Species	Tenure	Map Grid	Locality	Notes
ptunarra brown butterfly	FReserve	121 896	Cradle Valley	colony

Species May Occur in Suitable Habitat	Habitat to Survey
pencil pine moth	Pencil pine forest.
ptunarra brown butterfly	Native grassland or woodland with more than 15% cover of tussock grass.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

CRANBROOK 5834

Known Localities of Species	Tenure	Map Grid	Locality	Notes
green and gold frog	Private	977 435	Big Punchbowl	
coastal birds (fairy tern)	Crown	920 408	Swan River	breeding site
coastal birds (migratory waders)	Reserve	956 454	Moulting Lagoon shore and mudflats	foraging site
eagles (wedge-tailed)	Crown	Confidential	Near Mount Peter	nest near
eagles (wedge-tailed)	Private	Confidential	Near Gravelly Hill	nest near
eagles (wedge-tailed)	Private	Confidential	Along Brushy River	nest
eagles (wedge-tailed)	Private	Confidential	Near Cranbrook, Cygnet River	nest
eagles (white-bellied sea-eagle)	FReserve	Confidential	Near Lovetts Hill	nest
eagles (white-bellied sea-eagle)	Private	Confidential	Near Moulting Lagoon	nest
eagles (white-bellied sea-eagle)	FReserve	Confidential	Around Moulting Lagoon	nest

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
forty-spotted pardalote	Grassy dry forest and woodland with white gum within 3 km of the coast.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.

swift parrot	Forest and woodland dominated by blue gum or black gum within 10 km of the coast, including slopes and ridges.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

CREMORNE 5424

Known Localities of Species	Tenure	Map Grid	Locality	Notes
forty-spotted pardalote	FReserve	547 446	Behind Lagoon Beach, Lime Bay N. R.	old colony
forty-spotted pardalote	FReserve	566 450	Black Rock Hill, Lime Bay Nat. Res.	old colony
forty-spotted pardalote	FReserve	583 406	Coal Mine Hill, Lime Bay Nat. Res.	old colony
forty-spotted pardalote	FReserve	587 404	Plunkett Point, Lime Bay Nat. Res.	old colony
coastal birds (hooded plover)	FReserve	593 425	Monk Bay	breeding site
coastal birds (hooded plover)	Reserve		Sloping Main - along beach	breeding site
coastal birds (migratory waders)	Reserve	419 419	Pipe Clay Lagoon - survey site	foraging site
coastal birds (migratory waders)	Reserve	408 465	Clear Lagoon - survey site	foraging site
coastal birds (short-tailed shearwater)	Reserve	447 403	Clifton Bluff at Cape Deslacs	colony
coastal birds (short-tailed shearwater)	P / Crown	436 434	Coastline around Cremorne	colony
coastal birds (short-tailed shearwater)	FReserve	524 451	Sloping Island	colony
coastal birds (little penguin)	Reserve	450 405	Cape Deslacs, east Clifton Beach	colony
swift parrot	Private	407 400	1.5 km west of Clifton Beach	nest
eagles (white-bellied sea-eagle)	FReserve	Confidential	Near Green Head	nest
marine turtles (leatherback)	Crown		Swimming near Frederick Henry Bay	1975 record
saltmarsh moths (saltmarsh looper)	Council	404 479	Lauderdale tip - extension area	1994 record
saltmarsh moths (chevron looper)	Private	433 435	Cremorne, Pipe Clay Lagoon Road	1994 record

Species May Occur in Suitable Habitat	Habitat to Survey
southeast stag beetles (broad-toothed)	Dry or wet forest with rotting logs and litter on the ground.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
forty-spotted pardalote	Grassy dry forest and woodland with white gum within 3 km of the coast. Lime Bay area requires survey.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
southeast seastars (live-bearing seastar)	Intertidal rocky areas, on sandstone.
saltmarsh moths (chevron looper, saltmarsh looper)	Saltmarsh vegetation in dry areas.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
spotted handfish	Derwent River estuary and adjoining bays and channels.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
swift parrot	Forest and woodland dominated by blue gum or black gum within 10 km of the coast, including slopes and ridges.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.

CRESSY 5038

Known Localities of Species	Tenure	Map Grid	Locality	Notes
eagles (wedge-tailed)	Private	Confidential	Near the Maitland Property	nest (22.1.99)

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.

green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

CROSSING 4222

Species May Occur in Suitable Habitat	Habitat to Survey
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

CURRIE 2257

Known Localities of Species	Tenure	Map Grid	Locality	Notes
orange-bellied parrot	Crown	303 743	Currie Golf Course	migrating '89
coastal birds (hooded plover)	Reserve		Coastline from Currie to Porky	breeding sites
coastal birds (hooded plover)	Reserve		Ettrick River to Currie	breeding sites
coastal birds (hooded plover)	Reserve	324 724	British Admiral Beach	breeding site
coastal birds (little penguin)	Reserve	302 755	Currie Harbour	colony
coastal birds (short-tailed shearwater)	Reserve	329 712	Badger Box, King Island	colony
marine turtles (leatherback)	Crown		Entangled British Admiralty Reef	1951 record
marine turtles (leatherback)	Crown		Entangled southwest of Currie	1977 record
marine turtles (leatherback)	Crown		Entangled, southwest of Currie	1982 record
marine turtles (leatherback)	Crown		Entangled, 1.5 nm west Currie	1985 record
marine turtles (leatherback)	Com'w		Swimming 20 to 25 nm west of Currie	1986 to 1996
marine turtles (leatherback)	Com'w		Entangled 20 to 25 nm west of Currie	1986 to 1996
marine turtles (leatherback)	Crown		Entangled, west British Admiralty Reef	1992 record
marine turtles (leatherback)	Crown		Entangled, back British Admiralty Reef	1994 record

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
King Island brown thornbill	Dry forest, woodland and scrubland.
orange-bellied parrot	Migration feeding habitat: saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast, including vegetated offshore islands.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.

CUVIER 3051

Known Localities of Species	Tenure	Map Grid	Locality	Notes
coastal birds (fairy tern)	Priv/FRes	173 200	Three Hummock and Hunter Island	breeding sites
coastal birds (little penguin)	Reserve	058 131	Wallaby Point and coast to the south	colony
coastal birds (short-tailed shearwater)	FReserve	007 274	Black Pyramid, SW of Albatross Island	colony
eagles (white-bellied sea-eagle)	FReserve	Confidential	Near Shepherds Bay	nest
seals (Australian fur seal)	FReserve	007 274	Black Pyramid, SW of Albatross Island	haul-out site

Species May Occur in Suitable Habitat	Habitat to Survey
keeled snail	Wet eucalypt forest on Three Hummock Island.
orange-bellied parrot	Migration feeding habitat: saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast, including vegetated offshore islands.
coastal birds (fairy tern)	Sand or shingle beaches, unvegetated sites near estuaries and nearby lakes, and estuarine and offshore islands.

coastal birds (hooded plover)	Sandy ocean beaches and dunes.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

CYGNET 5022

Known Localities of Species	Tenure	Map Grid	Locality	Notes
southeast seastars (live-bearing seastar)	Crown	196 213	Peppermint Bay, Woodbridge	colony
southeast stag beetles (Mt Mangana)	Priv / Res	174 297	Snug Falls	
swift parrot	Private	113 210	Nicholls Rivulet area	foraging area
swift parrot	Private	124 215	Nicholls Rivulet area	foraging area
swift parrot	Private	190 272	Oyster Cove area	foraging area
swift parrot	Private	193 210	Woodbridge area	foraging area
swift parrot	Priv / Res	193 215	Woodbridge area	foraging area
eagles (wedge-tailed)	Private	Confidential	Near Woodbridge Hill	nest

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
forty-spotted pardalote	Grassy dry forest and woodland with white gum within 3 km of the coast.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially with blackwoods.
southeast seastars (live-bearing seastar)	Intertidal rocky areas, on sandstone.
southeast stag beetles (Mt Mangana)	Wet forest containing decaying logs.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
swift parrot	Forest and woodland dominated by blue gum or black gum within 10 km of the coast, including slopes and ridges.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

D'AGUILAR 3828

Known Localities of Species	Tenure	Map Grid	Locality	Notes
Australian grayling	FReserve	948 838	Gordon River near the Big Eddy	
Australian grayling	FReserve	965 838	Gordon-Franklin River junction	
cave ecosystem (little six-eyed spider)	FReserve	Confidential	Near Gordon-Franklin River junction	on surface

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

D'ARCYS 4432

Known Localities of Species	Tenure	Map Grid	Locality	Notes
Clarence galaxias	SF	Confidential	Wildlife Priority Area, Wentworth Hills	WPA
pencil pine moth	SF	442 268	Wentworth Hills	colony
eagles (wedge-tailed)	SF	Confidential	Near Laughing Jack Lagoon	nest near
eagles (wedge-tailed)	SF	Confidential	Near D'Arcys Bluff	nest
eagles (wedge-tailed)	Private	Confidential	Southeast of Clarence Weir	nest

Species May Occur in Suitable Habitat	Habitat to Survey
Clarence galaxias	Streams, marshes and lakes without brown trout in the Clarence and Nive catchments.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
pencil pine moth	Pencil pine forest.
ptunarra brown butterfly	Native grassland or woodland with more than 15% cover of tussock grass.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

DARLINGTON 5828

Known Localities of Species	Tenure	Map Grid	Locality	Notes
southeast stag beetles (broad-toothed)	FReserve	874 818	Monah Hill	
southeast stag beetles (broad-toothed)	FReserve	874 828	Counsel Creek	
southeast stag beetles (broad-toothed)	FReserve	879 805	Monah Hill	
southeast stag beetles (broad-toothed)	FReserve	887 842	Bernacchis Creek	
southeast stag beetles (broad-toothed)	FReserve	892 839	Bernacchis Creek above reservoir	
southeast stag beetles (broad-toothed)	FReserve	905 840	Track to Bishop and Clerk	
forty-spotted pardalote	FReserve	838 867	1 km northeast of Howells Point, Maria	colony M 8
forty-spotted pardalote	FReserve	876 848	Surrounding Darlington settlement	colony M 1
forty-spotted pardalote	FReserve	890 840	Along Bernacchis Creek, Maria Island	colony M 2
forty-spotted pardalote	FReserve	877 841	Westerly below The Club, Maria Island	colony M 3
forty-spotted pardalote	FReserve	882 838	Easterly below The Club, Maria Island	colony M 4
forty-spotted pardalote	FReserve	890 832	Surrounding Toarra Hill, Maria Island	colony M 6
forty-spotted pardalote	FReserve	875 805	Extensively through Mona Hill, M. I.	colony M 7
forty-spotted pardalote	FReserve	860 825	West below Marra Hill, Maria Island	colony M 9
forty-spotted pardalote	FReserve	860 820	Southwest below Marra Hill, M. Island	colony M 10
forty-spotted pardalote	FReserve	909 803	Track below Mt Maria, Maria Island	colony M 11
forty-spotted pardalote	FReserve	898 798	Top of Robinsons Creek, Maria Island	colony M 12
coastal birds (hooded plover)	FReserve	850 809	Four Mile Creek - survey site	breeding site
coastal birds (hooded plover)	FReserve	873 854	Darlington Bay - survey site	breeding site
coastal birds (hooded plover)	FReserve	864 839	Hopgrounds - survey site	breeding site
coastal birds (little penguin)	FReserve	879 862	Cape Boullanger, Maria Island	colony
coastal birds (short-tailed shearwater)	FReserve	878 870	Ile du Nord, north of Maria Island	colony
swift parrot	FReserve	850 809	Four Mile Beach	foraging area
swift parrot	FReserve	861 832	0.3 km east of Howells Point	foraging area
swift parrot	FReserve	863 826	1 km west of Marra Hill	foraging area
swift parrot	FReserve	864 833	0.5 km east of Howells Point	foraging area
swift parrot	FReserve	866 836	Counsel Creek	foraging area
swift parrot	FReserve	869 845	0.5 km southwest of Darlington	foraging area
swift parrot	FReserve	872 805	Monah Hill	foraging area
swift parrot	FReserve	876 820	0.5 km east of Marra Hill	foraging area
swift parrot	FReserve	876 850	Darlington	foraging area
swift parrot	FReserve	887 816	1.5 km northeast of Monah Hill	foraging area
swift parrot	FReserve	891 847	Skipping Ridge	foraging area
swift parrot	FReserve	892 814	1.5 km northwest of Little Peak	foraging area
swift parrot	FReserve	894 847	Skipping Ridge	foraging area
swift parrot	FReserve	900 839	Skipping Ridge	nest
eagles (white-bellied sea-eagle)	FReserve	Confidential	Near Coxswain Creek	nest
eagles (white-bellied sea-eagle)	FReserve	Confidential	Near Howells Point	nest
eagles (white-bellied sea-eagle)	FReserve	Confidential	Near Bishop and Clerk	nest

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
swift parrot	Forest and woodland dominated by blue gum or black gum within 10 km of the coast, including slopes and ridges.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

DARWIN 3832

Species May Occur in Suitable Habitat	Habitat to Survey
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

DAVEY 4022

Known Localities of Species	Tenure	Map Grid	Locality	Notes
marine turtles (leatherback)	Crown		Swimming 2 nm off East Pyramid	1980 record

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
orange-bellied parrot	Breeding and migration feeding habitat: buttongrass plains with eucalypt forest patches, saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

DE WITT 4417

Known Localities of Species	Tenure	Map Grid	Locality	Notes
seals (New Zealand fur seal, elephant seal)	Com'w	418 664	Rockshelves around Maatsuyker Island	breeding sites
seals (New Zealand fur seal)	FReserve		Little Witch Island	breeding site
seals (New Zealand fur seal)	FReserve		Walker Island	breeding site
seals (Australian fur seals)	Com'w		The Needles, off Maatsuyker Island	haul-out site
seabird (soft-plumaged petrel)	Com'w		Suspected on Maatsuyker Island	not proven
coastal birds (little penguin)	Com'w	418 664	Peaty slopes on Maatsuyker Island	colony
coastal birds (little penguin, s-t shearwater)	FReserve	480 795	Louisa Island	colonies
coastal birds (short-tailed shearwater)	FReserve		East of Lousia Island	colony
coastal birds (short-tailed shearwater)	FReserve		De Witt Island	colony
coastal birds (short-tailed shearwater)	FReserve		Flat Witch Island	colony
coastal birds (short-tailed shearwater)	FReserve		Flat Top Island	colony
coastal birds (short-tailed shearwater)	FReserve		Round Top Island	colony
coastal birds (short-tailed shearwater)	FReserve		Walker Island	colony
coastal birds (short-tailed shearwater)	FReserve		Needle Rocks	colony
coastal birds (short-tailed shearwater, sooty shearwater)	Com'w	418 664	Peaty slopes on Maatsuyker Island	colonies
eagles (wedge-tailed)	FReserve	Confidential	De Witt Island	nest near
eagles (white-bellied sea-eagle)	FReserve	Confidential	Flat Witch (Flat Top) Island	nest
eagles (white-bellied sea-eagle)	FReserve	Confidential	Near Baldy Point	nest
marine turtles (leatherback)	Crown	417 664	Entangled off Maatsuyker Island	1991 record

Species May Occur in Suitable Habitat	Habitat to Survey
orange-bellied parrot	Breeding and migration feeding habitat: buttongrass plains with eucalypt forest patches, saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

DEE 4631

Known Localities of Species	Tenure	Map Grid	Locality	Notes
eagles (wedge-tailed)	SF	Confidential	Near Father of Marshes	nest
eagles (wedge-tailed)	SF	Confidential	South of Dee Lagoon on River Dee	nest

Species May Occur in Suitable Habitat	Habitat to Survey
ptunarra brown butterfly	Native grassland or woodland with more than 15% cover of tussock grass.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

DELMONT 5037

Known Localities of Species	Tenure	Map Grid	Locality	Notes
freshwater snails (*Beddomeia kershawi*)	Private	080 741	Lake River at Macquarie settlement	

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

DELORAINE 4640

Known Localities of Species	Tenure	Map Grid	Locality	Notes
green and gold frog	Private	632 090	Elizabeth Town	key area
green and gold frog	Private	638 086	Elizabeth Town	key area
green and gold frog	Private	710 028	Deloraine and surrounds	key area
eagles (wedge-tailed)	SF	Confidential	Near Weetah	nest
eagles (wedge-tailed)	Private	Confidential	South of Reedy Marsh	nest
eagles (wedge-tailed)	Private	Confidential	North of Exton	nest

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes, below about 400 m alt., esp. the Meander River
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.

grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

DEMPSTER 3243

Known Localities of Species	Tenure	Map Grid	Locality	Notes
giant freshwater lobster	SF / Res	218 382	Frankland River	
freshwater snails *(Beddomeia franklandensis)*	SF	250 311	Runoff from Frankland River at Balfour	type locality
eagles (wedge-tailed)	SF	Confidential	Near Dempster Plains	nest

Species May Occur in Suitable Habitat	Habitat to Survey
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes, and Arthur River system, below about 400 m alt.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
velvet worms (northwest)	Wet forest with rotting logs and woody ground litter.
cave-dwelling invertebrates	Sinkholes and karst in the Dempster area.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

DENNISTOUN 5031

Known Localities of Species	Tenure	Map Grid	Locality	Notes
giant freshwater lobster	Private	017 170	Clyde River near Halfmoon Marsh	translocated
eagles (wedge-tailed)	Private	Confidential	Near Twelve O'Clock Hill	nest
eagles (wedge-tailed)	Private	Confidential	Near Woods Quoin	nest
eagles (wedge-tailed)	Private	Confidential	Near Shiners Hill	nest

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
giant freshwater lobster	Clyde River - translocated population
ptunarra brown butterfly	Native grassland or woodland with more than 15% cover of tussock grass.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

DERBY 5644

Known Localities of Species	Tenure	Map Grid	Locality	Notes
freshwater snails *(Beddomeia fromensis)*	SF	758 456	Frome R. tributary along Greenstone Rd	type locality
northeast forest snail	SF	680 435	Cascade River (north)	
northeast forest snail	SF	692 401	Cascade River (south)	
northeast forest snail	SF	728 411	Main Creek, Mutual Road	
northeast forest snail	SF	770 430	Frome Road, Jubilee Hill	
northeast forest snail	SF	773 407	Emu Road	
northeast forest snail	SF	773 407	Sante Fe Creek	
northeast stag beetles (Simsons)	SF	732 412	Weldborough area	

northeast stag beetles (Simsons)	SF	733 402	Weldborough area	
northeast stag beetles (Simsons)	SF	733 419	Weldborough area	
northeast stag beetles (Simsons)	SF	737 404	Weldborough area	
northeast stag beetles (Simsons)	SF	741 419	Weldborough area	
northeast stag beetles (Simsons)	SF	742 407	Weldborough area	
northeast stag beetles (Simsons)	SF	742 414	Weldborough area	
northeast stag beetles (Simsons)	SF	754 425	Weld River	
northeast stag beetles (Simsons)	SF	781 446	Frome Dam	
eagles (wedge-tailed)	SF	Confidential	Near Branxholm	nest
eagles (wedge-tailed)	SF	Confidential	East of Warrentinna	nest
eagles (wedge-tailed)	SF	Confidential	Near Main Creek	nest
eagles (wedge-tailed)	SF	Confidential	Near Burnies Creek	nest

Species May Occur in Suitable Habitat	**Habitat to Survey**
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes, below 400 m alt., esp. the Ringarooma River.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
northeast forest snail	Rainforest, mixed forest or wet forest containing rainforest elements.
northeast stag beetles (3 species)	Wet forest with a well-developed litter layer on well-drained soils.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

DEVONPORT 4444

Known Localities of Species	**Tenure**	**Map Grid**	**Locality**	**Notes**
green and gold frog	Private	461 411	Devonport	
green and gold frog	Crown	597 443	West of Hawley Beach	
giant freshwater lobster	Crown		Don River near Devonport	
giant freshwater lobster	Crown		Mersey River and tributaries	key catchm't
coastal birds (little penguin, s-t shearwater)	Res/Crwn	439 431	Along Don Heads west to Lillico Beach	colonies

Species May Occur in Suitable Habitat	**Habitat to Survey**
Australian grayling	Lower and middle reaches of coastal rivers.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes, below about 400 m alt., esp. the Mersey River.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

DIAMOND 5436

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

DILSTON 5042

Known Localities of Species	Tenure	Map Grid	Locality	Notes
great crested grebe	Reserve	065 235	Tamar River and estuary	foraging site
eagles (wedge-tailed)	SF	Confidential	West of Underwood	nest near
eagles (wedge-tailed)	Private	Confidential	South of Underwood	nest
eagles (wedge-tailed)	SF	Confidential	Prossers Forest - 3 close nest sites	nests near
green and gold frog	Private	032 205	Legana	
green and gold frog	Private	168 284	Underwood	
burrowing crayfish (Mt Arthur)	Private	149 288	2 km west of Underwood	
burrowing crayfish (Mt Arthur)	Private	166 280	Creek at Underwood, south of Lilydale	
burrowing crayfish (Mt Arthur)	Private	171 286	Underwood	
burrowing crayfish (Mt Arthur)	SF	175 263	2 km south of Underwood	
burrowing crayfish (Mt Arthur)	FReserve	175 266	2 km south of Underwood	
burrowing crayfish (Mt Arthur)	Private	178 256	3 km south of Underwood	
burrowing crayfish (Mt Arthur)	SF	184 245	4 km southeast Underwood	
burrowing crayfish (Mt Arthur)	Private	186 299	3 km south of Lilydale	type locality
burrowing crayfish (Mt Arthur)	SF	191 251	4 km southeast of Underwood	
burrowing crayfish (Mt Arthur)	SF	192 250	3 km southeast of Underwood	
burrowing crayfish (Mt Arthur)	Private	194 297	3 km southeast of Lilydale	
burrowing crayfish (Mt Arthur)	Private	196 293	4 km southeast of Lilydale	
burrowing crayfish (Mt Arthur)	SF	198 246	4 km southeast of Underwood	
giant freshwater lobster	Private		Underwood and Pipers River	

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes, below about 400 m alt., esp. the Pipers River.
great crested grebe	Lakes, rivers and estuaries.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
'Skemps' snail	Wet sclerophyll gullies with creek lines.
burrowing crayfish (Mt Arthur)	Moist seeps, flat swampy areas and stream banks, where soil has moderate to high clay content.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

DOBSON 4627

Known Localities of Species	Tenure	Map Grid	Locality	Notes
cave ecosystem *(Goedetrechus parallelus)*		Confidential	Junee, Florentine area	
spiders (Lake Fenton trapdoor)	FReserve	693 748	Below Lake Fenton, Mt Field Nat. Park	type locality
spiders (Lake Fenton trapdoor)	FReserve	700 745	Below Lake Fenton, Mt Field Nat. Park	
pencil pine moth	FReserve	644 753	Johnston Tarn, Mt Field National Park	

pencil pine moth	FReserve	661 761	Lake Seal, Mt Field National Park	
pencil pine moth	FReserve	665 755	Lake Seal, Mt Field National Park	
caddisfly (*Diplectrona castanea*)	FReserve		Rivers and streams in the Mt Field area	now extinct
eagles (wedge-tailed)	Private	Confidential	Mt Field East	nest

Species May Occur in Suitable Habitat	**Habitat to Survey**
cave-dwelling invertebrates	Junee, Florentine caves and other karst.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
spiders (Lake Fenton trapdoor)	Deep moss in well-drained high altitude areas.
pencil pine moth	Pencil pine forest.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

DOME 4035

Species May Occur in Suitable Habitat	**Habitat to Survey**
pencil pine moth	Pencil pine forest.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

DONALDSON 3441

Known Localities of Species	**Tenure**	**Map Grid**	**Locality**	**Notes**
eagles (wedge-tailed)	Crown	Confidential	Northeast of Savage River Mine	nest

Species May Occur in Suitable Habitat	**Habitat to Survey**
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

DOVER 5020

Known Localities of Species	**Tenure**	**Map Grid**	**Locality**	**Notes**
forty-spotted pardalote	Private	188 013	Enclosing Pybus Hill, South Bruny Is.	colony B 61
forty-spotted pardalote	Private	189 016	Enclosing Pybus Hill, South Bruny Is.	colony B 61
forty-spotted pardalote	Private	191 015	Enclosing Pybus Hill, South Bruny Is.	colony B 61
coastal birds (hooded plover)	Reserve	073 067	Roaring Bay Beach near Dover	breeding site
coastal birds (little penguin, s-t shearwater)	Private	115 067	Huon Island	colonies
swift parrot	Private	060 053	1.5 km east of Torbul Hill	foraging area
swift parrot	Priv / Res	065 066	Roaring Bay	foraging area
swift parrot	Priv / Res	067 070	Roaring Bay	foraging area
swift parrot	Priv / Res	071 069	Roaring Bay Beach area	foraging area
swift parrot	Private	074 079	Surveyors Bay	foraging area
swift parrot	Private	123 085	Verona Sands	foraging area
swift parrot	Priv / Res	156 082	2 km east of Ninepin Point	foraging area
swift parrot	Private	189 006	1 km south of Pybus Hill	foraging area
swift parrot	Private	194 099	Gordon	foraging area
swift parrot	Private	195 099	Gordon	foraging area
swift parrot	SF	200 003	Southeast of Pybus Hill	nest
eagles (white-bellied sea-eagle)	Reserve	Confidential	Near Esperance Point	nest

eagles (white-bellied sea-eagle)	Private	Confidential	Near Blubber Head	nest
eagles (white-bellied sea-eagle)	Private	Confidential	Near Garden Island	nest

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
forty-spotted pardalote	Grassy dry forest and woodland with white gum within 3 km of the coast.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
southeast seastars (live-bearing seastar)	Intertidal rocky areas, on sandstone.
southeast stag beetles (Mt Mangana)	Wet forest containing decaying logs.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
swift parrot	Forest and woodland dominated by blue gum or black gum within 10 km of the coast, including slopes and ridges.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

DU CANE 4235

Species May Occur in Suitable Habitat	Habitat to Survey
pencil pine moth	Pencil pine forest.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

DUBLIN TOWN 5840

Known Localities of Species	Tenure	Map Grid	Locality	Notes
velvet worms (blind)	Private	965 029	Dublin Town	
velvet worms (blind)	Private	965 030	Catos Creek	
velvet worms (blind)	SF	977 011	South Sister	
velvet worms (blind)	SF	978 011	South Sister	
velvet worms (blind)	SF	979 019	North Sister	
velvet worms (blind)	Private	988 011	Yorkys Creek	
velvet worms (giant)	SF	875 015	Gleadow Creek	
velvet worms (giant)	SF	951 083	Catos Creek	
velvet worms (giant)	Private	964 029	Dublin Town	
velvet worms (giant)	Private	966 031	Catos Creek	
velvet worms (giant)	Private	967 032	Catos Creek	
velvet worms (giant)	Private	968 036	Catos Creek	
velvet worms (giant)	Private	970 030	Catos Creek	
velvet worms (giant)	Private	971 020	Dublin Town	
velvet worms (giant)	Private	971 022	Catos Creek	
velvet worms (giant)	Private	972 019	Catos Creek	
velvet worms (giant)	SF	976 020	North Sister	
velvet worms (giant)	SF	977 019	North Sister	
velvet worms (giant)	SF	983 026	Binns Creek	
velvet worms (giant)	SF	984 098	Wattle Creek	
velvet worms (giant)	SF	985 028	Binns Creek	
velvet worms (giant)	SF	985 030	Binns Creek	
velvet worms (giant)	SF	995 976	Binns Creek	
eagles (wedge-tailed)	Private	Confidential	Near Norcotts	nest
eagles (wedge-tailed)	SF	Confidential	Avenue River area	nest
eagles (wedge-tailed)	SF	Confidential	Near Durham Creek	nest near

Species May Occur in Suitable Habitat	Habitat to Survey
velvet worms (blind)	Eucalypt forest with rotting logs.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
velvet worms (giant)	Eucalypt forest with rotting logs.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

DUNALLEY 5625

Known Localities of Species	Tenure	Map Grid	Locality	Notes
coastal birds (fairy tern)	Reserve	713 575	Marion Beach	historic site
coastal birds (hooded plover)	Reserve	760 527	Two Mile Beach	breeding site
coastal birds (hooded plover)	Reserve	782 517	Lagoon Bay	breeding site
coastal birds (hooded plover)	Reserve	716 565	Marion Beach	breeding site
coastal birds (hooded plover)	Reserve	719 561	The Long Spit	breeding site
coastal birds (little tern)	Reserve	711 587	Marion Bay - breeding prior to 1977	historic site
coastal birds (migratory waders)	Reserve	688 530	Blackman Bay	feed & roost
swift parrot	Private	638 505	2 km west of Dunalley on Fulham Road	foraging area
swift parrot	Private	643 507	1.5 km W of Dunalley on Fulham Road	foraging area
swift parrot	Private	644 509	1.5 km west of Dunalley	foraging area
swift parrot	Private	689 599	Burnt Hill Road	foraging area
swift parrot	Private	783 510	Lagoon Bay	foraging area
swift parrot	Private	785 510	Lagoon Bay	foraging area
swift parrot	Private	789 511	Lagoon Bay	foraging area
swift parrot	Private	791 504	0.5 km west of Goat Hill Creek	foraging area
eagles (wedge-tailed)	Crown	Confidential	North of Dunalley	nest near
eagles (wedge-tailed)	Private	Confidential	Near Tommys Hill	nest near
eagles (wedge-tailed)	Private	Confidential	Near Tasman Hill	nest
eagles (white-bellied sea-eagle)	Private	Confidential	Near Tasman Monument	nest
eagles (white-bellied sea-eagle)	Private	Confidential	Near Cape Paul Lamanon	nest
eagles (white-bellied sea-eagle)	Private	Confidential	Cape Fredrick Hendrick area	nest
eagles (white-bellied sea-eagle)	Private	Confidential	Cape Fredrick Hendrick area	nest

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
southeast stag beetles (broad-toothed)	Dry or wet forest with rotting logs and litter on the ground.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
forty-spotted pardalote	Grassy dry forest and woodland with white gum within 3 km of the coast.
southeast seastars (live-bearing seastar)	Intertidal rocky areas, on sandstone.
coastal birds (fairy tern, little tern)	Sand or shingle beaches, unvegetated sites near estuaries and nearby lakes, and estuarine and offshore islands.
coastal birds (hooded plover, little penguin)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
swift parrot	Forest and woodland dominated by blue gum or black gum within 10 km of the coast, including slopes and ridges.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

DUNDAS 3636

Known Localities of Species	Tenure	Map Grid	Locality	Notes
freshwater snails *(Beddomeia zeehanensis, Phrantela conica)*	Crown	655 629	Little Henty River trib. on Zeehan Road	type localities

Species May Occur in Suitable Habitat	Habitat to Survey
pencil pine moth	Pencil pine forest.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

ECHO 4632

Known Localities of Species	Tenure	Map Grid	Locality	Notes
ptunarra brown butterfly	Private	798 283	Bashan Plains	colony
eagles (wedge-tailed)	SF	Confidential	Near Mentmore Tier	nest
eagles (wedge-tailed)	Private	Confidential	Near Lake Echo	nest near
eagles (wedge-tailed)	SF	Confidential	Near Five Mile Marsh	nest
eagles (wedge-tailed)	SF	Confidential	Near Boggy Marsh Rivulet	nest

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
ptunarra brown butterfly	Native grassland or woodland with more than 15% cover of tussock grass.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

EDDYSTONE 6046

Known Localities of Species	Tenure	Map Grid	Locality	Notes
green and gold frog	FReserve	011 669	Mt William National Park	population
New Holland mouse	FReserve	106 626	Northwest of Eddystone Point	colony
New Holland mouse	FReserve	108 622	Northwest of Eddystone Point	colony
New Holland mouse	FReserve	104 634	Deep Creek Road	colony
New Holland mouse	FReserve	110 613	Deep Creek Road	colony
New Holland mouse	FReserve	117 610	Eddystone Road	colony
coastal birds (hooded plover)	Com'w	134 610	Eddystone Point	breeding site
coastal birds (hooded plover)	Reserve	120 600	Bay of Fires - key survey site	breeding site
coastal birds (little penguin, s-t shearwater)	FReserve	117 687	Georges Rocks	colonies
marine turtles (leatherback)	Crown		Swimming off Eddystone Point	1983 record
marine turtles (leatherback)	Com'w		Entangled 12 nm NE Eddystone Point	1986 record
marine turtles (leatherback)	Crown		Entangled Georges Reef, Eddystone Pt.	1997 record
marine turtles (leatherback)	Crown		Swimming Eddystone Point to Swan Is.	1972 to 1998

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
dwarf galaxiid	Slow-flowing and still waters with aquatic vegetation.
New Holland mouse	Dry coastal heathland and open heathy forest.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

EGG LAGOON 2460

Known Localities of Species	Tenure	Map Grid	Locality	Notes
orange-bellied parrot	Private	459 063	Egg Lagoon, King Island	historical '72
orange-bellied parrot	Private	474 035	Wallaby Lagoon, King Island	historical '73
orange-bellied parrot	FReserve	481 068	Lake Martha Lavinia, King Island	historical '74
orange-bellied parrot	FReserve	520 047	Lavinia Point, King Island	migration '92
coastal birds (fairy tern)	FReserve	520 047	Lavinia Point	breeding site
coastal birds (hooded plover)	FReserve	486 070	Lake Martha Lavina to Sea Elephant	breeding site
coastal birds (short-tailed shearwater)	FReserve	485 074	Martha Lavinia, King Island	colony
coastal birds (short-tailed shearwater)		470 096	Around Boulder Point, King Island	colony
southern hairy red snail	FReserve	481 068	Lake Martha Lavinia and surrounds	
southern hairy red snail	FReserve	491 060	Pennys Lagoon	

Species May Occur in Suitable Habitat	Habitat to Survey
King Island brown thornbill	Dry forest, woodland and scrubland.
orange-bellied parrot	Migration feeding habitat: saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast, including vegetated offshore islands.
coastal birds (fairy tern)	Sand or shingle beaches, unvegetated sites near estuaries and nearby lakes, and estuarine and offshore islands.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
southern hairy red snail	Tea tree, melaleuca, banksia scrub or wet eucalypt forest within 5 km of the coast.

ELDERSLIE 5028

Known Localities of Species	Tenure	Map Grid	Locality	Notes
eagles (wedge-tailed)	Private	Confidential	Near Constitution Hill	nest near

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

ELLENDALE 4628

Known Localities of Species	Tenure	Map Grid	Locality	Notes
eagles (wedge-tailed)	SF	Confidential	Repulse River	nest near
eagles (wedge-tailed)	SF	Confidential	Repulse River	nest near
eagles (wedge-tailed)	SF	Confidential	Repulse River	nest near
eagles (wedge-tailed)	Private	Confidential	Ironstone Creek area	nest
eagles (wedge-tailed)	SF	Confidential	Ironstone Creek area	nest

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

ELLINTHORP 5234

Known Localities of Species	Tenure	Map Grid	Locality	Notes
green and gold frog	Private	396 479	Macquarie River, Midland Highway	
eagles (wedge-tailed)	SF	Confidential	Mount Franklin area	nest
eagles (wedge-tailed)	SF	Confidential	Mount Franklin area	nest

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
ptunarra brown butterfly	Native grassland or woodland with more than 15% cover of tussock grass.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

ELLIOTT 3823

Known Localities of Species	Tenure	Map Grid	Locality	Notes
orange-bellied parrot	FReserve	943 312	Nye Bay	historical '81
orange-bellied parrot	FReserve	891 353	Unmarrah Creek	migration '93
coastal birds (hooded plover)	FReserve	908 332	Unnamed beach	breeding site
coastal birds (hooded plover)	FReserve	930 315	Nye Bay	breeding site

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
orange-bellied parrot	Breeding and migration feeding habitat: buttongrass plains with eucalypt forest patches, saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.

EMITA 5657

Known Localities of Species	Tenure	Map Grid	Locality	Notes
coastal birds (hooded plover)		767 780	Marshall Beach - survey site	breeding site
coastal birds (little penguin, s-t shearwater)	Crown	658 770	South Pascoe Island	colonies
coastal birds (short-tailed shearwater)	Crown	661 785	Inner and Outer Mid Pascoe Island	colonies
coastal birds (short-tailed shearwater)	Crown	736 704	Bird Island	colony

Species May Occur in Suitable Habitat	Habitat to Survey
Bass Strait wombat	Heath, scrub, woodland and pasture.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

ENDEAVOUR 3627

Known Localities of Species	Tenure	Map Grid	Locality	Notes
coastal birds (hooded plover)	FReserve	610 798	Whitehorses Beach	breeding site
coastal birds (hooded plover)	FReserve	634 782	Spero Bay Beach	breeding site
coastal birds (hooded plover)	FReserve	650 762	Endeavour Bay Beach	breeding site

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.

grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
orange-bellied parrot	Breeding and migration feeding habitat: buttongrass plains with eucalypt forest patches, saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

ENGINEER 3831

Species May Occur in Suitable Habitat	Habitat to Survey
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

EVANDALE 5239

Known Localities of Species	Tenure	Map Grid	Locality	Notes
green and gold frog	Private	200 978	Evandale	
eagles (wedge-tailed)	Private	Confidential	Temple Bar area	nest
eagles (wedge-tailed)	Private	Confidential	North Deddington	nest
caddisfly (*Hydroptila scamandra*)	Private		South Esk River near Evandale	

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

EXETER 4842

Known Localities of Species	Tenure	Map Grid	Locality	Notes
great crested grebe			Tamar River	foraging site
eagles (wedge-tailed)	Private	Confidential	Near Glengarry	nest near
eagles (wedge-tailed)	Private	Confidential	Stony Brook area	nest near
eagles (white-bellied sea-eagle)	FReserve	Confidential	Native Point area	nest
eagles (white-bellied sea-eagle)	FReserve	Confidential	Native Point area	nest
eagles (white-bellied sea-eagle)	Reserve		Tamar River	key foraging
green and gold frog	Private	949 278	Exeter	
Jungermans snail	Reserve	926 219	Notley Gorge	

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
great crested grebe	Lakes, rivers and estuaries.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.

quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

FADDENS 5432

Known Localities of Species	Tenure	Map Grid	Locality	Notes
ptunarra brown butterfly	Private	402 214	Mt Pleasant	colony
ptunarra brown butterfly	Private	424 208	Kewstoke Creek	colony
ptunarra brown butterfly	Private	600 247	Green Tier Creek	colony
ptunarra brown butterfly	Private	425 230	Black Tier	colony
ptunarra brown butterfly	Private	578 253	South of Black Johnny's Marsh	colony
eagles (wedge-tailed)	Private	Confidential	Black Tier area	nest
eagles (wedge-tailed)	Private	Confidential	North Black Tier area	nest
eagles (wedge-tailed)	Private	Confidential	Faddens Tier area	nest
Swan galaxias	SF	Confidential	Headwaters, Swan and Macquarie Rivers	translocated

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
ptunarra brown butterfly	Native grassland or woodland with more than 15% cover of tussock grass.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
Swan galaxias	In catchment upstream of map sites.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

FALMOUTH (Scamander) 6040

Known Localities of Species	Tenure	Map Grid	Locality	Notes
Australian grayling		030 090	Scamander River	
velvet worms (giant)	SF	000 084	Binns Creek	
velvet worms (giant)	SF	010 042	Yorkys Creek	
velvet worms (giant)	SF	025 061	Henderson Lagoon	
velvet worms (giant)	Private	036 008	Devils Creek	
velvet worms (giant)	Reserve	046 099	Scamander River	
velvet worms (giant)	Private	049 003	Salters Gully	
velvet worms (giant)	Private	052 005	Salters Gully	
green and gold frog	Private	056 035	Falmouth	
coastal birds (fairy tern, little tern)		057 092	Scamander spit	breeding site
coastal birds (hooded plover)	Crown	057 098	Wrinklers Beach	breeding site
coastal birds (hooded plover)	Crown	056 085	Steels Beach	breeding site
coastal birds (hooded plover)		066 017	Mariposa Beach	breeding site
coastal birds (little tern)	Reserve	059 045	Falmouth River	breeding site
swift parrot	SF	022 002	St Marys Pass	foraging area
swift parrot	Private	037 019	3 km SW of Falmouth, Falmouth Road	foraging area
swift parrot	Private	042 022	2 km SW of Falmouth, Falmouth Road	foraging area
marine turtles (leatherback)	Crown	057 095	Beachwashed, mouth of Scamander Riv.	1986 record

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of the Scamander River.
velvet worms (giant)	Eucalypt forest with rotting logs.
New Holland mouse	Dry coastal heathland and open heathy forest.
coastal birds (fairy tern, little tern)	Sand or shingle beaches, unvegetated sites near estuaries and nearby lakes, and estuarine and offshore islands.

coastal birds (hooded plover)	Sandy ocean beaches and dunes.
swift parrot	Forest and woodland dominated by blue gum or black gum within 10 km of the coast, including slopes and ridges.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

FEDERATION 4420

Species May Occur in Suitable Habitat	Habitat to Survey
orange-bellied parrot	Breeding and migration feeding habitat: buttongrass plains with eucalypt forest patches, saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

FINGAL 5838

Known Localities of Species	Tenure	Map Grid	Locality	Notes
velvet worms (blind)	SF / Priv	955 894	Lightwood Rivulet	
velvet worms (blind)	SF	977 893	Break O'Day River	
velvet worms (blind)	SF	988 878	MG Road	
velvet worms (blind)	SF	988 897	Attleys Creek	
Swan galaxias	SF	Confidential	Headwaters, Swan and Macquarie Rivers	translocated
eagles (wedge-tailed)	SF	Confidential	Near Mount Malcolm	nest
eagles (wedge-tailed)	SF	Confidential	Near Smudgy Gully	nest
eagles (wedge-tailed)	SF	Confidential	Near Smudgy Gully	nest
eagles (wedge-tailed)	SF	Confidential	Near Bare Rock	nest (Craven)
eagles (wedge-tailed)	SF	Confidential	Near Gray	nest near

Species May Occur in Suitable Habitat	Habitat to Survey
velvet worms (blind)	Eucalypt forest with rotting logs.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
Swan galaxias	In catchment upstream of map sites.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

FISHER 5954

Known Localities of Species	Tenure	Map Grid	Locality	Notes
coastal birds (hooded plover)		932 423	Big River Cove	breeding site
coastal birds (white-fronted tern)	Crown	053 474	Fisher Reef, off Store Point	breeding site
coastal birds (white-fronted tern)	Crown	077 465	Billy Goat Reefs	breeding site
coastal birds (white-fronted tern)		028 440	Rock stack at Little Dog Island	breeding site
coastal birds (white-fronted tern)	FReserve	089 428	Briggs Islet	breeding site
coastal birds (white-fronted tern)	FReserve		Penguin Island near Great Dog Island	breeding site
coastal birds (w-fronted tern, s-t shearwater)	FReserve	060 440	Great Dog Island	breeding sites
coastal birds (w-fronted tern, s-t shearwater)	P/Res/FR	025 435	Little Dog Island	breeding sites
coastal birds (little penguin, s-t shearwater)	Crown	054 472	Fisher Island	colonies
coastal birds (little penguin, s-t shearwater)	P/Res/FR	065 463	Little Green Island	colonies
coastal birds (migratory waders)	Reserve	104 470	Adelaide Bay, Logan Lagoon	feed & roost
coastal birds (little penguin)	Crown	053 473	Fisher Reef	colony
coastal birds (little penguin)	Crown	077 465	Billy Goat Reefs	colony
coastal birds (little penguin)	FReserve	089 428	Briggs Islet	colony
coastal birds (little penguin)	FReserve	060 440	Great Dog Island	colony

coastal birds (little penguin)	P/Res/FR	053 473	Little Dog Island	colony
coastal birds (little penguin)	Private	105 400	Vansittart Island	colony
coastal birds (little penguin)	Crown	066 457	Spencers Reef	colony
coastal birds (little penguin)	FReserve	071 428	Islet southeast side of Great Dog Island	colony
eagles (wedge-tailed)	FReserve	Confidential	Near Mount Razorback	nest near
eagles (wedge-tailed)	FReserve	Confidential	Near Mount Belstead	nest near

Species May Occur in Suitable Habitat	Habitat to Survey
Bass Strait wombat	Heath, scrub, woodland and pasture.
forty-spotted pardalote	Grassy dry forest and woodland with white gum *(Eucalyptus viminalis)*.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
coastal birds (white-fronted tern)	Sand or shingle beaches, unvegetated sites near estuaries and nearby lakes, and estuarine and offshore islands.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

FLUTED CAPE 5219

Known Localities of Species	Tenure	Map Grid	Locality	Notes
forty-spotted pardalote	Reserve	203 955	Saintys Creek, South Bruny Island	colony B 65
forty-spotted pardalote	Reserve	203 990	Conleys Road, South Bruny Island	colony B 62
coastal birds (hooded plover)	Reserve	274 983	Adventure Bay Beach - survey site	breeding site
swift parrot	FReserve	212 974	SE of Lunawanna on Coolangatta Road	foraging area
swift parrot	FReserve	246 993	W of Adventure Bay on Coolangatta Rd	foraging area
swift parrot	SF	254 999	NW of Adventure Bay, Coolangatta Rd	foraging area
swift parrot	Priv / Res	288 987	Cookville	foraging area
swift parrot	Private	289 986	Cookville	foraging area
swift parrot	Private	289 989	Cookville	foraging area
swift parrot	Private	290 989	East Cove	foraging area
swift parrot	FReserve	291 991	1 km southwest of Grass Point	foraging area
swift parrot	FReserve	294 995	0.5 km southwest of Grass Point	foraging area
eagles (wedge-tailed)	SF	Confidential	Near Mount Cook on Bruny Island	nest
southeast stag beetles (Mt Mangana)	FReserve	220 985	Mt Mangana west	
southeast stag beetles (Mt Mangana)	FReserve	231 984	Mt Mangana	
southeast stag beetles (Mt Mangana)	FReserve	234 990	Mt Mangana east	

Species May Occur in Suitable Habitat	Habitat to Survey
broad-striped ghost moth	Bruny Island heathland and sedgelands.
forty-spotted pardalote	Grassy dry forest and woodland with white gum *(Eucalyptus viminalis)*.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
southeast seastars (live-bearing seastar)	Intertidal rocky areas, on sandstone.
southeast stag beetles (Mt Mangana)	Wet forest containing decaying logs.
coastal birds (hooded plover, little penguin)	Sandy ocean beaches and dunes.
swift parrot	Forest and woodland dominated by blue gum or black gum within 10 km of the coast, including slopes and ridges.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

FOLLY 3644

Known Localities of Species	Tenure	Map Grid	Locality	Notes
giant freshwater lobster	Private	764 468	Flowerdale River	key catchm't
giant freshwater lobster	Prv/Crwn	764 473	Flowerdale River	key catchm't

giant freshwater lobster	SF		Arthur River and tributaries	key catchm't
velvet worms (northwest)	Prv/Crwn	759 468	Flowerdale River	Mesibov '98
eagles (wedge-tailed)	SF	Confidential	South of Meunna	nest

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes, and Arthur River system, below about 400 m alt.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
velvet worms (northwest)	Wet forest with rotting logs and woody ground litter.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

FRIENDLY 6034 (on Friendly-Lodi sheet)

Known Localities of Species	Tenure	Map Grid	Locality	Notes
New Holland mouse	Private	035 495	Friendly Beaches Road	colony
New Holland mouse	FReserve	063 494	Friendly Beaches	colony
coastal birds (hooded plover)	FReserve	062 468	Friendly Beaches - survey site	breeding site
coastal birds (migratory waders)	Reserve	022 511	Moulting Lagoon shore and mudflats	foraging site
eagles (white-bellied sea-eagle)	Crown	Confidential	Near Freshwater Lagoon	nest
marine turtles (leatherback)	Crown		Entangled off Friendly Beaches	no date

Species May Occur in Suitable Habitat	Habitat to Survey
forty-spotted pardalote	Grassy dry forest and woodland with white gum within 3 km of the coast.
New Holland mouse	Dry coastal heathland and open heathy forest.
coastal birds (fairy tern)	Sand or shingle beaches, unvegetated sites near estuaries and nearby lakes, and estuarine and offshore islands.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

GEEVESTON 4822

Known Localities of Species	Tenure	Map Grid	Locality	Notes
southeast stag beetles (Mt Mangana)	SF	869 212	Bennetts Road	
swift parrot	Private	960 208	Kermandie	foraging area
swift parrot	Private	976 216	Port Huon	foraging area
swift parrot	Private	981 214	Shipwrights Point	foraging area
swift parrot	Priv / Res	982 213	Shipwrights Point	foraging area
swift parrot	Priv / Res	998 229	Glaziers Bay	foraging area

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
southeast stag beetles (Mt Mangana)	Wet forest containing decaying logs.

quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
swift parrot	Forest and woodland dominated by blue gum or black gum within 10 km of the coast, including slopes and ridges.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

GIBLIN 5440

Known Localities of Species	Tenure	Map Grid	Locality	Notes
northeast forest snail	SF	568 094	Roses Tier	

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
northeast forest snail	Rainforest, mixed forest or wet forest containing rainforest elements.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

GLADSTONE 5846

Known Localities of Species	Tenure	Map Grid	Locality	Notes
dwarf galaxiid	Private		Icena Creek, east of Gladstone	
dwarf galaxiid	Private	858 766	Rushy Lagoon	
giant freshwater lobster	Crown	814 678	Ringarooma River near Black Duck Lg.	
giant freshwater lobster	SF	849 601	Peacock Creek	

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
dwarf galaxiid	Slow-flowing and still waters with aquatic vegetation.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes, below about 400 m altitude.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

GLEN HUON 4823

Known Localities of Species	Tenure	Map Grid	Locality	Notes
southeast stag beetles (Mt Mangana)	SF	839 306	Edwards Road	
southeast stag beetles (Mt Mangana)	SF	891 310	Bracken Ridge	
southeast stag beetles (Mt Mangana)	SF	899 301	Bracken Ridge	
southeast stag beetles (Mt Mangana)	SF	918 319	Bermuda Road	
southeast stag beetles (Mt Mangana)	Private	959 352	Glen Huon	
eagles (wedge-tailed)	SF	Confidential	Near Leithbridge Hill	nest
eagles (wedge-tailed)	Private	Confidential	Near Leithbridge Hill	nest

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Huon River (middle and lower reaches).
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.

green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
southeast stag beetles (Mt Mangana)	Wet forest containing decaying logs.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
swift parrot	Forest and woodland dominated by blue gum or black gum within 10 km of the coast, including slopes and ridges.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

GLOVERS 4421

Species May Occur in Suitable Habitat	Habitat to Survey
pencil pine moth	Pencil pine forest.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

GOG 4440

Known Localities of Species	Tenure	Map Grid	Locality	Notes
cave ecosystem *(Hickmanoxyomma gibbergunyar)*		Confidential	Mole Creek area	
giant freshwater lobster	SF	445 088	Upper Minnow River	
giant freshwater lobster	SF	469 084	Gog Range river systems	key catchm't
giant freshwater lobster	SF	485 069	Gog Range river systems	key catchm't
giant freshwater lobster	SF	486 089	Gog Range river systems	key catchm't
giant freshwater lobster	SF	487 069	Gog Range river systems	key catchm't
giant freshwater lobster	SF	489 089	Gog Range river systems	key catchm't
giant freshwater lobster	SF	532 080	Gog Range river systems	key catchm't
giant freshwater lobster	SF	535 081	Garden of Eden Creek	
giant freshwater lobster	SF	536 083	Gog Range river systems	key catchm't
giant freshwater lobster	SF	540 059	Eel Hole Creek	
giant freshwater lobster	SF	548 068	Gog Range river systems	key catchm't
giant freshwater lobster	SF	548 070	Gog Range river systems	key catchm't
giant freshwater lobster	SF	598 019	Lobster Falls	
giant freshwater lobster			Mersey River and tributaries	key catchm't
green and gold frog	Private	573 093	Weegena and surrounds	key site
green and gold frog	Private	595 072	Dunorlan	key site
freshwater snails (*Beddomeia turnerae*)	SF	469 088	Minnow River trib., Lower Beulah Rd	type locality
freshwater snails (*Beddomeia turnerae*)	SF	486 070	Trib. Minnow River, east Kenzies Hill	
swift parrot	SF	558 050	4 km northwest of Magog	nest
swift parrot	SF	561 051	4 km northwest of Magog	nest
swift parrot	SF	575 056	2.5 km NW of Magog on Mersey River	nest
eagles (wedge-tailed)	SF	Confidential	Near Eel Hole Creek	nest
eagles (wedge-tailed)	FReserve	Confidential	Near Alum Cliffs on Mersey River	nest
eagles (wedge-tailed)	SF	Confidential	Near Magog	nest

Species May Occur in Suitable Habitat	Habitat to Survey
cave-dwelling invertebrates	Mole Creek caves and other karst areas.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes, below about 400 m altitude, esp. the Mersey River and Lobster Rivulet.

green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
swift parrot	Gog Range nesting habitat
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

GORDONVALE 4428

Known Localities of Species	Tenure	Map Grid	Locality	Notes
cave ecosystem (*Goedetrechus parallelus*)	SF	Confidential	Junee, Florentine area	

Species May Occur in Suitable Habitat	Habitat to Survey
cave-dwelling invertebrates	Junee, Florentine caves and other karst.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
pencil pine moth	Pencil pine forest.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

GORMANSTON 3834

Species May Occur in Suitable Habitat	Habitat to Survey
pencil pine moth	Pencil pine forest.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

GOULDS 4034

Species May Occur in Suitable Habitat	Habitat to Survey
pencil pine moth	Pencil pine forest.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

GRAHAM 6032

Known Localities of Species	Tenure	Map Grid	Locality	Notes
coastal birds (hooded plover)	FReserve	060 292	Hazards Beach - survey site	breeding site
coastal birds (short-tailed shearwater)	FReserve	042 297	Refuge Island	colony
eagles (white-bellied sea-eagle)	FReserve	Confidential	Near Gleaner Reef	nest
eagles (white-bellied sea-eagle)	FReserve	Confidential	Near Quartzite Ridge	nest
eagles (white-bellied sea-eagle)	FReserve	Confidential	Near Gates Bluff	nest

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
New Holland mouse	Dry coastal heathland and open heathy forest.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

GRASSY 2456

Known Localities of Species	Tenure	Map Grid	Locality	Notes
coastal birds (hooded plover)	Reserve	536 672	City of Melbourne Bay to Barrier Creek	breeding sites
coastal birds (hooded plover)	Reserve	525 650	Sandblow Point to City of Melb. Bay	breeding sites
coastal birds (short-tailed shearwater)	Reserve	550 730	Barrier Creek, King Island	colony

coastal birds (short-tailed shearwater)	Reserve	498 620	Grassy area, King Island	colony
coastal birds (short-tailed shearwater)	Reserve	530 633	Bold Head, King Island	colony
coastal birds (short-tailed shearwater)	Reserve	483 597	Sandblow Point, King Island	colony
eagles (white-bellied sea-eagle)	Private	Confidential	Northeast of Grassy	nest
eagles (white-bellied sea-eagle)	Private	Confidential	Near Yarra Creek Road	nest

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
King Island brown thornbill	Dry forest, woodland and scrubland.
orange-bellied parrot	Migration feeding habitat: saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast, including vegetated offshore islands.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.

GRAY 6038 (see Ironhouse 6039, Piccaninny 6038)

GREAT BAY 5221

Known Localities of Species	Tenure	Map Grid	Locality	Notes
forty-spotted pardalote	Private	289 195	West of Adams Bay, Bruny Island	colony B 46
forty-spotted pardalote	Private	285 185	Stallards Hill, Bruny Island	colony B 47
forty-spotted pardalote	Private	330 195	South of Big Lookout, Bruny Island	colony B 48
forty-spotted pardalote	Private	333 185	Above Bellchamber, Bruny Island	colony B 49
forty-spotted pardalote	Private	333 175	Above Red Reef, Bruny Island	colony B 50
forty-spotted pardalote	Private	330 169	Above Variety Bay, Bruny Island	colony B 51
forty-spotted pardalote	Private	334 165	Above Variety Bay, Bruny Island	colony B 52
forty-spotted pardalote	Private	335 160	South Variety Bay, Bruny Island	colony B 53
forty-spotted pardalote	Private	295 155	Cheverton Point, Bruny Island	colony B 54a
forty-spotted pardalote	Private	295 147	Behind Cheverton Point, Bruny Island	colony B 54b
forty-spotted pardalote	Reserve	318 140	Big Scrub Creek, Neck Game Reserve	colony B 55
forty-spotted pardalote	Reserve	348 129	South on Rookery Track, Bruny Island	colony B 56
forty-spotted pardalote	Private	308 191	Below Gravel Pits, Bruny Island	colony B 76
coastal birds (fairy tern)	Reserve	310 113	The Neck Beach	historic breed
coastal birds (hooded plover)	Reserve	235 118	Mars Bluff	breeding site
coastal birds (hooded plover)	Reserve	300 106	Along the Neck Beach	breeding site
coastal birds (hooded plover, s-t shearwater)	Reserve	337 123	Miles Beach	breeding sites
coastal birds (short-tailed shearwater)	Reserve	292 101	Lookout area on The Neck Beach	colonies
coastal birds (short-tailed shearwater)	Reserve	344 108	Rookery area, Cape Queen Elizabeth	colonies
coastal birds (little penguin)	Reserve	284 090	Dunes around The Neck Beach lookout	colonies
coastal birds (little penguin)	FReserve	235 171	Green Island	colony
swift parrot	Private	244 199	Snake Bay	nest
eagles (wedge-tailed)	Res / Priv	Confidential	Variety Bay on Bruny Island	nest
eagles (white-bellied sea-eagle)	Private	Confidential	Simpsons Point	nest
eagles (white-bellied sea-eagle)	FReserve	Confidential	Moorina Bay	nest
eagles (white-bellied sea-eagle)	Reserve	Confidential	Near Missionary Bay	nest
seals (Australian fur seal, NZ fur seal)	FReserve	348 110	Cape Queen Elizabeth, Bruny Island	haul-out site
southeast seastars *(Smilasteris tasmaniae)*	Reserve	295 157	Cheverton Point, Ford Bay, Bruny Is.	colony
southeast seastars *(Smilasteris tasmaniae)*	Reserve	305 157	Sadgrove Point, Ford Bay, Bruny Island	colony

Species May Occur in Suitable Habitat	Habitat to Survey
broad-striped ghost moth	Bruny Island heathland and sedgeland.
forty-spotted pardalote	Grassy dry forest and woodland with white gum (Eucalyptus viminalis).
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
southeast seastars (live-bearing seastar)	Intertidal rocky areas, on sandstone.

coastal birds (fairy tern)	Sand or shingle beaches, unvegetated sites near estuaries and nearby lakes, and estuarine and offshore islands.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
swift parrot	Forest and woodland dominated by blue gum or black gum within 10 km of the coast, including slopes and ridges.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.
southeast seastars (*Smilasteris tasmaniae*)	Coastal rocky areas in the shallow littoral water zone.

GREENS BEACH 4645

Known Localities of Species	Tenure	Map Grid	Locality	Notes
green and gold frog	Private	789 507	Near Greens Beach Road	
coastal birds (hooded plover)	Reserve	794 520	Greens Beach	breeding site
marine turtles (leatherback)			Beachwashed on Greens Beach	1971 record

Species May Occur in Suitable Habitat	Habitat to Survey
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
New Holland mouse	Dry coastal heathland and open heathy forest.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

GRIM 3049

Known Localities of Species	Tenure	Map Grid	Locality	Notes
orange-bellied parrot	Private	081 903	Drains west of Welcome Heath	migration '99
orange-bellied parrot	FReserve	049 939	Cape Grim	historical '76
coastal birds (hooded plover)	Private	074 983	Woolnorth Point	breeding site
coastal birds (little tern)	Crown	167 925	Kangaroo Island	observed
coastal birds (little penguin)	Crown	082 986	Harbour Islets	colony
coastal birds (little penguin)	Crown	083 999	Henderson Islet (North)	colony
coastal birds (little penguin, s-t shearwater)	Private	045 995	Trefoil Island	colonies
coastal birds (little penguin, s-t shearwater)	FReserve	037 950	East Doughboy Island	colonies
coastal birds (short-tailed shearwater)	Crown	033 950	West Doughboy Island	colony
coastal birds (short-tailed shearwater)	Private		Woolnorth area	colony
coastal birds (short-tailed shearwater)	Crown	082 986	Harbour Islets	colony
coastal birds (migratory waders)	Crown	167 925	Around Kangaroo Island - survey site	feed & roost
coastal birds (migratory waders)	Priv/Crn		Boullanger Bay headlands - survey site	foraging site
eagles (wedge-tailed)	Private	Confidential	South of Woolnorth	nest
eagles (white-bellied sea-eagle)	Private	Confidential	Near Shoal Inlet	nest
Schayers grasshopper	Private	046 944	Cape Grim to Victory Hill	key site

Species May Occur in Suitable Habitat	Habitat to Survey
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
orange-bellied parrot	Migration feeding habitat: saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast, including vegetated offshore islands.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

GRINDSTONE (Boltons) 5830

Known Localities of Species	Tenure	Map Grid	Locality	Notes
coastal birds (hooded plover)	Crown	808 050	Boltons Beach - survey site	breeding site
coastal birds (short-tailed shearwater)	FReserve	955 034	Ile des Phoques, north of Maria Island	colony
swift parrot	Private	818 086	2 km southeast of Corner Hill	foraging area
eagles (white-bellied sea-eagle)	Private	Confidential	Near Rough Hill	nest
eagles (white-bellied sea-eagle)	FReserve	Confidential	Ile des Phoques, north of Maria Island	nest
eagles (white-bellied sea-eagle)	FReserve	Confidential	Ile des Phoques, north of Maria Island	nest
seals (Australian fur seal, NZ fur seal)	FReserve	957 034	Iles des Phoques, north of Maria Island	haul-out site
marine turtles (leatherback)	Crown		Entangled north of Maria Island	1936 to 1986
marine turtles (leatherback)	Crown		Swimming off Isle de Phoques	1986 record

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
forty-spotted pardalote	Grassy dry forest and woodland with white gum within 3 km of the coast.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
swift parrot	Forest and woodland dominated by blue gum or black gum within 10 km of the coast, including slopes and ridges.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

GUILDFORD 3841

Known Localities of Species	Tenure	Map Grid	Locality	Notes
ptunarra brown butterfly	Private	850 120	Micklethwaite Marsh margins	colony
ptunarra brown butterfly	Private	864 135	Guildford Road	colony
ptunarra brown butterfly	Private	887 138	Chilton Bridge	colony
ptunarra brown butterfly	Private	907 133	Guildford	colony
ptunarra brown butterfly	Private	916 120	Dairymaid Plain	colony 138
ptunarra brown butterfly	Private	919 129	Dairymaid Plain	colony 130
ptunarra brown butterfly	Private	925 128	Dairymaid Plain	colony 139
ptunarra brown butterfly	Private	957 128	East of Talbots Lagoon, Guildford Road	colony
ptunarra brown butterfly	Private	968 192	Peak Plain	colony
ptunarra brown butterfly	Private	998 117	Medway River	colony
giant freshwater lobster	Private		Hellyer River and tributaries	key catchm't
eagles (wedge-tailed)	Private	Confidential	Near Guildford	nest

Species May Occur in Suitable Habitat	Habitat to Survey
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes, below about 400 m alt., esp. the Hellyer River.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
ptunarra brown butterfly	Native grassland or woodland with more than 15% cover of tussock grass.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.

eagle (nest)			Large tracts (more than 10 ha) of eucalypt or mixed forest.	

HAMILTON 4828

Known Localities of Species	Tenure	Map Grid	Locality	Notes
giant freshwater lobster	Private	857 876	Clyde River, Hamilton	translocated
eagles (wedge-tailed)	Private	Confidential	Hamilton area	nest
eagles (white-bellied sea-eagle)	Private	Confidential	Near Long Bottom Creek	nest

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
giant freshwater lobster	Clyde River - translocated population
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

HANLETH 5437

Known Localities of Species	Tenure	Map Grid	Locality	Notes
eagles (wedge-tailed)	Private	Confidential	Near Pork Chop Gully	nest
eagles (wedge-tailed)	Private	Confidential	Near Ben Stewart	nest
eagles (wedge-tailed)	Private	Confidential	Near Dead Cows Hill	nest
eagles (wedge-tailed)	Private	Confidential	Near Dead Cows Hill	nest
eagles (wedge-tailed)	Private	Confidential	Near Peaky Gully	nest
eagles (wedge-tailed)	Private	Confidential	Near Turners Hill	nest

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

HARDWICKE 3238

Known Localities of Species	Tenure	Map Grid	Locality	Notes
Australian grayling	FReserve	275 857	Pieman River, near Ferry Point	also nearby
coastal birds (hooded plover)	FReserve	273 846	Mouth of the Pieman River	breeding site

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of the Pieman River.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
orange-bellied parrot	Migration feeding habitat: saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast, including vegetated offshore islands.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

HARFORD 4643

Known Localities of Species	Tenure	Map Grid	Locality	Notes
Australian grayling	Priv / SF	635 331	Rubicon River, 600 m upstream	
New Holland mouse	SF	795 394	Scots Hill	colony
eagles (wedge-tailed)	SF	Confidential	Near Masseys Creek	nest
eagles (wedge-tailed)	SF	Confidential	Near Simmonds Hill	nest
eagles (white-bellied sea-eagle)	Private	Confidential	Near The Tongue, Port Sorell	nest
coastal birds (little penguin)	Crown	643 377	Grass Island, Port Sorell	colony

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
New Holland mouse	Dry coastal heathland and open heathy forest.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

HASTINGS 4819

Known Localities of Species	Tenure	Map Grid	Locality	Notes
cave ecosystem *(Hickmanoxyomma cavaticum, Idacarabus cordicollis)*	FRes/SF	Confidential	Hastings and Lune area	
southeast stag beetles (Mt Mangana)	SF	865 971	Hastings area	
southeast stag beetles (Mt Mangana)	SF	889 965	Hastings area	
swift parrot	Private	975 913	Southport	foraging area
swift parrot	Private	976 912	Southport	foraging area

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
broad-striped ghost moth	Sedgeland in the Ida Bay area
cave-dwelling invertebrates	Hastings, Lune or other karst areas.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
forty-spotted pardalote	Grassy dry forest and woodland with white gum within 3 km of the coast.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
southeast stag beetles (Mt Mangana)	Wet forest containing decaying logs, possibly Ida Bay area.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
swift parrot	Forest and woodland dominated by blue gum or black gum within 10 km of the coast, including slopes and ridges.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

HEEMSKIRK 3436

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
orange-bellied parrot	Migration feeding habitat: saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast, including vegetated offshore islands.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

HENRY 5836

Known Localities of Species	Tenure	Map Grid	Locality	Notes
Australian grayling	FReserve		Apsley River Gorge	
chaostola skipper	Private	836 657	Hop Pole Bottom	colony
Swan galaxias	FReserve	Confidential	Parts of Swan River	natural pop.
Swan galaxias	SF	Confidential	Swan River, Wildlife Priority Area	natural pop.

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Apsley River (middle and lower parts).
chaostola skipper	Dry open forest with *Gahnia radula* at low altitude.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
Swan galaxias	In catchment upstream of map sites.
swift parrot	Forest and woodland dominated by blue gum or black gum within 10 km of the coast, including slopes and ridges.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

HENTY 3533 (see Bellinger 3533, Mallanna 3534)

HERMITAGE 4832

Known Localities of Species	Tenure	Map Grid	Locality	Notes
ptunarra brown butterfly	Private	800 285	Bashan Plains	colony
ptunarra brown butterfly	Private	806 273	Gathering Hill	colony
ptunarra brown butterfly	Private	925 214	Pleasant Knoll, Waddamana Road	colony
ptunarra brown butterfly	Private	953 263	Porters Pinnacle	colony
ptunarra brown butterfly	Private	958 279	Northeast of Porters Pinnacle	colony
ptunarra brown butterfly	Private	991 299	Millers Gully	colony
eagles (wedge-tailed)	Private	Confidential	Near Gibraltar Marsh	nest near
eagles (wedge-tailed)	SF	Confidential	Near Shannon Tier	nest
eagles (wedge-tailed)	Private	Confidential	No location provided	nest near

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
ptunarra brown butterfly	Native grassland or woodland with more than 15% cover of tussock grass.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

HIBBS 3628

Known Localities of Species	Tenure	Map Grid	Locality	Notes
coastal birds (hooded plover)	FReserve	600 855	Hibbs Lagoon Beach	breeding site
coastal birds (hooded plover)	FReserve	604 843	Unnamed beach	breeding site
orange-bellied parrot	FReserve	Confidential	Birchs Inlet - historic breeding	release site
seals (Australian fur seal)	FReserve	575 805	Point Hibbs, south of Strahan	haul-out site
marine turtles (leatherback)	Com'w		Entangled 30 nm off Point Hibbs	1993 record

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
orange-bellied parrot	Breeding and migration feeding habitat: buttongrass plains with eucalypt forest patches, saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

HILLIARD 4019

Known Localities of Species	Tenure	Map Grid	Locality	Notes
seals (Australian fur seal)	FReserve	136 918	Sugarloaf Rocks, south of Port Davey	haul-out site
orange-bellied parrot	FReserve	166 975	Spain Bay	historical '79
orange-bellied parrot	FReserve	185 939	Noyhener Beach	survey 1999
orange-bellied parrot	FReserve	192 911	Faults Bay	historical '80
coastal birds (short-tailed shearwater)	FReserve	163 913	Muttonbird (Flat) Island	colony
coastal birds (short-tailed shearwater)	FReserve	136 918	Sugarloaf Rocks, south of Port Davey	colony
coastal birds (short-tailed shearwater)	FReserve	133 927	Wendar Island	colony
coastal birds (short-tailed shearwater)	FReserve	122 980	Big Caroline Rock	colony
coastal birds (short-tailed shearwater)	FReserve	129 980	Swainson Island	colony
coastal birds (short-tailed shearwater)	FReserve	147 985	Hay Island	colony

Species May Occur in Suitable Habitat	Habitat to Survey
orange-bellied parrot	Breeding and migration feeding habitat: buttongrass plains with eucalypt forest patches, saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

HIPPOLYTE 5722

Known Localities of Species	Tenure	Map Grid	Locality	Notes
southeast seastars (live-bearing seastar)	FReserve	783 227	Fortescue Bay, southern shore, intertidal	colony
southeast stag beetles (Mt Mangana)	SF	744 292	Balts Road	
eagles (white-bellied sea-eagle)	Reserve	Confidential	Near Stinking Bay	nest
eagles (white-bellied sea-eagle)	FReserve	Confidential	Near Bivouac Bay	nest
eagles (white-bellied sea-eagle)	FReserve	Confidential	Near Fortescue Bay	nest
eagles (white-bellied sea-eagle)	FReserve	Confidential	Near Fortescue Bay	nest
coastal birds (little penguin)	FReserve	775 235	Fortescue Bay, north of beach	colony
coastal birds (little penguin, s-t shearwater)	FReserve	855 248	Hippolyte Rock, Tasman Peninsula	colonies
coastal birds (short-tailed shearwater)	FReserve	820 232	The Lanterns	colony
seals (Australian fur seal, NZ fur seal)	FReserve	855 248	Hippolyte Rock, Tasman Peninsula	haul-out site
marine turtles (leatherback)	FReserve		Captured at Fortescue Bay	1889 record

marine turtles (leatherback)	FReserve	Swimming offshore, Fortescue Bay	1945 record
marine turtles (leatherback)	Crown	Entangled just north of Fortescue Bay	1985 record
marine turtles (leatherback)	Crown	Entangled Fortescue Bay near Lanterns	1986 record
marine turtles (leatherback)	Crown	Swimming near Hippolyte Rock	1995 record

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
southeast stag beetles (broad-toothed, Mt Mangana)	Dry or wet forest with rotting logs and litter on the ground.
burgundy snail	Wet eucalypt forest.
forty-spotted pardalote	Grassy dry forest and woodland with white gum within 3 km of the coast.
southeast seastars (live-bearing seastar)	Intertidal rocky areas, on sandstone.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
swift parrot	Forest and woodland dominated by blue gum or black gum within 10 km of the coast, including slopes and ridges.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

HOBART 5225

Known Localities of Species	Tenure	Map Grid	Locality	Notes
caddisfly *(Hydrobiosella armata)*	Private	225 497	Hobart Rivulet, Strickland Ave	
green and gold frog	Private	251 544	New Town	
green and gold frog	Private	284 574	Geilston Bay	
coastal birds (fairy tern)	Reserve	388 590	Barilla Bay - breeding up to early 1980s	historic site
coastal birds (migratory waders)	Reserve	390 597	Barilla Bay and nearby lagoons	feed & roost
swift parrot	Private	225 503	5 km southwest of Hobart	foraging area
swift parrot	Private	228 580	Elwick Bay area	foraging area
swift parrot	Private	237 577	Royal Hobart Showgrounds	foraging area
swift parrot	Private	238 507	South Hobart area	foraging area
swift parrot	Private	245 532	Mount Stuart and surrounds	foraging area
swift parrot	Private	256 559	New Town Bay area	foraging area
swift parrot	Council	257 553	Cornelian Bay area	foraging area
swift parrot	TA	257 595	Risdon Cove and surrounds	foraging area
swift parrot	Private	262 521	Parkland around Murray Street, Hobart	foraging area
swift parrot	Private	283 570	Geilston Bay area	foraging area
swift parrot	Private	291 542	Rosny area	foraging area
swift parrot	Private	292 539	Montagu Bay area	foraging area
swift parrot	Private	301 527	Bellerive area	foraging area
swift parrot	Reserve	320 569	Meehan Range	nest
swift parrot	Private	329 521	Howrah	foraging area
eagles (wedge-tailed)	Private	Confidential	Kellevie area	nest
spotted handfish	Crown	Confidential	Derwent River area	colony
southeast seastars *(Marginaster littoralis)*	Crown	266 555	Cornelian Bay Point	colony
southeast seastars *(Marginaster littoralis)*	Crown		Powder Jetty, near Tasman Bridge	colony
southeast seastars *(Marginaster littoralis)*	Crown	275 540	Pavillion Point, near Botanical Gardens	colony
southeast seastars *(Marginaster littoralis)*	Crown		Granville Avenue, Risdon	colony
southeast seastars *(Marginaster littoralis)*	Crown		Off Paloona Street, Lindisfarne	colony
spiders (Cascade funnel-web)			Creek banks in Cascade area	now extinct

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.

eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
forty-spotted pardalote	Grassy dry forest and woodland with white gum within 3 km of the coast.
great crested grebe	Derwent River between New Norfolk and Glenorchy.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
coastal birds (fairy tern)	Sand or shingle beaches, unvegetated sites near estuaries and nearby lakes, and estuarine and offshore islands.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
spotted handfish	Derwent River estuary and adjoining bays and channels.
swift parrot	Forest and woodland dominated by blue gum or black gum within 10 km of the coast, including slopes and ridges.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.
southeast seastars (*Marginaster littoralis*)	Shallow waters of rocky intertidal areas around the coastline.

HOLDER 3444

Known Localities of Species	Tenure	Map Grid	Locality	Notes
velvet worms (northwest)	SF	546 407	Little Rapid River	
giant freshwater lobster	SF		Arthur River and tributaries	key catchm't

Species May Occur in Suitable Habitat	Habitat to Survey
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes, and Arthur River system, below about 400 m alt.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
velvet worms (northwest)	Wet forest with rotting logs and woody ground litter.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

HUONVILLE 5023

Known Localities of Species	Tenure	Map Grid	Locality	Notes
Australian grayling	Crown	037 353	Huon River at Huonville Bridge	
southeast stag beetles (Mt Mangana)	Private	156 326	Margate Tier	
swift parrot	Private	011 373	Huon Valley Golf Course	foraging area
swift parrot	Private	045 345	1 km southeast of Huonville	foraging area
eagles (wedge-tailed)	SF	Confidential	Near Wellings Hill on Snug Tiers	nest
eagles (wedge-tailed)	SF	Confidential	Pelverata Falls area	nest

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of North West Bay River and Huon River.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
southeast stag beetles (Mt Mangana)	Wet forest containing decaying logs.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.

swift parrot	Forest and woodland dominated by blue gum or black gum within 10 km of the coast, including slopes and ridges.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

INA 4434

Known Localities of Species	Tenure	Map Grid	Locality	Notes
Clarence galaxias	FReserve	Confidential	Clarence catchment	
Clarence galaxias	Private	Confidential	Clarence Lagoon tributary	
Clarence galaxias	SF	Confidential	Upper Clarence River catchment	
ptunarra brown butterfly	Private	534 450	Gowan Brae II	colony
ptunarra brown butterfly	Private	546 432	Gowan Brae Road	colony
eagles (wedge-tailed)	SF	Confidential	Near Kenneth Lagoon	nest near
eagles (wedge-tailed)	SF	Confidential	Near Kenneth Lagoon	nest
eagles (wedge-tailed)	Private	Confidential	Near Kenneth Lagoon	nest
eagles (wedge-tailed)	Private	Confidential	Near Kenneth Lagoon	nest
eagles (wedge-tailed)	SF	Confidential	North of Dyes Marsh	nest near

Species May Occur in Suitable Habitat	Habitat to Survey
Clarence galaxias	Streams, marshes and lakes without brown trout in the Clarence and Nive catchments and Skullbone Plains area.
ptunarra brown butterfly	Native grassland or woodland with more than 15% cover of tussock grass.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

INNES 3827

Species May Occur in Suitable Habitat	Habitat to Survey
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

INTERLAKEN 5033

Known Localities of Species	Tenure	Map Grid	Locality	Notes
great crested grebe	HEC	140 305	Lake Crescent	foraging site
eagles (wedge-tailed)	Private	Confidential	Silver Plains area	nest
eagles (white-bellied sea-eagle)	Private	Confidential	Near St Georges Island	nest
ptunarra brown butterfly	Private	015 355	Scotts Tier	colony
ptunarra brown butterfly	Private	018 340	Black Snake Marsh	colony
ptunarra brown butterfly	Private	036 345	Scrummys Marsh	colony
ptunarra brown butterfly	Council	100 342	Silver Plains	colony
ptunarra brown butterfly	Private	108 300	Brownwater Lagoon	colony
ptunarra brown butterfly	Private	107 317	Hazelwoods Lagoon	colony
ptunarra brown butterfly	Private	123 347	Kermodes Drain	colony
ptunarra brown butterfly	Reserve	141 340	Interlaken picnic site	colony
ptunarra brown butterfly	Private	153 336	Interlaken Junction	colony
ptunarra brown butterfly	Private	173 342	Tunbridge Tier Road	colony
ptunarra brown butterfly	Private	181 316	Agnews Marsh	colony
ptunarra brown butterfly	Private	192 354	Tunbridge Tier Road	colony
ptunarra brown butterfly	Private	197 375	Dogs Head Creek	colony
saddled galaxias	Crwn/Prv	010 395	Woods Lake	

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
ptunarra brown butterfly	Native grassland or woodland with more than 15% cover of tussock grass.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

INTERVIEW 3239

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Pieman River (middle and lower parts).
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
orange-bellied parrot	Migration feeding habitat: saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast, including vegetated offshore islands.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

IRONHOUSE (Gray) 6039

Known Localities of Species	Tenure	Map Grid	Locality	Notes
velvet worms (blind)	SF / Priv	008 984	St Marys Pass	faunal break
velvet worms (giant)	SF / Priv	008 984	St Marys Pass	faunal break
velvet worms (blind)	Private	022 909	Elephant Pass	
velvet worms (giant)	SF	025 994	St Marys Pass	
velvet worms (blind)	FRes/Priv	028 965	St Patricks Head	
velvet worms (blind)	SF	039 918	Mt Elephant	
velvet worms (blind)	SF		Mt Elephant Wildlife Priority Area	WPA
velvet worms (blind)	SF / Priv	043 905	Mt Elephant area	
velvet worms (blind)	Private	044 905	Mt Elephant	
velvet worms (blind)	Private	045 910	Mt Elephant	
velvet worms (blind)	Private	046 908	Mt Elephant	
velvet worms (blind)	Crown	048 951	Irish Town Road	
velvet worms (blind)	SF	054 903	Little Marsh Creek	
velvet worms (blind)	Private	056 913	Connors Road	
velvet worms (blind)	SF	060 931	Connors Road	
velvet worms (blind)	SF	066 902	Hughes Creek	
velvet worms (giant)	SF	016 992	St Marys Pass	
velvet worms (giant)	Private	038 950	Margisons Creek	
velvet worms (giant)	Private	061 978	Banticks Creek	
velvet worms (giant)	SF / Priv	065 945	Aulich Track	
velvet worms (giant)	Private	067 947	Aulich Track	
velvet worms (giant)	Private	071 979	Four Mile Creek	
velvet worms (giant)	SF	084 934	'W' Creek	
coastal birds (hooded plover)		088 970	McIntyres Beach - survey site	breeding site
swift parrot	Private	074 980	Four Mile Creek	foraging area
swift parrot	Priv / Res	096 954	3 km north of Little Beach	foraging area
eagles (white-bellied sea-eagle)	Private	Confidential	Near Ironhouse Hill	nest
marine turtles (leatherback)			Beachwashed, Four Mile Ck, Falmouth	1969 record

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
velvet worms (blind and giant)	Eucalypt forest with rotting logs.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
swift parrot	Forest and woodland dominated by blue gum or black gum within 10 km of the coast, including slopes and ridges.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

JACOBS 5235

Known Localities of Species	Tenure	Map Grid	Locality	Notes
caddisfly *(Leptocerus souta)*	Private	370 545	Macquarie River at 'Fosterville'	
carabid beetle *(Catadromus lacordairei)*	Private	363 542	'Fosterville', west of Campbell Town	
eagles (wedge-tailed)	Private	Confidential	West of Burburys Sugarloaf	nest near
eagles (wedge-tailed)	Private	Confidential	Near Macquarie Tier	nest
eagles (wedge-tailed)	Private	Confidential	Near Burburys Sugarloaf	nest

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

JOHNSONS BAY (Venables) 3140

Known Localities of Species	Tenure	Map Grid	Locality	Notes
orange-bellied parrot	FReserve	161 067	Johnsons Head, Sandy Cape	migration '92
orange-bellied parrot	FReserve	116 119	Sandy Cape	historical '81
orange-bellied parrot	FReserve	110 220	Greenes Point, Sandy Cape	historical '81
orange-bellied parrot	FReserve	116 119	Sandy Cape Point	survey 1999

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
orange-bellied parrot	Migration feeding habitat: saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast, including vegetated offshore islands.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

KEITH 3643

Known Localities of Species	Tenure	Map Grid	Locality	Notes
freshwater snails *(Beddomeia angulata)*	Crwn/SF	602 300	Tributary Rapid Riv., S of Holder Road	

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.

giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes, and Arthur River system, below about 400 m alt.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

KELLEVIE 5626

Known Localities of Species	Tenure	Map Grid	Locality	Notes
southeast stag beetles (broad-toothed)	Private	608 622	Ephraim Ridges	
southeast stag beetles (broad-toothed)	Private	613 621	Stokes	
southeast stag beetles (broad-toothed)	SF	638 648	Iles Tier	
southeast stag beetles (broad-toothed)	SF	643 676	Back Run Hills	
southeast stag beetles (broad-toothed)	SF	654 693	South of Snake Ridge	
southeast stag beetles (broad-toothed)	SF	665 672	Throughout forestry coupe WT008A	coupe
southeast stag beetles (broad-toothed)	FReserve	675 661	Hospital Creek	
southeast stag beetles (broad-toothed)	SF	710 685	Mt Walter	
southeast stag beetles (broad-toothed)	SF	711 685	South of Mt Walter	
southeast stag beetles (broad-toothed)	SF	712 687	Mt Walter	
southeast stag beetles (broad-toothed)	SF	717 684	East of Mt Walter	
southeast stag beetles (broad-toothed)	FReserve	732 679	Cape Bernier	
southeast stag beetles (broad-toothed)	SF	732 680	Cape Bernier	
southeast stag beetles (broad-toothed)	FReserve	737 680	Cape Bernier	
southeast stag beetles (broad-toothed)	SF	742 697	Foxes Creek	
coastal birds (fairy tern)	Crown	709 601	Marion Beach	historic site
coastal birds (hooded plover)	Crown	709 601	Marion Beach - survey site	breeding site
coastal birds (hooded plover)	Reserve	720 647	Eagles Beach - survey site	breeding site
coastal birds (little tern)	Crown	709 601	Marion Beach - breeding site until 1977	historic site
coastal birds (little penguin)	Crown	709 594	Foredunes of Marion Beach	colony
swift parrot	Private	613 694	1 km south of Nugent	foraging area
swift parrot	Private	613 696	North of Iles Tier on Kellevie Road	foraging area
swift parrot	Private	694 609	1 km west of Marchwiel Marsh	foraging area
swift parrot	Private	700 608	0.5 km west of Marchwiel Marsh	foraging area
swift parrot	Private	707 626	1 km southwest of Franks Marsh	foraging area
swift parrot	Private	708 639	Franks Marsh	foraging area
swift parrot	Private	716 642	Eagles Beach	foraging area
swift parrot	Private	717 646	0.5 km southeast of Eagles Sugarloaf	foraging area
swift parrot	Private	718 647	Cockle Bay Track	foraging area
swift parrot	Private	718 651	Eagles Beach	foraging area
swift parrot	Private	719 648	Eagles Beach and surrounds	foraging area
swift parrot	Private	725 668	500 m northwest of Pine Creek Beach	foraging area
swift parrot	FReserve	732 678	1 km southeast of Mount Jacob	foraging area
swift parrot	FReserve	Confidential	Hellfire Bluff	nest area
eagles (wedge-tailed)	Private	Confidential	Northeast of Copping	nest
eagles (wedge-tailed)	SF	Confidential	Near Mount Walter	nest
eagles (wedge-tailed)	Private	Confidential	Ragged Tier area	nest
eagles (white-bellied sea-eagle)	FReserve	Confidential	Near Hellfire Bluff	nest

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
broad-striped ghost moth	Sedgeland in Wielangta State Forest.

southeast stag beetles (broad-toothed)	Dry or wet forest with rotting logs and litter on the ground.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
forty-spotted pardalote	Grassy dry forest and woodland with white gum within 3 km of the coast.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
coastal birds (fairy tern, little tern)	Sand or shingle beaches, unvegetated sites near estuaries and nearby lakes, and estuarine and offshore islands.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
swift parrot	Forest and woodland dominated by blue gum or black gum within 10 km of the coast, including slopes and ridges.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

KELLY 3432

Known Localities of Species	Tenure	Map Grid	Locality	Notes
orange-bellied parrot	FReserve	486 265	Cape Sorell	migration '92
coastal birds (fairy tern)	Reserve	506 250	Tiddys Beach	breeding site
coastal birds (fairy tern)	Reserve	518 254	Pilot Bay Beach	breeding site
coastal birds (fairy tern)	Reserve	487 263	Cape Sorell	
coastal birds (hooded plover)	Reserve	503 240	South of Charleys Beach	breeding site
coastal birds (hooded plover)	Reserve	506 248	Tiddys Beach	breeding site
coastal birds (hooded plover)	Reserve	515 254	Pilot Bay Beach	breeding site
coastal birds (hooded plover)	Reserve	518 203	Unnamed beach	breeding site
coastal birds (hooded plover, s-t shearwater)	Reserve	558 285	Ocean Beach	breeding sites
coastal birds (little penguin, s-t shearwater)	Crown	526 251	Entrance Island, Macquarie Heads	colony
coastal birds (short-tailed shearwater)	Reserve	493 252	Trumpeter Rock, Cape Sorell	colony
coastal birds (short-tailed shearwater)	Reserve	500 267	Hannants Bight	colony
coastal birds (short-tailed shearwater)	Reserve	514 263	Prater Rock (Pilot Bay)	colony
eagles (white-bellied sea-eagle)	Reserve	Confidential	Near Camp Point	nest
eagles (white-bellied sea-eagle)	Reserve	Confidential	Near Neck Island	nest
marine turtles (leatherback)	Crown		Swimming Macquarie Harbour entrance	1968 record
marine turtles (leatherback)	Crown		Beachwashed Ocean Beach, Strahan	1990 to 1992

Species May Occur in Suitable Habitat	Habitat to Survey
orange-bellied parrot	Migration feeding habitat: saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast, including vegetated offshore islands.
coastal birds (fairy tern)	Sand or shingle beaches, unvegetated sites near estuaries and nearby lakes, and estuarine and offshore islands.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

KEMPTON 5029

Known Localities of Species	Tenure	Map Grid	Locality	Notes
ptunarra brown butterfly	Private	134 998	Tranquillity, east of Coal Hills	colony
ptunarra brown butterfly	Private	139 999	Tranquillity, east of Coal Hills	colony

ptunarra brown butterfly	Private	143 993	Tranquillity, east of Coal Hills	colony
eagles (wedge-tailed)	Private	Confidential	Near Bens Hill	nest

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
ptunarra brown butterfly	Native grassland or woodland with more than 15% cover of tussock grass.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

KENNETH BAY (Venables) 3141

Known Localities of Species	Tenure	Map Grid	Locality	Notes
coastal birds (fairy tern)	Reserve	148 150	Mouth of Pedder River, Sandy Cape	breeding site
coastal birds (short-tailed shearwater)	Reserve	116 120	Sandy Cape area	colony
marine turtles (leatherback)	Com'w		Entangled 5 nm north of Sandy Cape	1978 record 1
marine turtles (leatherback)	Com'w		Entangled 5 nm north of Sandy Cape	1978 record 2

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
orange-bellied parrot	Migration feeding habitat: saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast, including vegetated offshore islands.
coastal birds (fairy tern)	Sand or shingle beaches, unvegetated sites near estuaries and nearby lakes, and estuarine and offshore islands.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

KERAUDREN 3052

Known Localities of Species	Tenure	Map Grid	Locality	Notes
orange-bellied parrot	FReserve	009 277	Albatross Island, south of King Island	migration '90
coastal birds (shy albatross)	FReserve	010 275	Albatross Island, south of King Island	breeding site
coastal birds (short-tailed shearwater)	FReserve	010 275	Albatross Island, south of King Island	colony
coastal birds (short-tailed shearwater)	FReserve		West and north coast of Hunter Island	colonies
coastal birds (white-fronted tern)	FReserve	009 275	Albatross Island, south of King Island	observed
coastal birds (fairy tern)	FReserve		Hunter Island coastline	breeding sites
coastal birds (little penguin)	FReserve	119 253	Cape Keraudren	colony
coastal birds (little penguin)	FReserve	165 220	Bears Island	colony
coastal birds (little penguin)	FReserve	009 275	Albatross Island, south of King Island	colony
eagles (white-bellied sea-eagle)	FReserve	Confidential	Near Cape Keraudren, Hunter Island	nest
eagles (white-bellied sea-eagle)	FReserve	Confidential	Near Swan Lagoon	nest
seals (Australian fur seal)	FReserve	009 275	Albatross Island, south of King Island	haul-out site

Species May Occur in Suitable Habitat	Habitat to Survey
keeled snail	Wet eucalypt forest on Three Hummock Island.
orange-bellied parrot	Migration feeding habitat: saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast, including vegetated offshore islands.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

KERFORD 6052

Known Localities of Species	Tenure	Map Grid	Locality	Notes
coastal birds (hooded plover)	Crown	130 198	Crystal Lagoon to Nautilus Cove, CBI	breeding site
coastal birds (hooded plover)	Crown	120 220	Kent Bay, Cape Barren Island	breeding site

Species May Occur in Suitable Habitat	Habitat to Survey
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.

KINDRED 4243

Known Localities of Species	Tenure	Map Grid	Locality	Notes
Australian grayling	Crown	364 384	River Forth at Sayers Ripple	
giant freshwater lobster	Private	214 379	Leven River, Foggs Bridge	
giant freshwater lobster	Private	263 328	West Gawler River	
giant freshwater lobster	Private	280 335	Gawler River	
giant freshwater lobster	Private	331 368	Little Claytons Rivulet	
giant freshwater lobster	HEC/Priv	370 305	Forth Road	
freshwater snails *(Beddomeia forthensis)*	Crown	365 301	Tributary Wilmot River above the Forth	type locality
freshwater snails *(Beddomeia hermansi)*	Private	317 305	Upper Viking Creek	type locality
freshwater snails *(Beddomeia waterhouseae)*	Private	333 368	Tributary of Little Claytons Rivulet	type locality
velvet worms (northwest)	SF	276 343	Gawler River area	

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of the Leven River and Forth River below the weir.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes, below about 400 m alt., esp. the Leven River.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
velvet worms (northwest)	Wet forest with rotting logs and woody ground litter.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

LAGOON 3240

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
orange-bellied parrot	Migration feeding habitat: saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast, including vegetated offshore islands.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

LAKE MACKENZIE 4438

Known Localities of Species	Tenure	Map Grid	Locality	Notes
pencil pine moth	SF	532 867	Nells Bluff	colony
eagle (nest)	SF	553 873	East of Nells Bluff	nest near

Species May Occur in Suitable Habitat	Habitat to Survey
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
pencil pine moth	Pencil pine forest.
ptunarra brown butterfly	Native grassland or woodland with more than 15% cover of tussock grass.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

LANCELOT 4028

Species May Occur in Suitable Habitat	Habitat to Survey
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

LANKA 5845

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes, below about 400 m altitude.
burrowing crayfish (Scottsdale)	Sediments of Ruby Creek line.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
dwarf galaxiid	Slow-flowing and still waters with aquatic vegetation.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

LATROBE 4443

Known Localities of Species	Tenure	Map Grid	Locality	Notes
Australian grayling	Crown	428 397	Don River, 1 km upstream of Don	
Australian grayling	Crown	495 352	Mersey River near Pig Island	
Australian grayling	Crown	497 355	Mersey River east of Pig Island	
giant freshwater lobster	Private	401 375	Bella-Macargee Falls	
giant freshwater lobster	Private	418 392	Don River	
giant freshwater lobster	Private	505 316	Caroline Creek	
giant freshwater lobster			Mersey River and tributaries	key catchm't
green and gold frog	Private	595 375	Thirlstone	
eagles (white-bellied sea-eagle)	Private	Confidential	Northwest of Latrobe	nest

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of Mersey River downstream of Kimberley.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes, below about 400 m alt., esp. the Mersey River.

green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

LAUNCESTON 5041

Known Localities of Species	Tenure	Map Grid	Locality	Notes
Australian grayling	HEC	071 114	South Esk River at Trevallyn Dam	
Australian grayling	Reserve	107 123	South Esk River at mouth	
broad-striped ghost moth			Launceston - no site details given	
green and gold frog	FReserve	062 183	Tamar Reserve	
green and gold frog	Private	069 151	Eccleston Road, Riverside	
green and gold frog	Private	085 144	Riverside	
green and gold frog	Private	100 122	Trevallyn	
green and gold frog	Private	110 192	Rocherlea	
green and gold frog	Private	133 117	Newstead	
green and gold frog	Private	140 136	Ravenswood	
green and gold frog	Private	154 126	Waverley	
freshwater snails *(Beddomeia launcestonensis)*	Reserve	097 114	First Basin, Cataract Gorge	type locality
burrowing crayfish (Mt Arthur)	SF	191 199	Prossers Forest	
spiders (Plomleys trapdoor)	Reserve	102 120	Between Kings Bridge and First Basin	type locality
Jungermans snail	Reserve	098 117	Cataract Gorge	
eagles (wedge-tailed)	SF	Confidential	Near Dido Hill	nest
eagles (white-bellied sea-eagle)	Private	Confidential	South of Legana	nest
eagles (white-bellied sea-eagle)	Private	Confidential	Near Cormiston Creek	nest
eagles (white-bellied sea-eagle)	Reserve		Tamar River	key foraging
coastal birds (migratory waders)	Reserve		Tamar River mudflats and shoreline	foraging site

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of South Esk River.
broad-striped ghost moth	Shrubby woodland and sedgeland.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
burrowing crayfish (Mt Arthur)	Moist seeps, flat swampy areas and stream banks, where soil has moderate to high clay content, E of the Tamar River.
spiders (Plomleys trapdoor)	Moss-covered boulders.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

LEA 4040

Known Localities of Species	Tenure	Map Grid	Locality	Notes
ptunarra brown butterfly	Private	010 100	Medway River Colony	colony
ptunarra brown butterfly	Private	035 035	Cattley Plain	colony
ptunarra brown butterfly	Prv/Crwn	074 015	Vale of Belvoir	colony
ptunarra brown butterfly	Crown	150 005	Iris River	colony

Species May Occur in Suitable Habitat	Habitat to Survey
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes, below about 400 m altitude.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
freshwater snails (*Beddomeia lodderae*)	Localised in River Leven.
ptunarra brown butterfly	Native grassland or woodland with more than 15% cover of tussock grass.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

LEAKE 5634

Known Localities of Species	Tenure	Map Grid	Locality	Notes
ptunarra brown butterfly	Private	612 478	Stonehouse drive (Ladies Mile Marsh)	colony
ptunarra brown butterfly	Private	613 475	Ladies Mile Marsh	colony
ptunarra brown butterfly	Private	642 449	Wet Gum Swamp	colony
ptunarra brown butterfly	Private	643 468	Junct. of Long Marsh, Lake Leake Road	colony
ptunarra brown butterfly	SF	645 410	Parramores Swamp	colony
ptunarra brown butterfly	Private	646 481	Lake Road	colony
ptunarra brown butterfly	Private	648 492	Daisymead Marsh	colony
ptunarra brown butterfly	Private	652 458	Flinty Gravel Pit, Macquarie River	colony
ptunarra brown butterfly	Private	678 454	West of Lake Yalleena	colony
ptunarra brown butterfly	Private	687 453	East of Lake Yalleena	colony
Swan galaxias	SF	Confidential	Headwaters, Swan and Macquarie Rivers	translocated
Swan galaxias	SF / FRes	Confidential	Headwaters, Swan and Macquarie Rivers	translocated
eagles (wedge-tailed)	SF	Confidential	Northeast of Mount Morriston	nest
eagles (wedge-tailed)	SF	Confidential	Near Parremores Swamp	nest (Tucker)
eagles (wedge-tailed)	SF	Confidential	Near Eagle Ridge	nest
eagles (white-bellied sea-eagle)	Private	Confidential	Near Lake Leake area	nest

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
ptunarra brown butterfly	Native grassland or woodland with more than 15% cover of tussock grass.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
Swan galaxias	In catchment upstream of map sites.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

LEGGE 4221

Species May Occur in Suitable Habitat	Habitat to Survey
orange-bellied parrot	Breeding and migration feeding habitat: buttongrass plains with eucalypt forest patches, saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

LEMONT 5431

Known Localities of Species	Tenure	Map Grid	Locality	Notes
great crested grebe	Private	512 180	Lagoons in the Lemont area	foraging area
ptunarra brown butterfly	Private	425 185	Green Hill	colony
ptunarra brown butterfly	Private	427 190	Green Hill	colony
ptunarra brown butterfly	Private	429 158	Fitchs Hill	colony
ptunarra brown butterfly	Private	435 170	Little China Tier	colony
ptunarra brown butterfly	Private	435 185	Little China Tier	colony
eagles (wedge-tailed)	Private	Confidential	Near Kittys Rivulet	nest near
eagles (wedge-tailed)	Private	Confidential	Near Kittys Rivulet	nest
eagles (wedge-tailed)	Private	Confidential	Near Towser Hill	nest
eagles (wedge-tailed)	Private	Confidential	Near Goat Gully	nest near

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
great crested grebe	Lakes, rivers and estuaries.
ptunarra brown butterfly	Native grassland or woodland with more than 15% cover of tussock grass.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

LEPRENA 4818

Known Localities of Species	Tenure	Map Grid	Locality	Notes
cave ecosystem *(Goedetrechus mendumae, Hickmanoxyomma cavaticum, Idacarabus troglodytes)*	Reserve	Confidential	Ida Bay area	
cave ecosystem *(Hickmanoxyomma cavaticum)*	SF	Confidential	North Lune area	
swift parrot	Reserve	929 897	Ida Bay area	foraging area
swift parrot	Reserve	958 897	2 km southwest of Southport	foraging area
eagles (white-bellied sea-eagle)	Reserve	Confidential	Southport Bluff area	nest
coastal birds (short-tailed shearwater)	Crown	007 860	Southport Island	colony

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
broad-striped ghost moth	Sedgeland at Ida Bay - needs survey.
cave-dwelling invertebrates	Ida Bay and other karst areas.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
southeast stag beetles (Mt Mangana)	Wet forest containing decaying logs, so survey especially around Ida Bay area.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
swift parrot	Forest and woodland dominated by blue gum or black gum within 10 km of the coast, including slopes and ridges.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

LEVENTHORPE 5856

Known Localities of Species	Tenure	Map Grid	Locality	Notes
New Holland mouse	Crown	895 636	3 km southwest of Walkers Lookout	colony
New Holland mouse	Private	895 624	4 km north of Hays Hill	colony
forty-spotted pardalote	Reserve	863 680	Northeast of Brougham Sugarloaf	colony F 74
forty-spotted pardalote	Reserve	867 686	Northeast of Brougham Sugarloaf	colony F 74
forty-spotted pardalote	Prv/Crwn	923 665	Walkers Gully, Darling Range	colony F 75
coastal birds (hooded plover)	Reserve	812 630	Long Point Beach - survey site	breeding site
coastal birds (migratory waders)		836 614	Long Point to Bluff Farm Point	feed & roost
eagles (wedge-tailed)	Reserve	Confidential	Near Brougham Sugarloaf	nest

Species May Occur in Suitable Habitat	Habitat to Survey
Bass Strait wombat	Heath, scrub, woodland and pasture.
Australian grayling	Lower and middle reaches of coastal rivers.
forty-spotted pardalote	Grassy dry forest and woodland with white gum *(Eucalyptus viminalis)*.
New Holland mouse	Dry coastal heathland and open heathy forest.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
burrowing crayfish (Flinders Island)	Seepages and ferny gullies around Leventhorpe Creek and Darling Range.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

LEWIS 3824

Known Localities of Species	Tenure	Map Grid	Locality	Notes
coastal birds (hooded plover)	Reserve	828 412	Unnamed beach near Cowrie Beach	breeding site
coastal birds (hooded plover)	Reserve	846 410	Big Beach	breeding site

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
orange-bellied parrot	Breeding and migration feeding habitat: buttongrass plains with eucalypt forest patches, saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

LIENA 4239

Known Localities of Species	Tenure	Map Grid	Locality	Notes
cave ecosystem *(Hickmanoxyomma gibbergunyar)*	FRes/SF/ Private	Confidential	Mole Creek area	
ptunarra brown butterfly	Private	000 200	East Middlesex Plains	colony
giant freshwater lobster			Mersey River and tributaries	key catchm't

Species May Occur in Suitable Habitat	Habitat to Survey
cave-dwelling invertebrates	Mole Creek caves and other karst areas.
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes, below about 400 m altitude.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.

ptunarra brown butterfly	Native grassland or woodland with more than 15% cover of tussock grass.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

LIFFEY 4838

Known Localities of Species	Tenure	Map Grid	Locality	Notes
green and gold frog	Private	895 868	Myrtle Creek Road, Liffey	
eagles (wedge-tailed)	Private	Confidential	Near Mountain Vale Hill	nest near
eagles (wedge-tailed)	Private	Confidential	Near Mountain Vale Hill	nest

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

LILEAH 3446

Known Localities of Species	Tenure	Map Grid	Locality	Notes
giant freshwater lobster	Private		Allen Creek	
giant freshwater lobster			Black River, Dip River and tributaries	key catchm'ts
freshwater snails (*Beddomeia wiseae*)	Private	443 659	Blizzards Creek on Youngs Road	type locality

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes, below about 400 m alt., esp. Dip River and Black River.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
keeled snail	Forest with deep damp litter, W half of map.
velvet worms (northwest)	Wet forest with rotting logs and woody ground litter.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

LILY 3241

Species May Occur in Suitable Habitat	Habitat to Survey
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
orange-bellied parrot	Migration feeding habitat: saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast, including vegetated offshore islands.

quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

LILYDALE 5043

Known Localities of Species	Tenure	Map Grid	Locality	Notes
giant freshwater lobster	Reserve	178 355	Lilydale Falls and to the east	
giant freshwater lobster	Private	198 317	Mt Arthur (dam)	
giant freshwater lobster			Pipers River near Lilydale	
green and gold frog	Private	113 369	Bangor	
burrowing crayfish (Mt Arthur)	Reserve	176 356	Lilydale Falls	
burrowing crayfish (Mt Arthur)	Private	180 330	Lilydale	
burrowing crayfish (Mt Arthur)	Private	181 307	Tributary of Rocky Creek, Lilydale Rd	
burrowing crayfish (Mt Arthur)	Private	188 306	2 km south of Lilydale	
burrowing crayfish (Mt Arthur)	Private	191 302	3 km southeast of Lilydale	
burrowing crayfish (Mt Arthur)	Private	194 301	3 km southeast of Lilydale	
eagles (wedge-tailed)	Private	Confidential	Near Blairgowrie Falls	nest
eagles (wedge-tailed)	Private	Confidential	Near Mount Dismal	nest
eagles (white-bellied sea-eagle)	Reserve		Tamar River and estuaries	key foraging

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes, below about 400 m altitude.
'Skemps' snail	Wet sclerophyll gullies with creek lines.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
burrowing crayfish (Mt Arthur)	Moist seeps, flat swampy areas and stream banks, where soil has moderate to high clay content.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

LIMEKILN 3829

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers, especially the Gordon River.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

LISDILLON 5831 (on Lisdillon-Mayfield sheet)

Known Localities of Species	Tenure	Map Grid	Locality	Notes
Australian grayling	Crown	820 180	Lisdillon Rivulet, Tasman Highway	
coastal birds (fairy tern, hooded plover)	Crown	832 174	Mouth of river, Lisdillon Beach	breeding sites
coastal birds (fairy tern)	Crown	823 146	Little Swanport, south of river mouth	breeding site
coastal birds (migratory waders)			Little Swanport / Lisdillon Rivulet	feed & roost
swift parrot	Private	821 153	Saltworks Beach	foraging area
eagles (wedge-tailed)	Private	Confidential	Near Corner Hill	nest near
eagles (white-bellied sea-eagle)	Private	Confidential	Near Point Bailly	nest

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
forty-spotted pardalote	Grassy dry forest and woodland with white gum within 3 km of the coast.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
New Holland mouse	Dry coastal heathland and open heathy forest.
coastal birds (fairy tern)	Sand or shingle beaches, unvegetated sites near estuaries and nearby lakes, and estuarine and offshore islands.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
swift parrot	Forest and woodland dominated by blue gum or black gum within 10 km of the coast, including slopes and ridges.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

LISLE 5243

Known Localities of Species	Tenure	Map Grid	Locality	Notes
giant freshwater lobster	Private	315 333	Little Forester River	key catchm't
giant freshwater lobster	Private	390 360	Little Brid River	
green and gold frog	Private	220 330	Doaks Road, east of Lilydale	
burrowing crayfish (Mt Arthur)	Private	229 329	Mt Arthur Road	
burrowing crayfish (Mt Arthur)	Private	235 325	Mt Arthur Road	
burrowing crayfish (Mt Arthur)	SF / Priv	236 326	Doaks Road	
burrowing crayfish (Mt Arthur)	SF	237 322	Mt Arthur Road	
burrowing crayfish (Mt Arthur)	SF	238 321	Mt Arthur Road	
burrowing crayfish (Mt Arthur)	SF	243 374	Lone Star Creek	
burrowing crayfish (Mt Arthur)	SF	244 319	2 km north of Mt Arthur	
burrowing crayfish (Mt Arthur)	SF	244 321	Mt Arthur Road	
burrowing crayfish (Mt Arthur)	SF	246 320	Mt Arthur Road	
burrowing crayfish (Mt Arthur)	SF	247 319	Mt Arthur Road	
burrowing crayfish (Mt Arthur)	SF	249 317	2 km north of Mt Arthur	
burrowing crayfish (Mt Arthur)	SF	250 313	Mt Arthur Road	
burrowing crayfish (Mt Arthur)	SF	250 316	Mt Arthur Road	
burrowing crayfish (Mt Arthur)	SF	252 311	Mt Arthur Road	
burrowing crayfish (Mt Arthur)	SF	255 353	1 km west of Lisle	
burrowing crayfish (Mt Arthur)	SF	257 338	Bessels Road	
burrowing crayfish (Mt Arthur)	SF	258 347	1.5 km west of Lisle	
burrowing crayfish (Mt Arthur)	SF	258 350	1.5 km west of Lisle	
burrowing crayfish (Mt Arthur)	SF	259 355	1 km west of Lisle	
burrowing crayfish (Mt Arthur)	SF	260 384	Tobacco Creek	
burrowing crayfish (Mt Arthur)	Private	262 304	2 km west of Mt Arthur	
burrowing crayfish (Mt Arthur)	SF	263 354	1 km west of Lisle	
burrowing crayfish (Mt Arthur)	SF	264 350	1 km west of Lisle	
burrowing crayfish (Mt Arthur)	SF	265 335	Bessels Road	
burrowing crayfish (Mt Arthur)	SF	266 329	2.5 km southwest of Lisle	
burrowing crayfish (Mt Arthur)	SF	266 351	1 km west of Lisle	
burrowing crayfish (Mt Arthur)	SF	268 347	Lisle	
burrowing crayfish (Mt Arthur)	SF	270 314	Lisle Creek	
burrowing crayfish (Mt Arthur)	SF	270 327	Shillady Creek	
burrowing crayfish (Mt Arthur)	SF	270 350	Lisle	

burrowing crayfish (Mt Arthur)	SF	272 348	Lisle	
burrowing crayfish (Mt Arthur)	SF	274 340	1 km south of Lisle	
burrowing crayfish (Mt Arthur)	SF	274 346	Lisle	
burrowing crayfish (Mt Arthur)	SF	275 337	Lisle Creek	
burrowing crayfish (Mt Arthur)	SF	277 379	4 km south of Nabowla	
burrowing crayfish (Mt Arthur)	Private	289 300	5 km east of Mt Arthur	
burrowing crayfish (Mt Arthur)	SF	298 342	2 km east of Lisle	
burrowing crayfish (Mt Arthur)	SF / Priv	305 345	3 km east of Lisle	
burrowing crayfish (Mt Arthur)	SF	363 376	5 km east of Nabowla	
burrowing crayfish (Mt Arthur)	SF	363 378	East of Sideling Range	
burrowing crayfish (Mt Arthur)	SF	367 370	5 km southeast of Nabowla	
burrowing crayfish (Mt Arthur)	SF	368 375	East of Sideling Range	
burrowing crayfish (Mt Arthur)	SF	371 376	6 km southeast of Nabowla	
burrowing crayfish (Mt Arthur)	SF / Priv	375 369	Little Brid River	
burrowing crayfish (Mt Arthur)	Private	398 350	Forester River Farms	Doran 1999
northeast forest snail	Private	233 329	Doaks Road, Mt Arthur	
northeast forest snail	SF	248 316	Mt Arthur	
northeast forest snail	SF	250 309	Mt Arthur	
northeast forest snail	Private	255 309	Lone Star Road, Mt Arthur	
northeast forest snail	SF	262 359	Bow Tie Block	
northeast forest snail	SF	340 343	Carins Creek Sideling	
northeast forest snail	SF	357 330	Weelaty, Sideling Range	
northeast forest snail	SF	361 304	Goftons Creek Sideling	

Species May Occur in Suitable Habitat	**Habitat to Survey**
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes, below about 400 m alt., esp. Little Forester River and Brid River.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
burrowing crayfish (Mt Arthur)	Moist seeps, flat swampy areas and stream banks, where soil has moderate to high clay content.
northeast forest snail	Rainforest, mixed forest or wet forest containing rainforest elements.
'Skemps' snail	Wet sclerophyll gullies with creek lines.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

LIVINGSTONE 3438

Known Localities of Species	**Tenure**	**Map Grid**	**Locality**	**Notes**
caddisfly *(Ramiheithrus kocinus)*	FRes/SF	400 870	Small creek near Corinna	
eagles (white-bellied sea-eagle)	Reserve	Confidential	Near Donnellys Crossing, Pieman River	nest

Species May Occur in Suitable Habitat	**Habitat to Survey**
Australian grayling	Pieman River (middle and lower reaches).
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.

eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

LLOYD 4825

Known Localities of Species	Tenure	Map Grid	Locality	Notes
eagles (wedge-tailed)	SF	Confidential	Near Holness Hill	nest
eagles (wedge-tailed)	SF	Confidential	Near Crosswells Flat	nest near
eagles (wedge-tailed)	FReserve	Confidential	Near Myrtle Falls Creek	nest near

Species May Occur in Suitable Habitat	Habitat to Survey
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

LOCCOTA 5754

Known Localities of Species	Tenure	Map Grid	Locality	Notes
coastal birds (little penguin, s-t shearwater)	TA	785 415	Coastline of Chappell Island	colonies
coastal birds (little penguin)	TA	773 419	Little Chappell Island	colony
coastal birds (short-tailed shearwater)	TA	788 413	Mount Chappell, Chappell Island	colony
eagles (white-bellied sea-eagle)	TA	Confidential	Near Chappell Island	nest
eagles (wedge-tailed)	FReserve	Confidential	Near Lovetts Hill	nest near
eagles (wedge-tailed)	FReserve	Confidential	Near Mount Razorback	nest near
eagles (wedge-tailed)	FReserve	Confidential	Near Mount Belstead	nest near
burrowing crayfish (Flinders Island)	FReserve	912 490	Fotheringham Creek and Strzlecki Peak	Doran 1999

Species May Occur in Suitable Habitat	Habitat to Survey
Bass Strait wombat	Heath, scrub, woodland and pasture.
forty-spotted pardalote	Grassy dry forest and woodland with white gum *(Eucalyptus viminalis)*.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.
burrowing crayfish (Flinders Island)	Wet, fern gullies with dense vegetation.

LODDON 4032

Species May Occur in Suitable Habitat	Habitat to Survey
quoll (spotted-tailed, eastern) interfaces.	All wetter forest types, coastal heath and bush-pasture
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

LODI 6035 (on Friendly-Lodi sheet)

Known Localities of Species	Tenure	Map Grid	Locality	Notes
Australian grayling	Res/Crwn		Apsley River	
New Holland mouse	Private	049 512	Rogers Hill	colony
coastal birds (hooded plover)	FReserve		Friendly Beaches and Isaacs Point	breeding site
coastal birds (hooded plover)	FReserve		Courland Bay and Butlers Point	breeding site
coastal birds (migratory waders)	Reserve		Moulting Lagoon Game Reserve	foraging site

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of Apsley River.
forty-spotted pardalote	Grassy dry forest and woodland with white gum within 3 km of the coast.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.

New Holland mouse	Dry coastal heathland and open heathy forest.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
swift parrot	Forest and woodland dominated by blue gum or black gum within 10 km of the coast, including slopes and ridges.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

LOGAN 5955

Known Localities of Species	Tenure	Map Grid	Locality	Notes
cave ecosystem *(Parvotettix rangaensis, Echinodilla cavaticus)*	Private	Confidential	Flinders Island	
dwarf galaxiid	Crown	011 552	Chew Tobacco Creek	
green and gold frog	Private	076 504	Lime Pit Road	
coastal birds (fairy tern)	Reserve	108 525	Logan Lagoon	breeding site
coastal birds (fairy tern)	Res/Crwn	901 600	Cameron Inlet	historical
coastal birds (little tern)	Res/Crwn	901 600	Cameron Inlet	breeding
coastal birds (hooded plover)	Reserve	106 570	Planter Beach	breeding site
coastal birds (migratory waders)	Reserve		Cameron Inlet and Logan Lagoon	feed & roost
eagles (wedge-tailed)	Crown	Confidential	Near The Dutchman	nest
eagles (white-bellied sea-eagle)	Reserve	Confidential	Near Cameron Inlet, Flinders Island	nest

Species May Occur in Suitable Habitat	Habitat to Survey
Bass Strait wombat	Heath, scrub, woodland and pasture.
Australian grayling	Lower and middle reaches of coastal rivers.
forty-spotted pardalote	Grassy dry forest and woodland with white gum *(Eucalyptus viminalis)*.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
coastal birds (fairy tern)	Sand or shingle beaches, unvegetated sites near estuaries and nearby lakes, and estuarine and offshore islands.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

LONGFORD 5039

Known Localities of Species	Tenure	Map Grid	Locality	Notes
caddisfly *(Hydroptila scamandra)*	Private	198 978	South Esk River near Evandale	
caddisfly *(Oecetis gilva)*	Private	198 979	South Esk River near Evandale	
green and gold frog	Private	036 950	Woodstock Lagoon	
green and gold frog	Private	046 940	Woodstock Lagoon	
green and gold frog	Private	090 974	South Esk Road, Longford	
green and gold frog	Private	096 965	South Esk Road, Longford	
green and gold frog	Private	100 950	Longford area	
green and gold frog	Private	102 964	South Esk Road, Longford	
green and gold frog	Private	143 972	Perth area	
green and gold frog	Private	195 975	Pateena Bridge, Evandale	

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.

quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

LONGLEY 5024

Known Localities of Species	Tenure	Map Grid	Locality	Notes
Mt Wellington land snail	FReserve	186 471	Milles Track, Snake Plains	
Mt Wellington land snail	FReserve	195 475	Milles Track	
Mt Wellington land snail	FReserve	197 482	Milles Track, The Springs	
Mt Wellington land snail	Private	212 475	Fern Tree	

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	North West Bay River (middle and lower reaches).
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
southeast stag beetles (Mt Mangana)	Wet forest containing decaying logs.
Mt Wellington land snail	Subalpine wet eucalypt forest.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
swift parrot	Forest and woodland dominated by blue gum or black gum within 10 km of the coast, including slopes and ridges.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

LONNAVALE 4824

Known Localities of Species	Tenure	Map Grid	Locality	Notes
southeast stag beetles (Mt Mangana)	SF	860 465	Lorkins Road	
eagles (wedge-tailed)	SF	Confidential	Near Kemps Creek	nest
eagles (wedge-tailed)	SF	Confidential	Near Rimons Hill	nest

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Huon River (middle and lower reaches).
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
southeast stag beetles (Mt Mangana)	Wet forest containing decaying logs.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

LOONGANA 4041

Known Localities of Species	Tenure	Map Grid	Locality	Notes
ptunarra brown butterfly	Private	010 110	Medway River	colony

Species May Occur in Suitable Habitat	Habitat to Survey
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes, below about 400 m alt., esp. the River Leven.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
freshwater snails *(Beddomeia lodderae)*	The River Leven needs a survey.
ptunarra brown butterfly	Native grassland or woodland with more than 15% cover of tussock grass.

quoll (spotted-tailed, eastern)			All wetter forest types, coastal heath and bush-pasture interfaces.	
eagle (nest)			Large tracts (more than 10 ha) of eucalypt or mixed forest.	

LOORANA 2258

Known Localities of Species	Tenure	Map Grid	Locality	Notes
King Island brown thornbill	Private	380 810	Private garden at Loorana	caught 1971
coastal birds (hooded plover)	Reserve		Beaches from Pass River to Porky Bay	breeding sites
marine turtles (leatherback)	Crown		Entangled off Porkys, King Island	1988 to 1990

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
King Island brown thornbill	Dry forest, woodland, scrubland.
orange-bellied parrot	Migration feeding habitat: saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast, including vegetated offshore islands.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.

LOUISA 4418

Known Localities of Species	Tenure	Map Grid	Locality	Notes
orange-bellied parrot	FReserve	422 844	Buoy Creek	historical '81

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
orange-bellied parrot	Breeding and migration feeding habitat: buttongrass plains with eucalypt forest patches, saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

LOW HEAD 4845

Known Localities of Species	Tenure	Map Grid	Locality	Notes
seals (Australian fur seal)			Tenth Island, off Low Head	breeding site
seals (NZ fur seal)			Tenth Island, off Low Head	haul-out site
coastal birds (hooded plover)	Com/Priv	860 565	Bellbuoy Beach	breeding site
coastal birds (migratory waders)	Com / P	827 545	Bellbuoy Beach, Pilots Bay	feed & roost
coastal birds (migratory waders)		844 503	Mudflats, George Town sewerage works	feed & roost
coastal birds (little penguin)	Reserve		Coastline around Kelso	colony
coastal birds (little penguin)	Reserve	548 925	Low Head Point and all surrounds	colony
coastal birds (little penguin)	Reserve	823 545	Low Head Penguin Viewing Site	colony
coastal birds (little penguin)	Res/Priv		Low Head to Sheoak Point	colony

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.

quoll (spotted-tailed, eastern)			All wetter forest types, coastal heath and bush-pasture interfaces.	
eagle (nest)			Large tracts (more than 10 ha) of eucalypt or mixed forest.	

LOYETEA 4042

Known Localities of Species	Tenure	Map Grid	Locality	Notes
giant freshwater lobster	FRes/Priv	166 276	Gunns Plain Cave	key site
eagles (wedge-tailed)	Crown	Confidential	Near Mount Housetop	nest

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Leven River (middle and lower parts).
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes, below about 400 m alt., esp. River Leven and Gunns Plains.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
freshwater snails *(Beddomeia lodderae)*	The River Leven needs a survey.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

LUINA 3640

Known Localities of Species	Tenure	Map Grid	Locality	Notes
freshwater snails *(Beddomeia bellii, B. hullii, Phrantela marginata)*	Crown	614 073	Thirteen Mile Creek, road junction	
freshwater snails *(Beddomeia bellii, Phrantela marginata)*	Crown	624 078	Thirteen Mile Creek, road junction	
eagles (wedge-tailed)	SF	Confidential	Near Waratah	nest near
eagles (wedge-tailed)	Crown	Confidential	Near Champion Heath	nest

Species May Occur in Suitable Habitat	Habitat to Survey
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
ptunarra brown butterfly	Native grassland or woodland with more than 15% cover of tussock grass.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

LYME REGIS 5848

Known Localities of Species	Tenure	Map Grid	Locality	Notes
green and gold frog	Private	845 822	Three Mile Hill	
coastal birds (hooded plover, little tern, fairy tern)	Reserve	895 858	Little Musselroe Bay and Spit	breeding sites
coastal birds (hooded plover, little tern, fairy tern)	Reserve	793 896	Coastline around Cape Portland	breeding sites and hot spot
coastal birds (fairy tern)	Crown	790 863	Baynes Island	observed
coastal birds (hooded plover, short-tailed shearwater, little penguin)	Private	935 895	Swan Island	breeding sites
coastal birds (white-fronted tern)	Private	935 895	Swan Island	observed
coastal birds (migratory waders)		800 888	Cape Portland and Little Musselroe	feed & roost

coastal birds (migratory waders)	Reserve	820 857	Tregaron Lagoon	feed & roost
coastal birds (migratory waders)	Private	935 895	Swan Island	feed & roost
coastal birds (little penguin, s-t shearwater)	Crown	911 911	Little Swan Island	colonies
coastal birds (little penguin, s-t shearwater)	FReserve	820 912	Foster Island	colonies
coastal birds (little penguin)	Crown	790 863	Baynes Island	colonies
coastal birds (little penguin)		788 873	Maclean Island	colony
marine turtles (leatherback)	Crown		Sighted swimming off Cape Portland	no date

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
dwarf galaxiid	Slow-flowing and still waters with aquatic vegetation.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
New Holland mouse	Dry coastal heathland and open heathy forest.
coastal birds (fairy tern, little tern)	Sand or shingle beaches, unvegetated sites near estuaries and nearby lakes, and estuarine and offshore islands.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

LYMINGTON 5021

Known Localities of Species	Tenure	Map Grid	Locality	Notes
southeast stag beetles (Mt Mangana)	Private	124 128	Garden Island Creek	
southeast stag beetles (Mt Mangana)	Private	155 185	Woodbridge	
swift parrot	Private	007 106	Near Mt Esperance on Sledge Hill Road	foraging area
swift parrot	Priv / Res	008 177	Petcheys Bay	foraging area
swift parrot	Priv / Res	011 172	Petcheys Bay	foraging area
swift parrot	Priv / Res	019 168	Wheatleys Bay	foraging area
swift parrot	Priv / Res	020 133	Brooks Bay	foraging area
swift parrot	Priv / Res	034 155	Black Jack Ridge	foraging area
swift parrot	Priv / Res	036 153	Near Poverty Point, Cygnet Coast Road	foraging area
swift parrot	Priv / Res	065 186	Near Langdons Point, Lymington Road	foraging area
swift parrot	Private	118 125	Garden Island Creek	foraging area
swift parrot	Private	119 120	Garden Island Sands	foraging area
swift parrot	Private	123 123	Garden Island Creek	foraging area
swift parrot	Private	124 125	Garden Island Creek	foraging area
eagles (wedge-tailed)	Private	Confidential	Near Mt Windsor	nest near

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
forty-spotted pardalote	Grassy dry forest and woodland with white gum within 3 km of the coast.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
southeast seastars (live-bearing seastar)	Intertidal rocky areas, on sandstone.
southeast stag beetles (Mt Mangana)	Wet forest containing decaying logs.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.

swift parrot	Forest and woodland dominated by blue gum or black gum within 10 km of the coast, including slopes and ridges.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

MACONOCHIE 4223

Known Localities of Species	Tenure	Map Grid	Locality	Notes
Pedder galaxias	FReserve	Confidential	Pebbly Creek area	natural pop.
Pedder galaxias	FReserve	Confidential	Pebbly Creek area	natural pop.

Species May Occur in Suitable Habitat	Habitat to Survey
Pedder galaxias	Tributaries of the Lake Pedder impoundment.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

MACQUARIE ISLAND (topo. map)

Known Localities of Species	Tenure	Map Grid	Locality	Notes
Macquarie Island birds (MI rail)	FReserve		Tussock areas of Macquarie Island	now extinct
Macquarie Island birds (MI parakeet)	FReserve		All over Macquarie Island	now extinct
Macquarie Island birds (Antarctic tern)	FReserve		Peaty slopes of Macquarie Island	breeding site
Macquarie Island birds (black-browed alb.)	FReserve		Peaty slopes of Macquarie Island	breeding site
Macquarie Island birds (blue petrel)	FReserve		Slopes and rockstacks of Macquarie Is.	breeding site
Macquarie Island birds (fairy prion)	FReserve		Peaty slopes of Macquarie Island	breeding site
Macquarie Island birds (grey-headed alb.)	FReserve		Peaty slopes of Macquarie Island	breeding site
Macquarie Island birds (light-mantled alb.)	FReserve		Peaty slopes of Macquarie Island	breeding site
Macquarie Island birds (MI shag)	FReserve		Macquarie Island coastline	breeding site
Macquarie Island birds (wandering albatross)	FReserve		Slopes and flats of Macquarie Island	breeding site
Macquarie Island birds (white-headed petrel)	FReserve		Peaty slopes of Macquarie Island	breeding site
Macquarie Island birds (Wilsons storm pet.)	FReserve		Peaty slopes of Macquarie Island	breeding site
seals (sub-Antarctic fur seal, sub-Antarctic fur seal 'complex', Antarctic fur seal, southern elephant seal)	FReserve		Macquarie Island coastline including the isthmus	breeding sites
seals (NZ fur seal, leopard seal, Hookers sea-lion)	FReserve		Macquarie Island coastline including the isthmus	haul-out sites

MAINWARING 3725 (on Veridian-Mainwaring sheet)

Species May Occur in Suitable Habitat	Habitat to Survey
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
orange-bellied parrot	Breeding and migration feeding habitat: buttongrass plains with eucalypt forest patches, saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
coastal birds (fairy tern)	Sand or shingle beaches, unvegetated sites near estuaries and nearby lakes, and estuarine and offshore islands.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

MAJORS

Species May Occur in Suitable Habitat	Habitat to Survey
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.
cave-dwelling invertebrates	Caves and other karst in the Loddon Range.

MALLANNA (Henty) 3534

Known Localities of Species	Tenure	Map Grid	Locality	Notes
coastal birds (hooded plover)	Reserve	564 333	Ocean Beach	breeding site
coastal birds (migratory waders)	Reserve	563 310	Ocean Beach	feed & roost
eagles (white-bellied sea-eagle)	Reserve	Confidential	Near Henty	nest
eagles (white-bellied sea-eagle)	SF	Confidential	Near Henty	nest

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
orange-bellied parrot	Migration feeding habitat: saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast, including vegetated offshore islands.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

MANGANA 5639

Known Localities of Species	Tenure	Map Grid	Locality	Notes
eagles (wedge-tailed)	SF	Confidential	Near Fords Gully	nest

Species May Occur in Suitable Habitat	Habitat to Survey
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

MARRAWAH 3046

Known Localities of Species	Tenure	Map Grid	Locality	Notes
keeled snail	SF	146 630	Welcome Swamp	
keeled snail	SF	169 620	Welcome Swamp	
keeled snail	SF	185 644	Bond Tier	
orange-bellied parrot	FReserve	991 652	West Point	migration '99
coastal birds (hooded plover)	Res/Crwn	006 626	Mawsons Bay - survey site	breeding site
coastal birds (hooded plover)	Crown	047 687	Green Point Beach and Green Point	breeding site
coastal birds (hooded plover)	Reserve	990 645	West Point and nearby sandy beaches	breeding site
coastal birds (short-tailed shearwater)	Crown	018 693	Green Point	colony
coastal birds (short-tailed shearwater)	Reserve	012 673	Pavement Point	colony
eagles (wedge-tailed)	Private	Confidential	Near Redpa	nest
marine turtles (leatherback)	Crown		Regularly entangled west of West Point	1988 to 1990

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.

giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes, below 400 m alt., esp. the Welcome River.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur. Key habitat site.
keeled snail	Forest with deep damp litter.
orange-bellied parrot	Migration feeding habitat: saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast, including vegetated offshore islands.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

MATHINNA 5640

Known Localities of Species	Tenure	Map Grid	Locality	Notes
eagles (wedge-tailed)	SF	Confidential	Near Jones Lookout	nest
eagles (wedge-tailed)	SF	Confidential	Near Sheeptail Creek	nest near
eagles (wedge-tailed)	SF	Confidential	Near Mathinna Rocks	nest

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

MAURICE 5442

Known Localities of Species	Tenure	Map Grid	Locality	Notes
giant freshwater lobster	Private	590 252	Federal Creek	
northeast forest snail	SF	403 282	Diddleum Road	
northeast forest snail	SF	417 294	Old East Diddleum Road	
northeast forest snail	FReserve	448 267	Knights Road, Mt Maurice	
northeast forest snail	SF	460 230	Wombat Plain	
northeast forest snail	FReserve	473 270	New Mt Maurice track	
northeast forest snail	SF	479 224	Russells Road	
northeast forest snail	SF	483 224	Maurice and Russells Road	
northeast forest snail	SF	500 270	Near Mt Maurice	
northeast forest snail	SF	503 240	Wayback Hill, Maurice Road	
northeast forest snail	SF	524 253	Old Mt Maurice track, Maurice Road	
northeast forest snail	SF	530 213	Two Shed Plain	
northeast forest snail	SF	530 250	Ringarooma Valley	
northeast forest snail	SF	547 260	Maurice Road and Maurice	
quoll (spotted-tailed, eastern)	Private		Trenah and Paradise Plains District	key sites

Species May Occur in Suitable Habitat	Habitat to Survey
burrowing crayfish (Mt Arthur, Scottsdale), boundary junction of two species	Moist seeps, flat swampy areas and stream banks (Mt Arthur) or buttongrass and heathy plains, marshy areas, seeps, floodplains (Scottsdale, Ringarooma).

eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes, below about 400 m altitude.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
northeast forest snail	Rainforest, mixed forest or wet forest containing rainforest elements.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

MAWBANNA 3646

Known Localities of Species	Tenure	Map Grid	Locality	Notes
giant freshwater lobster	SF	606 617	Dip River tributary	key catchm't
giant freshwater lobster	Private	641 608	Black River	key catchm't
giant freshwater lobster	SF	654 603	Black River - along length	key catchm't
giant freshwater lobster	SF	700 620	Alarm River	key catchm't
giant freshwater lobster	Private	728 644	Detention River	key catchm't
giant freshwater lobster	Private	787 692	Sisters Creek	
giant freshwater lobster	FReserve	797 680	Lake Llewellyn	
giant freshwater lobster	SF/P/Res		Dip River, Black River, Detention River	key catchm'ts
eagles (white-bellied sea-eagle)	Private	Confidential	Sisters Beach area	nest
coastal birds (migratory waders)	Reserve	782 698	Sisters Beach	foraging site

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Detention River (middle and lower).
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes, below 400 m alt., esp. the Detention River, Black River and Dip River.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
velvet worms (northwest)	Wet forest with rotting logs and woody ground litter.
orange-bellied parrot	Migration feeding habitat: saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast, including vegetated offshore islands.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

MAYDENA 4626

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.
spider (Lake Fenton trapdoor)	Rocky, mossy, wet areas that are well drained, esp. around Lake Dobson area.

MAYFIELD 5832 (Lisdillon-Mayfield)

Known Localities of Species	Tenure	Map Grid	Locality	Notes
coastal birds (hooded plover)	Crown	834 220	Mayfield Beach - survey site	breeding site
coastal birds (hooded plover)	Res/Crwn		Kelvedon, Lisdillon Beach - survey site	breeding site
coastal birds (fairy tern)	Crown	830 177	Mouth of Lisdillon River	breeding site
coastal birds (migratory waders)	Crown	829 172	Mouth of Lisdillon River	feed & roost
coastal birds (short-tailed shearwater)	Private	846 206	Buxton Point	colony
swift parrot	Private	829 210	Near Mayfield Bay on Buxton River	foraging area
swift parrot	Private	856 262	Thirty Acre Creek	foraging area
eagles (white-bellied sea-eagle)	Private	Confidential	On Buxton River	nest
eagles (white-bellied sea-eagle)	Private	Confidential	Near Cataract Gully	nest

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
forty-spotted pardalote	Grassy dry forest and woodland with white gum within 3 km of the coast.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
New Holland mouse	Dry coastal heathland and open heathy forest.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
swift parrot	Forest and woodland dominated by blue gum or black gum within 10 km of the coast, including slopes and ridges.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

McCALL 3830

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers, esp. the Gordon River.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

McPARTLAN 4225

Known Localities of Species	Tenure	Map Grid	Locality	Notes
caddisfly *(Orphninotrichia maculata)*	FRes/SF	371 544	Wedge River	
Hickmans pygmy mountain shrimp	FReserve	350 550	McPartlan Pass area	
Pedder galaxias	FReserve	Confidential	Bonnet Bay area	natural pop.
Pedder galaxias	FReserve	Confidential	Stillwater Rivulet area	natural pop.
Pedder galaxias	FReserve	Confidential	Swampy Creek area	natural pop.
great crested grebe	FReserve		Gordon, Pedder and Serpentine areas	foraging sites

Species May Occur in Suitable Habitat	Habitat to Survey
great crested grebe	Lakes, rivers and estuaries.
Hickmans pygmy mountain shrimp	Buttongrass areas within the original Lake Pedder-Serpentine drainage.
Lake Pedder earthworm	Lake Pedder shoreline and sediments.
Pedder galaxias	Tributaries of the Lake Pedder impoundment.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.

MEERIM 3528 (on Meerim-Varna sheet)

Known Localities of Species	Tenure	Map Grid	Locality	Notes
coastal birds (hooded plover)	Reserve	576 895	Unnamed beach	breeding site
coastal birds (hooded plover)	Reserve	584 867	Unnamed beach	breeding site
coastal birds (hooded plover)	Reserve	598 813	Meerim Beach	breeding site
coastal birds (short-tailed shearwater)	Reserve	593 782	Leelinger Island, Spero Bay	colony
coastal birds (short-tailed shearwater)	FReserve	585 813	Hibbs Pyramid	colony

Species May Occur in Suitable Habitat	Habitat to Survey
orange-bellied parrot	Breeding and migration feeding habitat: buttongrass plains with eucalypt forest patches, saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

MELALEUCA 4219

Known Localities of Species	Tenure	Map Grid	Locality	Notes
orange-bellied parrot	FReserve	Confidential	Bathurst Harbour Islands	breeding '99
orange-bellied parrot	Reserve	Confidential	Melaleuca surrounds to Pandora Hill	breeding '99
orange-bellied parrot	Reserve	323 919	OBP Observation Hide, near airstrip	feeding site
orange-bellied parrot	Reserve	Confidential	Near Observation Hide	nest boxes
orange-bellied parrot	Reserve	Confidential	Sites around Melaleuca Lagoon	nest boxes
orange-bellied parrot	Reserve	Confidential	Around Melaleuca campsites	nest boxes
orange-bellied parrot	Reserve	Confidential	Melalueca Lagoon	nest boxes
orange-bellied parrot	Priv / Res	319 910	Around Wilsons homestead, Melaleuca	feeding site

Species May Occur in Suitable Habitat	Habitat to Survey
orange-bellied parrot	Breeding and migration feeding habitat: buttongrass plains with eucalypt forest patches, saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

MELLA 3247

Known Localities of Species	Tenure	Map Grid	Locality	Notes
giant freshwater lobster	Private	336 722	Geales Creek	
giant freshwater lobster	Reserve		Duck River and tributaries	key catchm't
keeled snail	SF	269 718	4 km northwest of Christmas Hills	
keeled snail	SF	270 731	Near Farnhams Creek	
keeled snail	SF	270 769	Barcoo Road	
keeled snail	SF	272 745	1 km north of Farnhams Creek	
keeled snail	SF	272 772	Barcoo Road	
keeled snail	SF	273 728	4 km northwest of Christmas Hills	
keeled snail	SF	273 734	Farnhams Creek	
keeled snail	SF	274 721	3 km northwest of Christmas Hills	
keeled snail	SF	275 776	6 km south of Montagu	
keeled snail	SF	282 702	Riseborough Road, W Christmas Hills	
keeled snail	SF	286 722	Greys Creek	

keeled snail	SF	287 724	Greys Creek	
keeled snail	SF	297 791	5 km southeast of Montagu	
keeled snail	SF	298 726	Fagans Road	
keeled snail	SF	303 726	Fagans Road	
keeled snail	SF	312 719	2 km northeast of Christmas Hills	
keeled snail	SF	312 721	Fagans Road	
keeled snail	SF	312 731	Tram Creek	
keeled snail	SF	319 707	Christmas Hills	
keeled snail	SF	326 744	5 km west of Broadmeadows	
keeled snail	SF	335 771	4 km northwest of Broadmeadows	
keeled snail	SF	335 777	6 km northwest of Broadmeadows	
keeled snail	Private	336 704	Christmas Hills	
keeled snail	SF	336 770	4 km northwest of Broadmeadows	
keeled snail	SF	337 775	5 km northwest of Broadmeadows	
keeled snail	SF / Priv	338 778	6 km northwest of Broadmeadows	
keeled snail	Private	341 702	Jones Plain	
keeled snail	Private	343 708	Near Jones Plain	
velvet worms (northwest)	Private	341 702	Christmas Hills area	
eagles (wedge-tailed)	Private	Confidential	Near Thorpes Plain	nest

Species May Occur in Suitable Habitat	**Habitat to Survey**
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes, below about 400 m alt., esp. the Montagu River and Duck River and catchments.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur. Key habitat sites.
keeled snail	Forest with deep damp litter.
velvet worms (northwest)	Wet forest with rotting logs and woody ground litter.
orange-bellied parrot	Migration feeding habitat: saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast, including vegetated offshore islands.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

MEMANA 5857

Known Localities of Species	**Tenure**	**Map Grid**	**Locality**	**Notes**
New Holland mouse	Private	835 709	2 km north of Mulligans Hill	colony

Species May Occur in Suitable Habitat	**Habitat to Survey**
Bass Strait wombat	Heath, scrub, woodland and pasture.
dwarf galaxiid	Slow-flowing and still waters with aquatic vegetation.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
New Holland mouse	Dry coastal heathland and open heathy forest.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

MEREDITH 3439

Known Localities of Species	**Tenure**	**Map Grid**	**Locality**	**Notes**
freshwater snails *(Beddomeia bowryensis, B. trochiformis)*	Crown	477 973	Bowry Creek, off Corinna Road	type localities

Species May Occur in Suitable Habitat	Habitat to Survey
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

MIENA 4635

Known Localities of Species	Tenure	Map Grid	Locality	Notes
caddisfly *(Oxyethira mienica)*	Private	705 512	Ouse River, 8 km west of Miena	type locality
Great Lake ecosystem *(Mesacanthotelson setosus, Onchotelson brevicaudatus)*	HEC		Shannon Lagoon	
Great Lake ecosystem *(Mesacanthotelson setosus)*	HEC	742 533	Dud Bay, Great Lake	
Great Lake ecosystem *(Onchotelson brevicaudatus)*	HEC		Swan Bay, Great Lake	
caddisfly *(Costora iena)*			Streams at Shannon River and Miena	now extinct
ptunarra brown butterfly	Private	500 520	Ellis Plains	colony
ptunarra brown butterfly	FReserve	615 545	Lake Fergus	colony
ptunarra brown butterfly	Private	690 505	Skittleball Plains	colony
ptunarra brown butterfly	Private	715 525	Stone Hut Plain	colony
ptunarra brown butterfly	Private	734 575	Liawenee Moor	colony
ptunarra brown butterfly	Private	736 542	Beehives Road (Great Lake)	colony
ptunarra brown butterfly	Private	775 518	Miena	colony
Miena jewel beetle	Crown	770 5200	Tea tree scrub Miena area above 900 m	historic site

Species May Occur in Suitable Habitat	Habitat to Survey
Great Lake ecosystem (all species)	Great Lake margins, benthos, sediments.
pencil pine moth	Pencil pine forest.
ptunarra brown butterfly	Native grassland or woodland with more than 15% cover of tussock grass.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.
Miena jewel beetle	Melaleuca scrubland above 900 m.

MILABENA 3645

Known Localities of Species	Tenure	Map Grid	Locality	Notes
giant freshwater lobster	SF	630 559	Dip River	key catchm't
giant freshwater lobster	Reserve	634 559	Dip River above Falls	key catchm't
giant freshwater lobster	Reserve	635 559	Dip River	key catchm't
giant freshwater lobster	Private	760 560	Maynes Creek	key catchm't
giant freshwater lobster	SF/Res		Dip, Black and Flowerdale Rivers	key catchm'ts
freshwater snails (*Beddomeia kessneri*)	Reserve	634 558	Dip River above Dip Falls	type locality
eagles (wedge-tailed)	SF	Confidential	Near Dip Falls	nest

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes, below about 400 m alt., esp. the Dip River, Black River and Flowerdale River.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
velvet worms (northwest)	Wet forest with rotting logs and woody ground litter.

quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

MILLERS 5035

Known Localities of Species	Tenure	Map Grid	Locality	Notes
eagles (wedge-tailed)	SF	Confidential	Near Big Den	nest
eagles (wedge-tailed)	SF	Confidential	Near Big Den	nest
eagles (wedge-tailed)	SF	Confidential	Great Western Tiers	nest

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
ptunarra brown butterfly	Native grassland or woodland with more than 15% cover of tussock grass.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

MOLE CREEK 4439

Known Localities of Species	Tenure	Map Grid	Locality	Notes
cave ecosystem *(Hickmanoxyomma gibbergunyar, Tasmanotrechus cockerilli)*	FRes / Priv / SF	Confidential	Mole Creek area	
cave ecosystem *(Pseudotyrannochthonius typhlus)*	FRes/Priv	Confidential	Georgies Hall and Baldock Caves	

Species May Occur in Suitable Habitat	Habitat to Survey
cave-dwelling invertebrates	Mole Creek, Baldock Caves and other karst areas.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes, below about 400 m altitude.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

MONARCH 5646

Known Localities of Species	Tenure	Map Grid	Locality	Notes
giant freshwater lobster	Private	723 692	Boobyalla River	key catchm't
green and gold frog	Private	670 694	Waterhouse Road	key site
New Holland mouse	Private	684 680	2 km south of Sheoak Hill	colony

Species May Occur in Suitable Habitat	Habitat to Survey
dwarf galaxiid	Slow-flowing and still waters with aquatic vegetation.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes, below about 400 m altitude.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
New Holland mouse	Dry coastal heathland and open heathy forest.

quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

MONPEELYATA 4634

Known Localities of Species	Tenure	Map Grid	Locality	Notes
ptunarra brown butterfly	Private	627 463	Handsome Flat	colony
ptunarra brown butterfly	Crown	673 483	Monpeelyata Road	colony
eagles (wedge-tailed)	SF	Confidential	Near Top Marshes	nest
eagles (wedge-tailed)	Private	Confidential	Near Spring Marshes Creek	nest
eagles (wedge-tailed)	Private	Confidential	Shannon area	nest

Species May Occur in Suitable Habitat	Habitat to Survey
ptunarra brown butterfly	Native grassland or woodland with more than 15% cover of tussock grass.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

MONTACUTE 4829

Known Localities of Species	Tenure	Map Grid	Locality	Notes
eagles (wedge-tailed)	Private	Confidential	Near Burns Hill	nest
eagles (wedge-tailed)	Private	Confidential	Near Stony Peak	nest

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
giant freshwater lobster	Clyde River - translocated population
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

MONTAGU 3248

Known Localities of Species	Tenure	Map Grid	Locality	Notes
eagles (wedge-tailed)	Private	Confidential	West Montagu area	nest
eagles (white-bellied sea-eagle)	Reserve	Confidential	Denium Hill area	nest
coastal birds (fairy tern, hooded plover)	Crown	348 868	Perkins Island, esp. Shipwreck Point	breeding sites
coastal birds (little tern)	Crown	348 868	Perkins Island	observed
coastal birds (short-tailed shearwater)	Crown	292 890	Howie Island	colony
coastal birds (migratory waders)		347 868	Perkins Island, esp. Shipwreck Point	feed & roost
coastal birds (migratory waders)	Crown	2	Tidal mudflats around Robbins Passage	feed & roost
coastal birds (migratory waders)	Crown	240 870	Tidal mudflats around Montagu Island	feed & roost
coastal birds (migratory waders)	Crown	205 887	Tidal mudflats of Wallaby Islands	feed & roost

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes, below 400 m alt., esp. the Montagu River.

green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
keeled snail	Forest with deep damp litter.
orange-bellied parrot	Migration feeding habitat: saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast, including vegetated offshore islands.
coastal birds (fairy tern, migratory waders)	Sand or shingle beaches, unvegetated sites near estuaries and nearby lakes, and estuarine and offshore islands.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

MONTANA 4639

Known Localities of Species	Tenure	Map Grid	Locality	Notes
eagles (wedge-tailed)	Private	Confidential	Near Barretts Bridge	nest
eagles (wedge-tailed)	Private	Confidential	Near Barretts Bridge	nest

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes, below about 400 m alt., esp. the Mersey River.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

MONTGOMERY 3626

Known Localities of Species	Tenure	Map Grid	Locality	Notes
coastal birds (short-tailed shearwater)	Reserve	673 627	Montgomery Rocks	colony

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
orange-bellied parrot	Breeding and migration feeding habitat: buttongrass plains with eucalypt forest patches, saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

MOORES 3826

Species May Occur in Suitable Habitat	Habitat to Survey
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.

quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

MORIARTY 5950

Known Localities of Species	Tenure	Map Grid	Locality	Notes
coastal birds (little penguin)	Crown	051 089	Low Islets (west island)	colony
coastal birds (little penguin)	Crown	054 089	Low Islets (east island)	colony
coastal birds (white-fronted tern)	Crown	051 089	Low Islets (west island)	breeding site
coastal birds (hooded plover)	TA	955 086	Rebecca Beach - survey 1998	breeding site
coastal birds (hooded plover)	TA		Southern Moriarty Bay - survey 1998	breeding site
seals (Australian fur seal)	Crown	075 065	Moriarty Rocks, off Clarke Island	breeding site

Species May Occur in Suitable Habitat	Habitat to Survey
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
coastal birds (white-fronted tern, little tern)	Sand or shingle beaches, unvegetated sites near estuaries and nearby lakes, and estuarine and offshore islands.

MORRISTON 5433

Known Localities of Species	Tenure	Map Grid	Locality	Notes
eagles (wedge-tailed)	Private	Confidential	Dismal Creek area	nest
eagles (wedge-tailed)	Private	Confidential	Near The Quoin	nest
eagles (wedge-tailed)	Private	Confidential	Near The Quoin	nest
eagles (wedge-tailed)	Private	Confidential	Near Front Stockers Hill	nest near
eagles (wedge-tailed)	Private	Confidential	Near Front Stockers Hill	nest

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
ptunarra brown butterfly	Native grassland or woodland with more than 15% cover of tussock grass.
salt lake slater	Salt lakes around the Tunbridge area, esp. Mona Vale and Glen Morey saltpan
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

MULCAHY 3822

Known Localities of Species	Tenure	Map Grid	Locality	Notes
coastal birds (hooded plover)	FReserve	967 252	Mulcahy Bay	breeding site

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
orange-bellied parrot	Breeding and migration feeding habitat: buttongrass plains with eucalypt forest patches, saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

MURDUNNA 5624

Known Localities of Species	Tenure	Map Grid	Locality	Notes
burgundy snail	SF	737 421	Mid Sounds Rivulet	
burgundy snail	SF	737 462	Browns Creek	
burgundy snail	SF	746 402	Flinders Creek on Arthur Highway	
burgundy snail	SF	748 432	Murdunna Hill	
burgundy snail	SF	751 450	Richardsons Road, NW Blackman Hill	
burgundy snail	SF	757 440	Schofields Road	
burgundy snail	SF	759 435	Bun Hill	
burgundy snail	SF	765 420	Upper Sounds Rivulet	
burgundy snail	SF	769 425	Near Schofields Rd, east of Slew Hill	
burgundy snail	SF	770 428	Near Slew Hill	
burgundy snail	SF	773 425	Near Slew Hill	
burgundy snail	SF	775 429	Near Slew Hill	
burgundy snail	SF	784 466	McGuinness Creek	
southeast stag beetles (Mt Mangana)	SF	757 402	Bushwalk Carpark	
southeast stag beetles (Mt Mangana)	SF	768 422	Schofields Road	
southeast stag beetles (Mt Mangana)	FReserve	807 436	Cape Surville	
swift parrot	Private	672 497	Murdochs Hill	foraging area
swift parrot	Private	677 478	1 km northwest of Jimmys Hill	foraging area
swift parrot	Private	699 481	0.5 km southeast of Mount Forestier	foraging area
eagles (wedge-tailed)	Private	Confidential	Near Bellettes Point	nest
eagles (wedge-tailed)	SF	Confidential	Near Blackman Hill (FTOO5B)	nest
eagles (wedge-tailed)	SF	Confidential	Near Mt Reynolds	nest near
eagles (white-bellied sea-eagle)	Private	Confidential	Near Bellettes Point	nest
eagles (white-bellied sea-eagle)	Private	Confidential	Murdunna area	nest
eagles (white-bellied sea-eagle)	FReserve	Confidential	Near Deep Glen Bluff	nest
eagles (white-bellied sea-eagle)	FReserve	Confidential	Near Deep Glen Bluff	nest
coastal birds (short-tailed shearwater)	Private	642 445	Smooth Island, west of Murdunna	colony
coastal birds (short-tailed shearwater)	Private	640 483	Fulham Island	colony

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
southeast stag beetles (broad-toothed)	Dry or wet forest with rotting logs and litter on the ground.
burgundy snail	Wet eucalypt forest.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
forty-spotted pardalote	Grassy dry forest and woodland with white gum within 3 km of the coast.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
southeast seastars (live-bearing seastar)	Intertidal rocky areas, on sandstone.
southeast stag beetles (Mt Mangana)	Wet forest containing decaying logs.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
spotted handfish	Derwent River estuary and adjoining bays and channels.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
swift parrot	Forest and woodland dominated by blue gum or black gum within 10 km of the coast, including slopes and ridges.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

MUSSELROE 5847

Known Localities of Species	Tenure	Map Grid	Locality	Notes
dwarf galaxiid	Private	818 825	The Marsh Creek, from dam site	
dwarf galaxiid	Private	935 700	Icena Creek east of Gladstone	
green and gold frog	Private	849 793	Rushy Lagoon	
green and gold frog	FReserve	992 763	6 km north of Mt William	
Schayers grasshopper	Private	827 756	'Red Hills', Tucker Road, Gladstone	key site
coastal birds (hooded plover)	Crown	992 804	Musselroe Point	breeding site
eagles (wedge-tailed)	Private	Confidential	Near Musselroe Bay	nest
eagles (wedge-tailed)	FRes/Priv	Confidential	Near Mount William	nest
eagles (white-bellied sea-eagle)	Private	Confidential	Near Musselroe Bay	nest

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
dwarf galaxiid	Slow-flowing and still waters with aquatic vegetation.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
New Holland mouse	Dry coastal heathland and open heathy forest.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

NABOWLA 5244

Known Localities of Species	Tenure	Map Grid	Locality	Notes
giant freshwater lobster	Private	393 402	Brid River	
giant freshwater lobster	Private		Little Forester River and tributaries	key catchm't
green and gold frog	Private	307 420	Nabowla	
eagles (wedge-tailed)	SF	Confidential	Near Nabowla	nest near
eagles (wedge-tailed)	Private	Confidential	Near Little Ballroom	nest
eagles (wedge-tailed)	SF	Confidential	Blumont area	nest near

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes, below about 400 m altitude, especially the Little Forester River and Brid River.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

NARACOOPA 2457

Known Localities of Species	Tenure	Map Grid	Locality	Notes
King Island brown thornbill	Reserve	433 741	Pegarah Forest Reserve	
orange-bellied parrot	Private	537 717	Lancaster Road, King Island	migration '92
coastal birds (hooded plover)	Reserve	550 765	Fraser Bluff	breeding site
coastal birds (short-tailed shearwater)	Reserve	554 754	South of Fraser Bluff, King Island	colony
coastal birds (short-tailed shearwater)		547 729	Barrier Creek, King Island	colony

coastal birds (short-tailed shearwater)		535 773	Naracoopa Beach, King Island	colony
eagles (white-bellied sea-eagle)	Private	Confidential	North of Pegarah	nest
eagles (white-bellied sea-eagle)	Private	Confidential	Sea Elephant River area	nest
eagles (white-bellied sea-eagle)	SF	Confidential	Raffertys Creek area	nest
southern hairy red snail	SF	516 785	Fraser River at Raffertys Creek junction	
southern hairy red snail	SF	511 781	Raffertys Creek	

Species May Occur in Suitable Habitat	**Habitat to Survey**
Australian grayling	Lower and middle reaches of coastal rivers.
King Island brown thornbill	Dry forest, woodland and scrubland.
orange-bellied parrot	Migration feeding habitat: saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast, including vegetated offshore islands.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
southern hairy red snail	Tea tree, melaleuca, banksia scrub or wet eucalypt forest within 5 km of the coast.

NATURALISTE 6047

Known Localities of Species	**Tenure**	**Map Grid**	**Locality**	**Notes**
green and gold frog	FReserve	000 765	6 km north of Mt William	
New Holland mouse	FReserve	004 780	Northwest of Cape Naturaliste	colony
New Holland mouse	FReserve	006 782	Northwest of Cape Naturaliste	colony
coastal birds (fairy tern)	FReserve	030 775	Cape Naturaliste, head	breeding site

Species May Occur in Suitable Habitat	**Habitat to Survey**
Australian grayling	Lower and middle reaches of coastal rivers.
dwarf galaxiid	Slow-flowing and still waters with aquatic vegetation.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
New Holland mouse	Dry coastal heathland and open heathy forest.
coastal birds (fairy tern)	Sand or shingle beaches, unvegetated sites near estuaries and nearby lakes, and estuarine and offshore islands.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

NEVADA 4624

Known Localities of Species	**Tenure**	**Map Grid**	**Locality**	**Notes**
pencil pine moth	FReserve	737 456	Lake Skinner	colony

Species May Occur in Suitable Habitat	**Habitat to Survey**
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
pencil pine moth	Pencil pine forest.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

NEW NORFOLK 5026

Known Localities of Species	**Tenure**	**Map Grid**	**Locality**	**Notes**
Australian grayling	Priv/Res	122 665	Derwent River near Green Island	
swift parrot	Private	049 632	New Norfolk area	foraging area
eagles (wedge-tailed)	Private	Confidential	Near Altamont Creek	nest
eagles (white-bellied sea-eagle)	Private	Confidential	Northwest of Bridgewater	nest
coastal birds (migratory waders)	Reserve	197 652	Goulds Lagoon	foraging site

great crested grebe	Priv/Res		Riverline, New Norfolk to Bridgewater	foraging sites

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of Derwent River.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
great crested grebe	Key foraging sites on Derwent River between New Norfolk and Bridgewater.
swift parrot	Forest and woodland dominated by blue gum or black gum within 10 km of the coast, including slopes and ridges.
forty-spotted pardalote	Historically found in white gum forest around Mt Faulkner to New Norfolk Highway.
grey goshawk	Blackwood and wet forest around Molesworth, New Norfolk Hills and Glen Fern areas.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

NEW YEAR 2260

Known Localities of Species	Tenure	Map Grid	Locality	Notes
coastal birds (fairy tern)	Reserve	360 045	Yellow Rock Beach	breeding site
coastal birds (hooded plover)	Reserve		Phoques Bay to Quarantine Bay	breeding sites
coastal birds (short-tailed shearwater)		285 020	Christmas Island, King Island	colony
coastal birds (short-tailed shearwater)		286 040	New Year Island, King Island	colony
eagles (white-bellied sea-eagle)	Private	Confidential	Near Muddy Lagoon	nest
eagles (white-bellied sea-eagle)	Private	Confidential	Near Muddy Lagoon	nest
marine turtles (leatherback)	Reserve		Beachwashed, Yellow Rock	1898 record
marine turtles (leatherback)	Crown		Swimming 1 nm offshore New Year Is.	1988 record
marine turtles (leatherback)	Reserve		Beachwashed Phoques Bay, King Island	1992 record 1
marine turtles (leatherback)	Reserve		Beachwashed Phoques Bay, King Island	1992 record 2
marine turtles (leatherback)	Com'w		Swimming 4 nm west Christmas Island	1993 record
marine turtles (leatherback)	Crown		Swimming northwest of New Year Is.	1995 record

Species May Occur in Suitable Habitat	Habitat to Survey
King Island brown thornbill	Dry forest, woodland and scrubland.
orange-bellied parrot	Migration feeding habitat: saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast, including vegetated offshore islands.
coastal birds (fairy tern)	Sand or shingle beaches, unvegetated sites near estuaries and nearby lakes, and estuarine and offshore islands.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.

NILE 5238

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

NUNAMARA 5241

Known Localities of Species	Tenure	Map Grid	Locality	Notes
giant freshwater lobster	Private	251 178	St Patricks River at Nunamara	translocated
freshwater snails *(Beddomeia ronaldi)*	Private	260 186	St Patricks River trib. at road junction	
freshwater snails *(Beddomeia ronaldi)*	Private	274 182	Small stream on Weavers Creek Road	faunal break
freshwater snails *(Beddomeia ronaldi)*	Private	276 180	St Patricks River trib, Weavers Ck Road	type locality
freshwater snails *(Beddomeia ronaldi)*	SF	277 183	Small stream on Weavers Creek Road	faunal break
northeast forest snail	SF	312 142	Weavers Creek, Nunamara	faunal break
northeast forest snail	Private	384 156	Boags Country Road	
northeast forest snail	SF	395 155	Carneys Creek	

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
giant freshwater lobster	St Patricks River - translocated pop.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
burrowing crayfish (Mt Arthur)	Moist seeps, flat swampy areas and stream banks, where soil has moderate to high clay content.
northeast forest snail	Rainforest, mixed forest or wet forest containing rainforest elements.
'Skemps' snail	Wet sclerophyll gullies with creek lines.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

O'CONNORS 5036

Known Localities of Species	Tenure	Map Grid	Locality	Notes
eagles (wedge-tailed)	SF	Confidential	Near Parson and Clerk Mountain	nest near
eagles (wedge-tailed)	Private	Confidential	Near Dabool Rivulet	nest near
eagles (wedge-tailed)	SF	Confidential	West of Abrahams Creek	nest
eagles (wedge-tailed)	SF	Confidential	West of Abrahams Creek	nest
eagles (wedge-tailed)	SF	Confidential	Abrahams Creek	nest

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

OATLANDS 5231

Known Localities of Species	Tenure	Map Grid	Locality	Notes
great crested grebe	Reserve	310 160	Lake Dulverton (when not dry)	breeding site
ptunarra brown butterfly	Private	250 100	Pages Tier	colony
ptunarra brown butterfly	Private	264 185	Fernleigh Hill	colony
ptunarra brown butterfly	Private	283 103	Front Springs Hill	colony
eagles (wedge-tailed)	Private	Confidential	Near Weedings Hill	nest
eagles (wedge-tailed)	Private	Confidential	Near Woodbine Hill	nest near

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
great crested grebe	Lakes, rivers and estuaries.
ptunarra brown butterfly	Native grassland or woodland with more than 15% cover of tussock grass.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

OCEANA 3635

Species May Occur in Suitable Habitat	Habitat to Survey
orange-bellied parrot	Migration feeding habitat: saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast, including vegetated offshore islands.
pencil pine moth	Pencil pine forest.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

OLEGAS 4027

Known Localities of Species	Tenure	Map Grid	Locality	Notes
orange-bellied parrot	FReserve	135 753	1 km south of Truchanas Reserve	historical '81
cave ecosystem (little six-eyed spider)	FReserve	Confidential	Denison River above Gordon junction	

Species May Occur in Suitable Habitat	Habitat to Survey
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

OLIVE 4435

Species May Occur in Suitable Habitat	Habitat to Survey
ptunarra brown butterfly	Native grassland or woodland with more than 15% cover of tussock grass.

OLYMPUS 4234

Species May Occur in Suitable Habitat	Habitat to Survey
pencil pine moth	Pencil pine forest.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

ORDNANCE 3042

Known Localities of Species	Tenure	Map Grid	Locality	Notes
green and gold frog	Reserve	093 278	Ordnance Point area	
green and gold frog	Reserve	110 238	Ordnance Point area	

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
orange-bellied parrot	Migration feeding habitat: saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast, including vegetated offshore islands.

coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

ORFORD 5628

Known Localities of Species	Tenure	Map Grid	Locality	Notes
Australian grayling		712 877	Prosser River at Orford	
coastal birds (hooded plover)	Reserve	722 872	Orford Beach and SW of Orford Spit	breeding site
coastal birds (fairy tern)	Reserve	723 883	Orford Spit	breeding site
swift parrot	SF	710 826	Three Thumbs	nest
swift parrot	Private	715 862	1.3 km south of Orford	foraging area
swift parrot	SF	717 823	Three Thumbs	nest
swift parrot	Private	717 867	Orford area	foraging area
swift parrot	Priv / Res	718 882	Orford area along the Prosser River	foraging area
swift parrot	Priv / Res	719 883	Orford area	foraging area
swift parrot	SF	722 819	Three Thumbs	foraging area
swift parrot	Private	737 895	West of Louisville Pt on Louisville Rd	foraging area
swift parrot	Private	740 801	2 km west of Rheban	foraging area
swift parrot	Private	740 807	1 km southwest of Half Rung Sugarloaf	foraging area
swift parrot	Private	742 848	Two Mile Creek on Spring Beach	foraging area
swift parrot	Private	743 894	1 km west of Louisville Point	foraging area
swift parrot	Private	745 834	1 km southwest of Stapleton Beach	foraging area
swift parrot	Private	752 809	Half Rung Sugarloaf	foraging area
swift parrot	Private	753 837	Stapleton Beach	foraging area
swift parrot	Private	764 805	1 km north of Rheban on Rheban Road	foraging area
swift parrot	Private	764 812	1 km north of Rheban on Rheban Road	foraging area
swift parrot	Private	764 814	1.2 km north of Rheban on Rheban Rd	foraging area
swift parrot	Private	765 805	1 km north of Rheban	foraging area
eagles (wedge-tailed)	SF	Confidential	Near Three Thumbs	nest
eagles (wedge-tailed)	SF	Confidential	Near Three Thumbs	nest
eagles (white-bellied sea-eagle)	SF	Confidential	Near Johnsons Point	nest
eagles (white-bellied sea-eagle)	SF	Confidential	Near Johnsons Point	nest
eagles (white-bellied sea-eagle)	Private	Confidential	Near Moreys Hill	nest

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers, including the Prosser River.
southeast stag beetles (broad-toothed)	Dry or wet forest with rotting logs and litter on the ground.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
forty-spotted pardalote	Grassy dry forest and woodland with white gum within 3 km of the coast.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
New Holland mouse	Dry coastal heathland and open heathy forest.
coastal birds (fairy tern)	Sand or shingle beaches, unvegetated sites near estuaries and nearby lakes, and estuarine and offshore islands.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
swift parrot	Forest and woodland dominated by blue gum or black gum within 10 km of the coast, including slopes and ridges.

eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

OSMUND 3825

Species May Occur in Suitable Habitat	Habitat to Survey
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
orange-bellied parrot	Breeding and migration feeding habitat: buttongrass plains with eucalypt forest patches, saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

OUSE 4629

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

OWEN 3833

Known Localities of Species	Tenure	Map Grid	Locality	Notes
cave ecosystem (little six-eyed spider)	FReserve	Confidential	Bubs Hill area	
caddisfly *(Diplectrona lyella)*	FReserve	954 382	Nelson Falls, Nelson River	Jackson '99

Species May Occur in Suitable Habitat	Habitat to Survey
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

OXBERRY 5446

Known Localities of Species	Tenure	Map Grid	Locality	Notes
dwarf galaxiid	Private	447 619	'Forester Lodge' property	
dwarf galaxiid	Private	479 659	'Marengo' property	
coastal birds (hooded plover)	Reserve	440 662	Waterhouse Beach	
green and gold frog	Private	430 603	Waterhouse Road	key site
green and gold frog	Private	476 643	Deepwater, Waterhouse Road	key site
green and gold frog	Private	491 691	Blackmans Lagoon	key site
green and gold frog	Private	492 693	Blackmans Lagoon	key site
green and gold frog	Private	493 698	Blackmans Lagoon	key site
green and gold frog	Private	520 678	Old Waterhouse Road	key site
green and gold frog	Private	530 692	Waterhouse area	key site
green and gold frog	Private	552 693	Waterhouse area	key site
giant freshwater lobster	Priv/Res		Great Forester River and tributaries	key catchm't

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Middle and lower Great Forester River.
dwarf galaxiid	Slow-flowing and still waters with aquatic vegetation.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes, below about 400 m altitude.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

PALANA 5659

Known Localities of Species	Tenure	Map Grid	Locality	Notes
eagles (wedge-tailed)	Crown	Confidential	Near Mount Blyth	nest near
eagles (white-bellied sea-eagle)	Reserve	Confidential	Mount Killiecrankie	nest
eagles (white-bellied sea-eagle)	Private	Confidential	Near She Oak Point	nest
eagles (white-bellied sea-eagle)	Private	Confidential	Near She Oak Point	nest
coastal birds (little penguin, s-t shearwater)	Crown	656 899	Sentinel Island	colonies
coastal birds (little penguin, s-t shearwater)	Crown	706 915	Little Island, Killiecrankie	colonies
marine turtles (leatherback)	Crown		Entangled off Killiecrankie Bay	1966 record

Species May Occur in Suitable Habitat	Habitat to Survey
Bass Strait wombat	Heath, scrub, woodland and pasture.
Australian grayling	Lower and middle reaches of coastal rivers.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

PARKHAM 4641

Known Localities of Species	Tenure	Map Grid	Locality	Notes
giant freshwater lobster	Private	640 115	Rubicon River	
green and gold frog	Private	610 114	Moltema Road at Kimberley	

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes, below about 400 m alt., especially along the Rubicon River.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

PARRAWE 3842

Known Localities of Species	Tenure	Map Grid	Locality	Notes
caddisfly *(Diplectrona lyella)*	FReserve	840 299	Hellyer Gorge	
giant freshwater lobster	FReserve	837 298	Hellyer River	key catchm't
giant freshwater lobster	FRes/Crn		Emu River, Helleyer River and all tribs.	key catchm'ts

freshwater snails *(Beddomeia protuberata)*	Private	996 294	Emu River tributary south of Kara Road	type locality

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes, below about 400 m alt., especially the Arthur River, Hellyer River and Emu River.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
ptunarra brown butterfly	Native grassland or woodland with more than 15% cover of tussock grass.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

PARSONS 3638

Known Localities of Species	Tenure	Map Grid	Locality	Notes
eagles (wedge-tailed)	Crown	Confidential	Near Wilson River	nest near

Species May Occur in Suitable Habitat	Habitat to Survey
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

PARTRIDGE 5019

Known Localities of Species	Tenure	Map Grid	Locality	Notes
forty-spotted pardalote	FReserve	084 949	Northeast of east Partridge Island	colony B 72
forty-spotted pardalote	FReserve	083 940	Southeast of east Partridge Island	colony B 72
forty-spotted pardalote	FReserve	089 931	Butlers Beach, Labillardiere Peninsula	colony B 71
forty-spotted pardalote	FReserve	077 926	Hopwood Beach, Labillardiere P.	colony B 70
forty-spotted pardalote	FReserve	107 905	East Labillardiere Peninsula	colony B 78
forty-spotted pardalote	Private	161 921	South on Lighthouse Road	colony B 67a
forty-spotted pardalote	Private	200 990	Conleys Road, Bruny Island	colony B 62
forty-spotted pardalote	Private	195 965	Staffords Hill, Bruny Island	colony B 64
forty-spotted pardalote	Private	197 967	Birds Creek on Cloudy Bay Road	colony B 64
forty-spotted pardalote	Private	199 955	'Inala', Cloudy Bay Road	colony B 65
forty-spotted pardalote	Crown	163 905	South Conleys Point, Bruny Island	colony B 69
forty-spotted pardalote	Crown	165 911	North Conleys Point, Bruny Island	colony B 69
forty-spotted pardalote	Private	163 945	Lighthouse Road, South Bruny Island	colony B 67b
forty-spotted pardalote	Private	163 938	Lighthouse Road, South Bruny Island	colony B 67b
forty-spotted pardalote	Private	165 928	Off Lighthouse Road, Bruny Island	colony B 68
forty-spotted pardalote	Private	170 930	South Big Marsh, Bruny Island	colony B 68
forty-spotted pardalote	Private	181 978	1 km southwest of Lunawanna, B.I.	colony B 63
forty-spotted pardalote	Private	184 974	1 km southwest of Lunawanna, B.I.	colony B 63
forty-spotted pardalote	Private	199 939	Saintys Creek at road, Bruny Island	colony B 66
forty-spotted pardalote	Private	198 942	Saintys Creek, South Bruny Island	colony B 66
swift parrot	Private	012 937	Lady Bay	foraging area
swift parrot	Private	159 907	Cloudy Bay Lagoon	foraging area
swift parrot	Private	180 984	Lunawanna area	foraging area
swift parrot	Private	188 982	Lunawanna area	foraging area

swift parrot	Private	188 993	1 km north of Lunawanna	foraging area
swift parrot	Private	189 982	Lunawanna	foraging area
swift parrot	Private	189 984	Lunawanna	foraging area
swift parrot	Private	192 978	1 km southeast of Lunawanna	foraging area
coastal birds (hooded plover)	Reserve	180 905	Cloudy Bay to end	breeding site
coastal birds (hooded plover)	FReserve	086 933	Butlers Beach	breeding site
coastal birds (short-tailed shearwater)	FReserve	075 915	The Pineapples	colony
coastal birds (migratory waders)	Reserve		Cloudy Bay Lagoon	feed & roost
eagles (white-bellied sea-eagle)	Crown	Confidential	Near Lippies Point	nest
southeast seastars *(Smilasteris tasmaniae)*	Reserve	176 987	Grundy's Point, South Bruny Island	colony
southeast seastars *(Smilasteris tasmaniae)*	Crown	179 999	Point Winifred, Daniels Bay, Bruny Is.	colony
southeast seastars (live-bearing seastar)	Priv / Res	Confidential	Intertidal area, Daniels Bay	colony
southeast stag beetles (Mt Mangana)	SF	016 971	Hays Road (Dalco Creek)	

Species May Occur in Suitable Habitat	Habitat to Survey
broad-striped ghost moth	Bruny Island heathland needs a survey.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds. Not found on Bruny Island.
forty-spotted pardalote	Grassy dry forest and woodland with white gum within 3 km of the coast.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
southeast seastars (live-bearing seastar, *Smilasterias tasmaniae)*	Coastal, rocky intertidal areas.
southeast stag beetles (Mt Mangana)	Wet forest containing decaying logs.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
swift parrot	Forest and woodland dominated by blue gum or black gum within 10 km of the coast, including slopes and ridges.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

PASSAGE 6051

Known Localities of Species	Tenure	Map Grid	Locality	Notes
coastal birds (hooded plover)		144 177	Christmas Beach to Crystal Lagoon	breeding site
coastal birds (hooded plover)		130 199	Crystal Lagoon to Nautilus Cove	breeding site
coastal birds (hooded plover)	Reserve	010 082	Northern end of Moriarty Bay	breeding site
coastal birds (hooded plover)	Reserve	025 156	Kangaroo Bay Beach	breeding site
coastal birds (hooded plover, little penguin, short-tailed shearwater)	FReserve	109 148	Forsyth Island	breeding sites
coastal birds (white-fronted tern)		053 185	Islet off Seal Point	breeding site
coastal birds (little penguin, s-t shearwater)	Crown	135 150	Passage Island	colonies

Species May Occur in Suitable Habitat	Habitat to Survey
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
coastal birds (white-fronted tern)	Sand or shingle beaches, unvegetated sites near estuaries and nearby lakes, and estuarine and offshore islands.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

PATERSONIA 5242

Known Localities of Species	Tenure	Map Grid	Locality	Notes
giant freshwater lobster	Crown	193 401	Denison River	key catchm't
giant freshwater lobster	Private	314 268	St Patricks River	
giant freshwater lobster	Private	333 266	Seven Time Creek	translocated
burrowing crayfish (Mt Arthur)	SF	202 289	Upper Whites Mill Road	
burrowing crayfish (Mt Arthur)	Private	215 204	Near Prossers Forest Road	
burrowing crayfish (Mt Arthur)	Private	245 240	Patersonia	
burrowing crayfish (Mt Arthur)	Private	250 240	Patersonia	
burrowing crayfish (Mt Arthur)	Private	252 214	2.5 km north of Nunamara	
burrowing crayfish (Mt Arthur)	Private	254 204	3 km north of Nunamara	
burrowing crayfish (Mt Arthur)	SF / Priv	261 296	Mt Arthur Road	
burrowing crayfish (Mt Arthur)	Private	283 250	South of Pecks Hill	
burrowing crayfish (Mt Arthur)	Private	301 289	Myrtle Bank	
northeast forest snail	SF	275 275	Patersonia Rivulet	
northeast forest snail	FReserve	328 215	Mount Barrow Falls	
northeast forest snail	Private	348 243	Corkerys Road at St Patricks River	
northeast forest snail	FReserve	356 201	Mt Barrow Picnic Area	
northeast forest snail	FReserve	358 201	Mt Barrow	
northeast forest snail	SF	393 275	Sowters Road	
northeast forest snail	Private		Skemps Creek near Targa	
'Skemps' snail	Reserve		Skemps property, Myrtle Bank	key site
eagles (wedge-tailed)	Private	Confidential	Georges Plain area	nest
eagles (wedge-tailed)	SF	Confidential	Georges Plain area	nest

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes, below about 400 m alt., esp. St Patricks River.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
burrowing crayfish (Mt Arthur)	Moist seeps, flat swampy areas and stream banks, where soil has moderate to high clay content.
northeast forest snail	Rainforest, mixed forest or wet forest containing rainforest elements.
'Skemps' snail	Wet sclerophyll gullies with creek lines.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

PATRIARCHS 6057

Known Localities of Species	Tenure	Map Grid	Locality	Notes
green and gold frog	Crown	045 715	Patriarchs Wildlife Trust area	
coastal birds (little penguin, s-t shearwater)	FReserve	135 770	Babel Island	colonies
coastal birds (little penguin, s-t shearwater)	FReserve	158 762	Cat Island	colonies
coastal birds (little penguin, s-t shearwater)	FReserve	163 757	Storehouse Island	colonies
coastal birds (fairy tern, little tern)	Res/Crwn	007 774	Patriarch Inlet	breeding sites
coastal birds (migratory waders)	Res/Crwn	007 774	Patriarch Inlet	feed & roost
coastal birds (hooded plover)			Planter Beach - survey site	breeding site
eagles (wedge-tailed)	Crown	Confidential	Near South Patriarch	nest
eagles (wedge-tailed)	Crown	Confidential	Near Mount Bramich	nest

eagles (white-bellied sea-eagle)	Crown	Confidential	Near Patriarch Inlet	nest
eagles (white-bellied sea-eagle)	FReserve	Confidential	Near Mount Capuchin on Babel Island	nest
eagles (white-bellied sea-eagle)	FReserve	Confidential	Near Babel Island	nest

Species May Occur in Suitable Habitat	Habitat to Survey
Bass Strait wombat	Heath, scrub, woodland and pasture.
Australian grayling	Lower and middle reaches of coastal rivers.
dwarf galaxiid	Slow-flowing and still waters with aquatic vegetation.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
coastal birds (fairy tern, little tern)	Sand or shingle beaches, unvegetated sites near estuaries and nearby lakes, and estuarine and offshore islands.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

PEARLY BROOK 5445

Known Localities of Species	Tenure	Map Grid	Locality	Notes
giant freshwater lobster	Crown	505 518	Surveyors Creek	key catchm't
giant freshwater lobster	SF	524 544	Great Forester River	key catchm't
giant freshwater lobster	SF		Great Forester River and tributaries	key catchm't
giant freshwater lobster	SF	536 539	Pearly Brook	key catchm't
giant freshwater lobster	SF / Priv	539 539	Pearly Brook	key catchm't
freshwater snails (*Beddomeia briansmithi*)	Private	573 517	Fern Creek near Forester on Conners Rd	type locality
burrowing crayfish (Scottsdale)	SF / Priv	496 505	Near Surveyors Creek	
burrowing crayfish (Scottsdale)	Private	503 516	Near Surveyors Creek	
burrowing crayfish (Scottsdale)	Private	505 512	East of Old Waterhouse Road	
burrowing crayfish (Scottsdale)	Private	505 530	East of Old Waterhouse Road	
burrowing crayfish (Scottsdale)	Private	506 532	East of Old Waterhouse Road	
burrowing crayfish (Scottsdale)	SF	508 506	Near Forester Road	
burrowing crayfish (Scottsdale)	Private	512 534	Tributary of Forester River	
burrowing crayfish (Scottsdale)	Crown	516 514	Tributary of Surveyors Creek	
burrowing crayfish (Scottsdale)	Crown	518 523	Above Forester River	
burrowing crayfish (Scottsdale)	Crown	519 517	Surveyors Creek at Forester River junct.	
burrowing crayfish (Scottsdale)	Private	521 512	Forester River plains	

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Middle and lower Great Forester River.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes, below about 400 m alt., esp. the Great Forester River.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
northeast forest snail	Rainforest, mixed forest or wet forest containing rainforest elements.
burrowing crayfish (Scottsdale)	Buttongrass and heathy plains, marshy areas, seeps, floodplains and riparian areas.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

PEARSE 3840

Known Localities of Species	Tenure	Map Grid	Locality	Notes
ptunarra brown butterfly	Private	856 014	Huskinson Drive	colony
ptunarra brown butterfly	Private	870 000	South of Hatfield Road	colony
ptunarra brown butterfly	Private	870 007	South of Hatfield Road	colony
ptunarra brown butterfly	Private	874 024	Hatfield Siding, Huskinson Drive	colony
ptunarra brown butterfly	Private	883 035	Hatfield Plain	colony
ptunarra brown butterfly	Private	888 001	Romney Marsh	colony
ptunarra brown butterfly	Private	888 057	Westwing Plain	colony
ptunarra brown butterfly	Private	859 093	Clipper Plain	colony
ptunarra brown butterfly	Private	910 055	Racecourse Plain	colony
ptunarra brown butterfly	Private	917 017	Near Racecourse at Button Rd junction	colony
ptunarra brown butterfly	Private	925 007	Racecourse Road	colony
ptunarra brown butterfly	Private	928 042	Racecourse Plain	colony
ptunarra brown butterfly	Private	964 050	Painter Plain	colony
ptunarra brown butterfly	Private	984 094	Thompsons Park	colony
giant freshwater lobster	Priv / Crn		Hellyer River and tributaries	key catchm't

Species May Occur in Suitable Habitat	Habitat to Survey
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes, below about 400 m alt., esp. the Hellyer River and River Leven.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
ptunarra brown butterfly	Native grassland or woodland with more than 15% cover of tussock grass.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

PEARSHAPE 2256

Known Localities of Species	Tenure	Map Grid	Locality	Notes
Australian grayling	Reserve	345 683	Ettrick River	
coastal birds (hooded plover)	Reserve	340 687	Sandy beaches, Ettrick River to Currie	breeding site
coastal birds (hooded plover)	Reserve	344 610	Fitzmaurice Bay	breeding site
coastal birds (s-t shearwater, little penguin)	Reserve	322 607	Catarique Point, SW King Island	colonies
eagles (white-bellied sea-eagle)	Private	Confidential	Near Seal River	nest
marine turtles (leatherback)	Com'w		Swimming 9 nm west of Fitzmaurice Pt.	1996 record

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
King Island brown thornbill	Dry forest, woodland and scrubland.
orange-bellied parrot	Migration feeding habitat: saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast, including vegetated offshore islands.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.

PENCIL PINE 4039

Known Localities of Species	Tenure	Map Grid	Locality	Notes
pencil pine moth	FReserve	123 902	2 km southwest of Mt Kate	colony
ptunarra brown butterfly	Crown	065 995	Vale of Belvoir	colony
ptunarra brown butterfly	FReserve	120 910	Dove River	colony
ptunarra brown butterfly	Private	123 987	Middlesex Plains	colony
eagles (wedge-tailed)	FReserve	Confidential	Near Snake Hill on Cradle Mountain	nest

Species May Occur in Suitable Habitat	Habitat to Survey
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
pencil pine moth	Pencil pine forest.
ptunarra brown butterfly	Native grassland or woodland with more than 15% cover of tussock grass.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

PENNY 5034

Known Localities of Species	Tenure	Map Grid	Locality	Notes
saddled galaxias	HEC		Woods Lake margin and open water	

Species May Occur in Suitable Habitat	Habitat to Survey
ptunarra brown butterfly	Native grassland or woodland with more than 15% cover of tussock grass.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

PERON 5826

Known Localities of Species	Tenure	Map Grid	Locality	Notes
forty-spotted pardalote	FReserve	830 685	West coast of Botton Hill, Maria Island	colony M 5
coastal birds (little penguin)	FReserve	869 696	Haunted Bay, near small gravel beach	colony
coastal birds (short-tailed shearwater)	FReserve	888 696	No Good Bay, Maria Island	colony

Species May Occur in Suitable Habitat	Habitat to Survey
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

PHILIPS 3631

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
orange-bellied parrot	Migration feeding habitat: saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast, including vegetated offshore islands.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

PICCANINNY (Gray) 6038

Known Localities of Species	Tenure	Map Grid	Locality	Notes
velvet worms (blind)	Private	012 896	Elephant Pass	
velvet worms (blind)	Priv / SF	013 895	Wardlaws Creek	
velvet worms (blind)	SF	016 865	Wardlaws Creek	
velvet worms (blind)	SF	020 854	Piccaninny Creek	
velvet worms (blind)	SF	025 855	Piccaninny Creek	
velvet worms (blind)	Private	032 890	Elephant Pass	
velvet worms (blind)	SF	034 827	Piccaninny Creek	
velvet worms (blind)	Private	035 875	Elephant Pass	
velvet worms (blind)	SF	036 818	Stonyford Creek	

velvet worms (blind)	SF	045 845	Piccaninny Creek	
velvet worms (blind)	SF	049 851	Piccaninny Creek	
velvet worms (blind)	SF	051 882	Lower Marsh Creek	
velvet worms (blind)	SF	052 876	Lower Marsh Creek	
velvet worms (blind)	SF	052 883	Lower Marsh Creek	
velvet worms (blind)	SF	053 891	Lower Marsh Creek	
velvet worms (blind)	Priv / SF	054 876	Lower Marsh Creek	
velvet worms (blind)	SF	057 855	Chain of Lagoons area	
velvet worms (blind)	SF	058 899	Little Marsh Creek	
velvet worms (blind)	SF	065 894	Connors Road	
velvet worms (blind)	SF	067 894	Mt Elephant	
velvet worms (blind)	SF		Mt Elephant Wildlife Priority Area	WPA
velvet worms (blind)	SF	069 882	Little Marsh Creek	
velvet worms (giant)	Private	078 898	Hughes Creek	boundary site
coastal birds (hooded plover)	Reserve	068 810	Templestowe Beach - survey site	breeding site
coastal birds (hooded plover)	Reserve	072 850	Lagoons Beach - survey site	breeding site
coastal birds (little tern)	Reserve	073 863	Chain of Lagoons	breeding site
swift parrot	Private	062 841	Piccaninny Creek area	foraging area

Species May Occur in Suitable Habitat	**Habitat to Survey**
Australian grayling	Lower and middle reaches of coastal rivers.
velvet worms (blind and giant) - boundary	Eucalypt forest with rotting logs.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
New Holland mouse	Dry coastal heathland and open heathy forest.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
coastal birds (little tern)	Sand or shingle beaches, unvegetated sites near estuaries and nearby lakes, and estuarine and offshore islands.
swift parrot	Forest and woodland dominated by blue gum or black gum within 10 km of the coast, including slopes and ridges.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

PICTON 4622

Known Localities of Species	**Tenure**	**Map Grid**	**Locality**	**Notes**
caddisfly *(Tasimia drepana)*	SF	750 274	Huon R. upstream from Picton R. junct.	type locality
southeast stag beetles (Mt Mangana)	FReserve	778 286	Tahune Forest Reserve	
southeast stag beetles (Mt Mangana)	SF	797 248	Arve Loop	

Species May Occur in Suitable Habitat	**Habitat to Survey**
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
southeast stag beetles (Mt Mangana)	Wet forest containing decaying logs.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

PILLANS 4437

Known Localities of Species	**Tenure**	**Map Grid**	**Locality**	**Notes**
eagles (wedge-tailed)	FReserve	Confidential	Near Lake Lexie	nest near

Species May Occur in Suitable Habitat	**Habitat to Survey**
pencil pine moth	Pencil pine forest.

ptunarra brown butterfly	Native grassland or woodland with more than 15% cover of tussock grass.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

PIONEER 5645

Known Localities of Species	Tenure	Map Grid	Locality	Notes
giant freshwater lobster	SF	641 501	Boobyalla River	
giant freshwater lobster	SF	648 514	Boobyalla River	
giant freshwater lobster	Crwn/SF	689 573	Boobyalla River	bait lines
giant freshwater lobster	Crown	790 564	Corduroy Creek, Pioneer	
green and gold frog	Private	711 515	Winnaleah	
northeast forest snail	SF	605 505	Connors Road, Mt Horror	
northeast forest snail	SF	610 530	Mt Horror	
northeast forest snail	SF	615 534	South of Mt Horror	
northeast forest snail	SF	619 518	Gorge Creek, Mt Horror	
northeast forest snail	SF	628 518	Mt Horror Track	
northeast forest snail	SF	640 552	North of Swanee Creek	
eagles (wedge-tailed)	SF	Confidential	Near The Banca	nest
eagles (wedge-tailed)	SF	Confidential	Near Banca Race	nest

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes, below about 400 m alt., esp. Ringarooma River.
northeast forest snail	Rainforest, mixed forest or wet forest containing rainforest elements.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

POATINA 4837

Known Localities of Species	Tenure	Map Grid	Locality	Notes
eagles (wedge-tailed)	Private	Confidential	Near McRaes Hills	nest
ptunarra brown butterfly	HEC	870 710	Sandbanks Creek	colony

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
Great Lake ecosystem (all species)	Great Lake margin, benthos, sediments.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
pencil pine moth	Pencil pine forest.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

POKANA 4228

Species May Occur in Suitable Habitat	Habitat to Survey
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

PORT ARTHUR 5522

Known Localities of Species	Tenure	Map Grid	Locality	Notes
caddisfly *(Orphninotrichia maculata)*	Private	603 282	Sucklings Creek near Nubeena	
southeast stag beetles (Mt Mangana)	Private	652 277	Fire Tower Road	
southeast stag beetles (Mt Mangana)	Private	713 279	Coronation Road	
coastal birds (hooded plover)	Reserve	545 288	Roaring Beach - survey site	breeding site
coastal birds (short-tailed shearwater)	Crown	547 240	Wedge Island, Tasman Peninsula	colony
swift parrot	Private	602 294	2 km N of Nubeena on Nubeena Road	foraging area
swift parrot	Private	603 283	Nubeena	foraging area
swift parrot	Private	623 229	1 km east of Benjafields Ridge	foraging area
swift parrot	Private	624 234	1 km northeast of Benjafields Ridge	foraging area
swift parrot	Private	643 241	Benjafields Marsh	foraging area
swift parrot	Private	687 213	Carnarvon Bay	foraging area
swift parrot	FReserve	692 221	Mason Cove	foraging area
swift parrot	FReserve	693 224	Mason Cove	foraging area
swift parrot	FReserve	699 237	Stewarts Bay	foraging area
eagles (white-bellied sea-eagle)	Private	Confidential	Near Pearces Hill	nest
eagles (wedge-tailed)	SF	Confidential	Near Mount Koonya	nest (Meggs)
eagles (wedge-tailed)	SF	Confidential	Near Newmans Creek (KYOO3A)	nest (Turner)
marine turtles (leatherback)	Crown		Swimming close inshore to Port Arthur	1983 record

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
southeast stag beetles (broad-toothed)	Dry or wet forest with rotting logs and litter on the ground.
burgundy snail	Wet eucalypt forest.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
forty-spotted pardalote	Grassy dry forest and woodland with white gum within 3 km of the coast. Nubeena and Whites Beach area need surveying.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
southeast seastars (live-bearing seastar)	Intertidal rocky areas, on sandstone.
southeast stag beetles (Mt Mangana)	Wet forest containing decaying logs.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
swift parrot	Forest and woodland dominated by blue gum or black gum within 10 km of the coast, including slopes and ridges.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

PORT SORELL 4644

Known Localities of Species	Tenure	Map Grid	Locality	Notes
green and gold frog	Private	609 449	Hawley Beach	
green and gold frog	Private	612 453	Hawley Beach	
green and gold frog	Private	614 462	Hawley House	

green and gold frog	FReserve	662 444	Springlawn, Asbestos Range Nat. Park	
green and gold frog	FReserve	669 446	Springlawn, Asbestos Range Nat. Park	
green and gold frog	FReserve	671 448	Asbestos Range	
green and gold frog	FReserve	672 448	Asbestos Range National Park	
coastal birds (hooded plover)	FReserve	638 429	Springlawn Beach - survey site	breeding site
coastal birds (hooded plover)	FReserve	670 450	Bakers Beach - survey site	breeding site
coastal birds (hooded plover)	Reserve	606 477	Point Sorell - up to 1994	breeding site
coastal birds (hooded plover)	FReserve	634 446	Griffiths Point, Bakers Point - survey	breeding site
coastal birds (migratory waders)	FReserve	633 444	Griffiths Point to Penguin Island	feed & roost
coastal birds (little penguin)	FReserve	640 420	Rabbit and Shell Islands in Port Sorell	colony
coastal birds (little penguin, s-t shearwater)	Reserve	605 478	Point Sorell	colonies
eagles (wedge-tailed)	SF	Confidential	Southwest of Asbestos Range	nest
eagles (wedge-tailed)	SF	Confidential	Near Flowers Hill	nest
eagles (wedge-tailed)	SF	Confidential	Near Flowers Hill	nest

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
New Holland mouse	Dry coastal heathland and open heathy forest.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

PRECIPITOUS 4618

Known Localities of Species	Tenure	Map Grid	Locality	Notes
eagles (wedge-tailed)	FReserve	Confidential	Picton River area	nest near

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
pencil pine moth	Pencil pine forest.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

PRESERVATION 5851

Known Localities of Species	Tenure	Map Grid	Locality	Notes
eagles (wedge-tailed)	TA	Confidential	Clarke Island	nest near
coastal birds (hooded plover)	TA	948 117	Spike Bay, Clarke Island	breeding site
coastal birds (hooded plover)	TA	950 147	Maclaines Bay, Clarke Island	breeding site
coastal birds (little penguin, s-t shearwater)	FReserve	909 156	Rum Island	colonies
coastal birds (little penguin, s-t shearwater)		900 179	Preservation Island	colonies
coastal birds (little penguin)	Crown	887 192	Islets northwest of Preservation Island	colony

Species May Occur in Suitable Habitat	Habitat to Survey
coastal birds (fairy tern)	Sand or shingle beaches, unvegetated sites near estuaries and nearby lakes, and estuarine and offshore islands.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

PRION 4617

Known Localities of Species	Tenure	Map Grid	Locality	Notes
coastal birds (short-tailed shearwater)	FReserve	678 756	Chicken Island	colony
coastal birds (short-tailed shearwater)	FReserve	663 757	Hen Island	colony
coastal birds (little penguin, s-t shearwater)	FReserve	615 716	Ile du Golfe	colonies

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

PROFESSOR 3634

Known Localities of Species	Tenure	Map Grid	Locality	Notes
eagles (wedge-tailed)	SF	Confidential	Near Henty River	nest

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
orange-bellied parrot	Migration feeding habitat: saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast, including vegetated offshore islands.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

PROPSTING 4023

Species May Occur in Suitable Habitat	Habitat to Survey
orange-bellied parrot	Breeding and migration feeding habitat: buttongrass plains with eucalypt forest patches, saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

PROSPECT 5040

Known Localities of Species	Tenure	Map Grid	Locality	Notes
Australian grayling	Crown	193 069	North Esk River at Corra Linn	
green and gold frog	Private	007 020	South Esk River near Cherry Tree Hill	
green and gold frog	Private	085 012	Bowthorpe	
green and gold frog	Private	170 066	North of Evandale	
green and gold frog	Com'w	176 009	Fire training ponds, Launceston Airport	survey site
freshwater snails *(Beddomeia launcestonensis)*	SF	083 096	South Esk River below Trevallyn Dam	
eagles (wedge-tailed)	Private	Confidential	Near Grassy Hut Tier	nest near

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of the North Esk River.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.

quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

PUNCHEON 6053

Known Localities of Species	Tenure	Map Grid	Locality	Notes
coastal birds (hooded plover)		190 304	Tar Point to Thirsty Lagoon	breeding site
coastal birds (hooded plover)		128 389	Puncheon Point, Cape Barren Island	breeding site
coastal birds (hooded plover)		150 347	Little Creek, Cape Barren Island	breeding site
coastal birds (little penguin)	Crown	023 368	Ram Island	colony
coastal birds (little penguin)	Crown	026 362	Inner Islet, near Ram Island	colony
coastal birds (short-tailed shearwater)		110 373	Puncheon Island	colony
coastal birds (short-tailed shearwater)		120 379	Pelican Island	colony

Species May Occur in Suitable Habitat	Habitat to Survey
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

PYENGANA 5842

Known Localities of Species	Tenure	Map Grid	Locality	Notes
velvet worms (giant)	SF		Nephele Creek	
velvet worms (giant)	Private	852 274	Coromandel Hill	
velvet worms (giant)	Crwn / Pr	855 270	Powers Road	
velvet worms (giant)	SF	870 247	Argonaut Road	Horner '98
velvet worms (giant)	SF	871 217	Plantation west of Rayners Hill	Horner '98
velvet worms (giant)	SF	874 205	Southeast of Rayners Hill	Horner '98
velvet worms (giant)	SF	874 274	Siamese Road	
velvet worms (giant)	SF	875 235	Argonaut Road, NE of Rayners Hill	Horner '98
velvet worms (giant)	SF	877 241	Argonaut Road, north of Rayners Hill	Horner '98
velvet worms (giant)	SF	879 227	Western side of Rayners Hill	Horner '98
velvet worms (giant)	SF	892 226	Argonaut Road, southeast Rayners Hill	Horner '98
velvet worms (giant)	SF	895 228	Rayners Hill	
velvet worms (giant)	SF	903 272	Terryvale Link	
velvet worms (giant)	SF	904 218	Toms Gully	
velvet worms (giant)	SF	906 219	Argonauts Road, down of Toms Gully	Horner '98
velvet worms (giant)	SF	908 281	Hodges Creek	
velvet worms (giant)	SF	912 247	McAuliffs Hill	
velvet worms (giant)	SF	912 262	Powers Rivulet	
velvet worms (giant)	SF	914 222	Treloggens Creek	
velvet worms (giant)	SF	916 251	McAuliffs Hill	
velvet worms (giant)	SF	922 277	Mt Nisbet	
velvet worms (giant)	SF		Siamese Ridge, Mt Nisbet Priority Area	WPA
velvet worms (giant)	SF	932 200	Carters Marsh	
velvet worms (giant)	SF	938 253	Ericksons Road	
velvet worms (giant)	SF	941 279	Ericksons Road	
velvet worms (giant)	SF	946 248	Saxelby Creek	
velvet worms (giant)	SF / Priv	981 229	Launceston Creek	
northeast forest snail	SF	880 223	Near Rayners Hill	

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Middle and lower reaches of the George River.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.

velvet worms (giant)	Eucalypt forest with rotting logs.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
northeast forest snail	Rainforest, mixed forest or wet forest containing rainforest elements.
northeast stag beetles (3 species)	Wet forest with a well-developed litter layer on well-drained soils.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

QUAMBY BLUFF 4638

Known Localities of Species	Tenure	Map Grid	Locality	Notes
eagles (wedge-tailed)	SF	Confidential	Near Meander River	nest

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
pencil pine moth	Pencil pine forest.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

RAILTON 4442

Known Localities of Species	Tenure	Map Grid	Locality	Notes
Australian grayling	Crown	515 297	Mersey River downstream of Kimberley	
giant freshwater lobster	Private	434 253	Aitken Creek and catchment	key catchm't
giant freshwater lobster	Private	510 220	Redwater Creek	
giant freshwater lobster			Mersey River and tributaries	key catchm't
eagles (wedge-tailed)	FReserve	Confidential	Near Bonneys Tier	nest
eagles (wedge-tailed)	FReserve	Confidential	Near Bonneys Tier	nest

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of the Mersey River.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes, below about 400 m altitude.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

RAMINEA 4820

Known Localities of Species	Tenure	Map Grid	Locality	Notes
cave ecosystem *(Micropathus kiernani)*		Confidential	Dover area	
southeast stag beetles (Mt Mangana)	SF	855 125	Esperance River Road	

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
forty-spotted pardalote	Grassy dry forest and woodland with white gum within 3 km of the coast.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
southeast stag beetles (Mt Mangana)	Wet forest containing decaying logs.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
swift parrot	Forest and woodland dominated by blue gum or black gum within 10 km of the coast, including slopes and ridges.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

RAMSAY 3639

Species May Occur in Suitable Habitat	Habitat to Survey
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

RAOUL 5521

Known Localities of Species	Tenure	Map Grid	Locality	Notes
coastal birds (hooded plover)	FReserve	695 180	Safety Cove	breeding site
coastal birds (little penguin)	FReserve	694 167	Near Maingon Blowhole	colony
seals (Australian fur seal, NZ fur seal)	FReserve	648 118	Cape Raoul, Tasman Peninsula	haul-out site

Species May Occur in Suitable Habitat	Habitat to Survey
southeast stag beetles (broad-toothed and Mt Mangana)	Dry or wet forest with decaying logs and litter on the ground.
burgundy snail	Wet eucalypt forest.
forty-spotted pardalote	Grassy dry forest and woodland with white gum within 3 km of the coast.
southeast seastars (live-bearing seastar)	Intertidal rocky areas, on sandstone.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
swift parrot	Forest and woodland dominated by blue gum or black gum within 10 km of the coast, including slopes and ridges.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

RAVENSDALE 5630

Known Localities of Species	Tenure	Map Grid	Locality	Notes
swift parrot	Private	714 005	Barings Hill	foraging area
swift parrot	Private	739 085	2 km southeast of Shingle Hill	foraging area
eagles (wedge-tailed)	Com'w	Confidential	Near Black Hill	nest near
eagles (wedge-tailed)	Priv /C'w	Confidential	Near Sawfords Hill	nest near
eagles (wedge-tailed)	Com'w	Confidential	Near Sawfords Hill	nest
eagles (wedge-tailed)	Private	Confidential	Near Haytons Hill	nest near

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
forty-spotted pardalote	Grassy dry forest and woodland with white gum within 3 km of the coast.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
swift parrot	Forest and woodland dominated by blue gum or black gum within 10 km of the coast, including slopes and ridges.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

RAY 4419

Species May Occur in Suitable Habitat	Habitat to Survey
orange-bellied parrot	Breeding and migration feeding habitat: buttongrass plains with eucalypt forest patches, saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

RAZORBACK 4422

Known Localities of Species	Tenure	Map Grid	Locality	Notes
Pedder galaxias	FReserve	Confidential	Lake in Western Arthur Range	translocated

Species May Occur in Suitable Habitat	Habitat to Survey
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

RECHERCHE 4817

Known Localities of Species	Tenure	Map Grid	Locality	Notes
coastal birds (hooded plover)	Crown	951 799	Little Lagoon Beach	breeding site
coastal birds (hooded plover)	FRes/Crn	925 750	Rocky Bay	breeding site
coastal birds (short-tailed shearwater)	Crown	996 797	Actaeon Island	colony

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
southeast stag beetles (Mt Mangana)	Wet forest containing decaying logs.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
swift parrot	Forest and woodland dominated by blue gum or black gum within 10 km of the coast, including slopes and ridges.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

REEKARA 2259

Known Localities of Species	Tenure	Map Grid	Locality	Notes
orange-bellied parrot	Priv / Res	312 939	Bungaree Lagoon, King Island	historical '80
coastal birds (hooded plover)		310 995	Phoques Bay to Quarantine Bay	breeding site
coastal birds (hooded plover)			Pass River to Arrow	breeding site
coastal birds (short-tailed shearwater)		294 990	Whistler Point, King Island	colony
eagles (white-bellied sea-eagle)	Private	Confidential	Near Bungaree Lagoon	nest

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
King Island brown thornbill	Dry forest, woodland and scrubland.
orange-bellied parrot	Migration feeding habitat: saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast, including vegetated offshore islands.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.

RETREAT 5044

Known Localities of Species	Tenure	Map Grid	Locality	Notes
green and gold frog	Private	038 493	Greenburn, Bridport Road	
eagles (wedge-tailed)	Private	Confidential	Near Baker Tier	nest
eagles (wedge-tailed)	SF	Confidential	Near Retreat Road	nest
eagles (wedge-tailed)	Private	Confidential	Near Wattley Hill	nest near

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes, below about 400 m altitude.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

RIANA 4043

Known Localities of Species	Tenure	Map Grid	Locality	Notes
freshwater snails *(Beddomeia petterdi)*	Private	103 344	Blythe River tributary on Sth Riana Rd	type locality
giant freshwater lobster			Emu River and tributaries	key catchm't

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Leven River (middle and lower parts).
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes, below about 400 m alt., especially the Emu River, Blythe River and Leven River.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

RICHMOND 5226

Known Localities of Species	Tenure	Map Grid	Locality	Notes
green and gold frog	Private	207 642	St Virgils College area, Austins Ferry	
green and gold frog	Private	345 677	Ponds around Prospect House	
green and gold frog	Private	346 679	Ponds around Prospect House	
green and gold frog	Private	350 689	Daisy Bank	
green and gold frog	Council	357 672	Richmond sewage farm	
eagles (wedge-tailed)	Private	Confidential	Bourbon Creek area	nest
coastal birds (little tern, fairy tern)	Reserve		Pittwater Area, Sorell	historical site
coastal birds (migratory waders)	Reserve		Pittwater Area, Sorell	foraging site

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
great crested grebe	Key sites in Derwent River between New Norfolk and Glenorchy.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
swift parrot	Forest and woodland dominated by blue gum or black gum within 10 km of the coast, including slopes and ridges.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

RIEDLE 5827

Known Localities of Species	Tenure	Map Grid	Locality	Notes
forty-spotted pardalote	FReserve	839 704	North of Unfortunate Cove, Maria Is.	colony M 23
forty-spotted pardalote	FReserve	850 789	Mona Hill to Soldiers Beach, Maria Is.	colony M 7
forty-spotted pardalote	FReserve	885 790	Along Robinsons Creek, Maria Island	colony M 12
forty-spotted pardalote	FReserve	895 780	Along McGuiness Creek, Maria Island	colony M 13
forty-spotted pardalote	FReserve	905 773	Along Pine Hut Creek, Maria Island	colony M 14
forty-spotted pardalote	FReserve	905 765	Gully above The Red Rocks, Maria Is.	colony M 15
forty-spotted pardalote	FReserve	910 765	Gully above The Keyhole, Maria Island	colony M 16
forty-spotted pardalote	FReserve	916 760	Gully above Whalers Cove, Maria Is.	colony M 17
forty-spotted pardalote	FReserve	925 769	Along Montgomerys Creek, Maria Is.	colony M 18
forty-spotted pardalote	FReserve	870 760	Coastally around Shoal Bay, Maria Is.	colony M 19
forty-spotted pardalote	FReserve	840 760	Behind Encampment Cove, Maria Is.	colony M 20
forty-spotted pardalote	FReserve	850 760	Coast of Encampment Cove, Maria Is.	colony M 21
forty-spotted pardalote	FReserve	850 725	Extensively below the Isthmus, Maria Is	colony M 22
forty-spotted pardalote	FReserve	880 725	Extensively below the Isthmus, Maria Is	colony M 22
coastal birds (hooded plover)	FReserve	870 757	Shoal Bay, Maria Island	breeding site
coastal birds (hooded plover)	FReserve	876 750	Riedle Bay, Maria Island	breeding site
coastal birds (short-tailed shearwater)	FReserve	825 762	Point Lesueur, Maria Island	colony
coastal birds (short-tailed shearwater)	FReserve	912 758	Whalers Cove, Maria Island	colony
eagles (white-bellied sea-eagle)	FReserve	Confidential	Whalers Cove, Maria Island	nest
marine turtles (leatherback)	Crown		Swimming 1 nm east of Maria Island	1989 record

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.

swift parrot	Forest and woodland dominated by blue gum or black gum within 10 km of the coast, including slopes and ridges.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

RINGAROOMA 5643

Known Localities of Species	Tenure	Map Grid	Locality	Notes
freshwater snails *(Beddomeia tasmanica)*	Reserve	789 366	Weld River tributary on Tasman Hwy	
northeast forest snail	Private	645 345	Dead Horse Hill	
northeast forest snail	SF	670 390	Mt Paris Dam Road	
northeast forest snail	SF	693 362	Bells Hill	
northeast forest snail	SF	694 359	Bells Hill	
northeast forest snail	SF	698 394	Cascade River	
northeast forest snail	SF	705 395	Near East Creek	
northeast forest snail	SF	708 395	Mutual Road	
northeast forest snail	SF / FRes	712 328	Rattler Range	
northeast forest snail	SF	718 395	Near Cascade Dam	
northeast forest snail	SF	719 392	Mutual Road	
northeast forest snail	SF	721 391	Mutual Road	
northeast forest snail	SF	739 364	Star of Peace Plantation	
northeast forest snail	SF	743 351	Rattler Hill	
northeast forest snail	SF	744 351	Maa Louey Road	
northeast forest snail	SF	744 353	East of Rattler Hill	
northeast forest snail	SF	745 351	4 km southwest of Weldborough	
northeast forest snail	SF	745 353	East of Rattler Hill	
northeast forest snail	Private	790 362	Weldborough Pass	
northeast stag beetles (Simsons)	SF	743 350	Rattler Hill	
northeast stag beetles (Simsons)	SF / Priv	745 318	Sea View	
northeast stag beetles (Simsons)	Reserve	783 369	Weldborough Pass area	
eagles (wedge-tailed)	SF	Confidential	Near Cook Creek	nest

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes, below about 400 m alt., esp. the New River, Ringarooma River and Dorset River.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
northeast forest snail	Rainforest, mixed forest or wet forest containing rainforest elements, esp. in the Weldborough area.
northeast stag beetles (3 species)	Wet forest with a well-developed litter layer on well-drained soils.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

ROBBINS 3249

Known Localities of Species	Tenure	Map Grid	Locality	Notes
coastal birds (migrat. waders, 3 sp. of tern)	Res/Priv	200 890	Wallaby and Five Islets, Robbins Island	key site
coastal birds (migrat. waders, 3 sp. of tern)	Res/Priv	228 978	Bird Point, Robbins Island	key site
coastal birds (migrat. waders, 3 sp. of tern)	Res/Priv	253 983	Mosquito Inlet, Robbins Island	key site
coastal birds (migratory waders)	Reserve	240 870	Montagu Island	key site

coastal birds (short-tailed shearwater)	Res/Priv	North and southeast coast Robbins Island colonies

Species May Occur in Suitable Habitat	Habitat to Survey
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
orange-bellied parrot	Migration feeding habitat: saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast, including vegetated offshore islands.
coastal birds (fairy tern, white-fronted tern, migratory waders)	Sand or shingle beaches, unvegetated sites near estuaries and nearby lakes, and estuarine and offshore islands.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.

ROCHON 3252

Known Localities of Species	Tenure	Map Grid	Locality	Notes
keeled snail	FReserve	252 242	North Hummock	
coastal birds (fairy tern)	FReserve	270 236	Three Hummock Island	breeding
coastal birds (little penguin)	FReserve	195 253	Ranger Point east to Cape Rochon	colony
coastal birds (little penguin)	FReserve	262 190	Cape Adamson north to Cape Rochon	colony
coastal birds (short-tailed shearwater)	FReserve	164 205	Three Hummock Island, Home Paddock	colony
coastal birds (short-tailed shearwater)	FReserve	195 254	Three Hummock Island, Ranger Point	colony
coastal birds (short-tailed shearwater)	FReserve	250 260	Three Hummock Island, Mermaid Bay	colony
eagles (white-bellied sea-eagle)	FReserve	Confidential	Near North Hummock	nest
marine turtles (leatherback)	Com'w		Swimming 10 nm N of Hummocks	1964 to 1982
marine turtles (leatherback)	Crown		Swimming off northern tip of T H. Island	1972 to 1998

Species May Occur in Suitable Habitat	Habitat to Survey
keeled snail	Wet eucalypt forest on Three Hummock Island - needs survey
orange-bellied parrot	Migration feeding habitat: saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast, including vegetated offshore islands.
coastal birds (fairy tern)	Sand or shingle beaches, unvegetated sites near estuaries and nearby lakes, and estuarine and offshore islands.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

ROCKY CAPE 3647

Known Localities of Species	Tenure	Map Grid	Locality	Notes
Australian grayling	Reserve	690 723	Detention R. upstream of Bass Highway	
giant freshwater lobster	Reserve	681 705	Detention River	key catchm't
giant freshwater lobster	Reserve		Detention River and tributaries	key catchm't
giant freshwater lobster	Crown		Hellyer River and tributaries	key catchm't
giant freshwater lobster	Private	707 722	Wilsons Creek	
coastal birds (hooded plover)	Reserve	605 763	Peggs Beach Coastal Reserve	breeding site
coastal birds (hooded plover)	Reserve	675 745	Hellyer Beach	breeding site
coastal birds (hooded plover)	Reserve	735 761	Rocky Cape to Detention River	breeding sites
coastal birds (little penguin)	FReserve	739 765	West coast to Picnic Beach	colonies
coastal birds (short-tailed shearwater)	Reserve	710 743	Forwards Beach, Rocky Cape	colony
eagles (wedge-tailed)	Private	Confidential	Edgcumbe area	nest
eagles (wedge-tailed)	Private	Confidential	Rocky Cape	nest
eagles (white-bellied sea-eagle)	Private	Confidential	Hellyer Plain	nest
eagles (white-bellied sea-eagle)	FReserve	Confidential	Sisters Beach area	nest

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of the Detention River.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes, below about 400 m altitude.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
New Holland mouse	Dry coastal heathland and open heathy forest.
velvet worms (northwest)	Wet forest with rotting logs and woody ground litter.
orange-bellied parrot	Migration feeding habitat: saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast, including vegetated offshore islands.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

ROGER 3245

Known Localities of Species	Tenure	Map Grid	Locality	Notes
giant freshwater lobster	SF	310 500	Eckberg Creek	
giant freshwater lobster	FReserve	332 528	Roger River	
freshwater snails *(Beddomeia gibba)*	SF	208 543	Salmon River Rd, north of Lerunna Rd	type locality
freshwater snails *(Beddomeia salmonis)*	SF	201 535	Salmon River at Salmon Road crossing	
freshwater snails *(Beddomeia salmonis)*	SF	210 540	Salmon River tributary at road junction	type locality
freshwater snails *(Beddomeia topsiae)*	Private	381 565	Williams Creek tributary, Trowutta Rd	type locality
velvet worms (northwest)	SF	207 572	Lunta Tier	
velvet worms (northwest)	SF	277 552	Christmas Hills	
velvet worms (northwest)	SF	291 579	Christmas Hills	
velvet worms (northwest)	SF	292 597	Christmas Hills	
velvet worms (northwest)	SF	300 591	Christmas Hills	
velvet worms (northwest)	SF	302 592	Christmas Hills	
velvet worms (northwest)	SF	304 586	Christmas Hills	
eagles (wedge-tailed)	SF	Confidential	Near Terragomna Road	nest
eagles (wedge-tailed)	Private	Confidential	Two sites on the Roger River	nests x 2
eagles (wedge-tailed)	Private	Confidential	Roger River	nest near

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Middle and lower parts of the Duck River.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes and Arthur River system, below about 400 m alt., especially the Duck River.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
keeled snail	Forest with deep damp litter.
velvet worms (northwest)	Wet forest with rotting logs and woody ground litter.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

ROOKERY 4024

Species May Occur in Suitable Habitat	Habitat to Survey
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

ROSEBERY 3637

Species May Occur in Suitable Habitat	Habitat to Survey
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

ROSS 5434

Known Localities of Species	Tenure	Map Grid	Locality	Notes
ptunarra brown butterfly	Private	581 467	North of Glen Morriston Rivulet	colony
Swan galaxias	SF	Confidential	Headwaters, Swan and Macquarie Rivers	translocated
eagles (wedge-tailed)	Private	Confidential	Near Glen Morriston Rivulet	nest
eagles (wedge-tailed)	Private	Confidential	Near Bells Bottom	nest

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
ptunarra brown butterfly	Native grassland or woodland with more than 15% cover of tussock grass.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
Swan galaxias	In catchment upstream of map sites.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

ROSSARDEN 5638

Known Localities of Species	Tenure	Map Grid	Locality	Notes
eagles (wedge-tailed)	Crown	Confidential	Near Coachies Marsh	nest
eagles (wedge-tailed)	Private	Confidential	Near Hogg Hill	nest near

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

ROWALLEN 4237

Known Localities of Species	Tenure	Map Grid	Locality	Notes
pencil pine moth	FReserve	374 721	Solomons Jewels	colony
pencil pine moth	FReserve	379 733	Northeast of Lake Loane	colony
eagles (wedge-tailed)	SF	Confidential	Near Lake Rowallan	nest
eagles (wedge-tailed)	SF	Confidential	Near Lake Rowallan	nest

Species May Occur in Suitable Habitat	Habitat to Survey
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes, below about 400 m alt., esp. the River Forth.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
pencil pine moth	Pencil pine forest.
ptunarra brown butterfly	Native grassland or woodland with more than 15% cover of tussock grass.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

ROYALTY 5631

Known Localities of Species	Tenure	Map Grid	Locality	Notes
Swan galaxias	SF	Confidential	Headwaters, Swan and Macquarie Rivers	translocated
Swan galaxias	Private	Confidential	Headwaters, Swan and Macquarie Rivers	translocated
coastal birds (hooded plover)	Reserve	780 123	Little Swanport	breeding site
coastal birds (fairy tern, little tern)	Reserve	780 121	Little Swanport - infrequent	feed & roost
swift parrot	Private	752 144	Bresnehans Road	foraging area
swift parrot	Private	780 128	Little Swanport area	foraging area
swift parrot	Private	799 132	Little Swanport area	foraging area
eagles (wedge-tailed)	Crown	Confidential	Near Rocka Rivulet	nest near
eagles (wedge-tailed)	Private	Confidential	Near Long Ridge	nest
eagles (wedge-tailed)	SF	Confidential	Near Little Swanport River	nest near

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
ptunarra brown butterfly	Native grassland or woodland with more than 15% cover of tussock grass.
coastal birds (fairy tern)	Sand or shingle beaches, unvegetated sites near estuaries and nearby lakes, and estuarine and offshore islands.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
Swan galaxias	In catchment upstream of map sites.
swift parrot	Forest and woodland dominated by blue gum or black gum within 10 km of the coast, including slopes and ridges.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

ROYS 5636

Known Localities of Species	Tenure	Map Grid	Locality	Notes
eagles (wedge-tailed)	SF	Confidential	Near Burnt Hill	nest
eagles (wedge-tailed)	SF	Confidential	Near Splitters Gully	nest
eagles (wedge-tailed)	Private	Confidential	Near Robins Lawn Hill	nest near

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.

ptunarra brown butterfly	Native grassland or woodland with more than 15% cover of tussock grass.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

RUFUS 4233

Known Localities of Species	Tenure	Map Grid	Locality	Notes
pencil pine moth	FReserve	260 392	Forgotten Lake	colony
pencil pine moth	FReserve	272 392	Shadow Lake	colony

Species May Occur in Suitable Habitat	Habitat to Survey
great crested grebe	Lakes, rivers and estuaries.
pencil pine moth	Pencil pine forest.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

RUGBY 4220

Known Localities of Species	Tenure	Map Grid	Locality	Notes
orange-bellied parrot	FReserve	192 014	Hammond Point	historical '80
orange-bellied parrot	FReserve	386 038	Old River, Bathurst Harbour	historical '80

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
orange-bellied parrot	Breeding and migration feeding habitat: buttongrass plains with eucalypt forest patches, saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

RUNNYMEDE 5427

Known Localities of Species	Tenure	Map Grid	Locality	Notes
southeast stag beetles (broad-toothed)	Private	538 712	Fluffem Creek	
southeast stag beetles (broad-toothed)	SF	547 703	MM25A forestry coupe	
southeast stag beetles (broad-toothed)	Private	569 790	Mt Calvary	
southeast stag beetles (broad-toothed)	Private	575 763	Southeast of Jobs Hill	
southeast stag beetles (broad-toothed)	Private	581 760	West of Adams Hill	
swift parrot	Private	416 713	Silver Hill	foraging area
swift parrot	Private	426 727	Southeast of Black Charlies Sugarloaf	foraging area
eagles (wedge-tailed)	SF	Confidential	Near Burrows Sugarloaf	nest near

Species May Occur in Suitable Habitat	Habitat to Survey
southeast stag beetles (broad-toothed)	Dry or wet forest with rotting logs and litter on the ground. West of Wielangta area needs survey.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.

swift parrot	Forest and woodland dominated by blue gum or black gum within 10 km of the coast, including slopes and ridges.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

SADDLEBACK 5641

Known Localities of Species	Tenure	Map Grid	Locality	Notes
velvet worms (giant)	SF	728 128	Rosedale Flat	
velvet worms (giant)	FReserve	749 163	Mathinna Falls Forest Reserve	Richards '99
velvet worms (giant)	FReserve	750 163	Mathinna Falls	
velvet worms (giant)	SF	752 155	Mathinna Falls	
velvet worms (giant)	SF	763 122	King Ridge	
velvet worms (giant)	SF	782 115	Claytons Road	
velvet worms (giant)	SF	782 170	Symonds Road, east of Mathinna Falls	Horner '98
velvet worms (giant)	SF	788 165	Robinsons Creek	
velvet worms (giant)	SF	797 172	Carters Road, Hauler Ridge	Horner '98
northeast forest snail	SF	608 168	Sweets Creek	
northeast forest snail	FReserve	751 174	Delvin Creek, Mathinna Falls	
eagles (wedge-tailed)	SF	Confidential	Near Dilgers Hill	nest near

Species May Occur in Suitable Habitat	Habitat to Survey
velvet worms (giant)	Eucalypt forest with rotting logs.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
northeast forest snail	Rainforest, mixed forest or wet forest containing rainforest elements.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

SALTWATER 2459

Known Localities of Species	Tenure	Map Grid	Locality	Notes
coastal birds (fairy tern)	FReserve	525 900	Sea Elephant River mouth	breeding site
coastal birds (hooded plover)	FReserve	524 910	Lake Martha Lavina to Sea Elephant	breeding site
eagles (white-bellied sea-eagle)	Reserve	Confidential	Near Saltwater Creek	nest

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
King Island brown thornbill	Dry forest, woodland and scrubland.
orange-bellied parrot	Migration feeding habitat: saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast, including vegetated offshore islands.
coastal birds (fairy tern)	Sand or shingle beaches, unvegetated sites near estuaries and nearby lakes, and estuarine and offshore islands.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
southern hairy red snail	Tea tree, melaleuca, banksia scrub or wet eucalypt forest within 5 km of the coast.

SANDSPIT 5627

Known Localities of Species	Tenure	Map Grid	Locality	Notes
southeast stag beetles (broad-toothed)	SF	679 721	Cone Hill	
southeast stag beetles (broad-toothed)	SF	683 750	Upper Wielangta Creek	

southeast stag beetles (broad-toothed)	SF	686 715	Sandspit Forest Reserve	
southeast stag beetles (broad-toothed)	FReserve	687 711	Sandspit Forest Reserve	
southeast stag beetles (broad-toothed)	SF	709 783	Splitters Creek	
southeast stag beetles (broad-toothed)	SF	748 730	Ringrove Razorback	
coastal birds (short-tailed shearwater)	Crown	799 782	Lachlan Island, off Sandspit Point	colony
coastal birds (fairy tern, little tern)	Reserve	765 778	Sandspit River, including near mouth	breeding site
coastal birds (hooded plover)	Reserve	780 772	Earlham Lagoon and Rheban Beach	breeding site
coastal birds (migratory waders)	Reserve	783 771	Mouth of Earlham Lag. and Sandspit R	feed & roost
swift parrot	SF	690 728	Blue Gum Spur	nest
swift parrot	SF	692 720	Blue Gum Spur	nest
swift parrot	Private	728 760	1.5 km southeast of Loafers Hill	foraging area
swift parrot	Private	731 764	SE of Loafers Hill, Sandspit River	foraging area
swift parrot	Private	738 787	2 km southwest of Rheban	foraging area
swift parrot	Private	740 797	2 km west of Rheban	foraging area
swift parrot	Private	740 799	2 km west of Rheban	foraging area
swift parrot	Private	745 770	3 km E of Loafers Hill on Rheban Road	foraging area
swift parrot	Private	745 786	2 km southwest of Rheban	foraging area
swift parrot	Private	745 787	SW of Rheban on Griffiths Rivulet	foraging area
swift parrot	Private	757 794	Rheban and surrounds	foraging area
swift parrot	Private	765 724	500 m northwest of Cockle Bay	foraging area
swift parrot	Private	765 768	North of Earlham Hill on Rheban Road	foraging area
swift parrot	Private	773 731	Boot Bay	foraging area
swift parrot	SF	693 721	Blue Gum Spur	nest area
swift parrot	SF	748 724	Ringrove Razorback	nest area
swift parrot	SF	749 731	Ringrove Razorback	nest area
eagles (wedge-tailed)	SF	Confidential	Near Prosser Sugarloaf	nest near

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
broad-striped ghost moth	Wielangta State Forest - needs survey
southeast stag beetles (broad-toothed)	Dry or wet forest with rotting logs and litter on the ground.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
forty-spotted pardalote	Grassy dry forest and woodland with white gum within 3 km of the coast.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
coastal birds (fairy tern, little tern, migratory waders)	Sand or shingle beaches, unvegetated sites near estuaries and nearby lakes, and estuarine and offshore islands.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
swift parrot	Forest and woodland dominated by blue gum or black gum within 10 km of the coast, including slopes and ridges.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

SARAH 3630

Known Localities of Species	Tenure	Map Grid	Locality	Notes
eagles (white-bellied sea-eagle)	FReserve	Confidential	Near Shamrock Point	nest

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.

orange-bellied parrot	Migration feeding habitat: saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast, including vegetated offshore islands.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

SAVAGE RIVER 3440

Species May Occur in Suitable Habitat	Habitat to Survey
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

SCAMANDER 6040 (see Beaumaris 6041, Falmouth 6040)

SCHOUTEN 6031

Known Localities of Species	Tenure	Map Grid	Locality	Notes
coastal birds (hooded plover)	FReserve		Sandy coastline of Schouten Island	breeding site
coastal birds (short-tailed shearwater)	FReserve	080 095	Taillefer Rocks, south of Schouten Is.	colony
eagles (white-bellied sea-eagle)	FReserve	Confidential	Near Western Gully	nest
eagles (white-bellied sea-eagle)	FReserve	Confidential	Near Western Gully	nest
eagles (white-bellied sea-eagle)	FReserve	Confidential	Near Milligans Hill	nest
eagles (wedge-tailed)	FReserve	Confidential	Near Mount Story	nest
eagles (white-bellied sea-eagle)	FReserve	Confidential	Near Point Geographe	nest
eagles (white-bellied sea-eagle)	FReserve	Confidential	Trumpeter Bay area	nest
marine turtles (leatherback)	Crown		Swimming Freycinet to Schouten Island	1993 to 1997
marine turtles (leatherback)	Crown		Swimming south end of Schouten Island	1998 record

Species May Occur in Suitable Habitat	Habitat to Survey
New Holland mouse	Dry coastal heathland and open heathy forest.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

SCOTTS 4423

Known Localities of Species	Tenure	Map Grid	Locality	Notes
broad-striped ghost moth	FReserve	427 351	Scotts Peak Dam area	
caddisfly (*Oxyethira mienica*)	FReserve	486 398	Creek south of Condominium Creek	

Species May Occur in Suitable Habitat	Habitat to Survey
broad-striped ghost moth	Shrubby woodland and sedgeland.
Lake Pedder earthworm	Shore and sediments of Lake Pedder.
Pedder galaxias	Tributaries of the Lake Pedder impoundment.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

SCOTTSDALE 5444

Known Localities of Species	Tenure	Map Grid	Locality	Notes
giant freshwater lobster	SF / Priv	548 430	Arnon River	key catchm't
giant freshwater lobster	SF	561 469	Kamona Creek	key catchm't

giant freshwater lobster	P/Res/SF		Great Forester River and tributaries	key catchm't
freshwater snails *(Beddomeia minima)*			Small stream near Scottsdale	no site given
northeast forest snail	Private		Scottsdale	
northeast forest snail	SF	502 442	East of Mt Stronach	
northeast forest snail	SF	538 466	Arnon River Kamona	
northeast forest snail	SF	565 473	Duncans Road, Kamona	
burrowing crayfish (Scottsdale)	SF	483 449	Upstream of Jensens Road	Richards '97
burrowing crayfish (Scottsdale)	SF	485 449	Seepage entering Ruby Creek	Richards '97
burrowing crayfish (Scottsdale)	SF	491 458	Upstream of coupe SF102A	Richards '97
burrowing crayfish (Scottsdale)	SF	493 458	Upstream of coupe SF 102A	Richards '97
burrowing crayfish (Scottsdale)	SF	495 459	Adjacent to coupe SF 102A	Richards '97
burrowing crayfish (Scottsdale)	SF	496 460	Adjacent to coupe SF 102A	Richards '97
burrowing crayfish (Scottsdale)	SF	496 458	Class 4 entering Ruby Creek	Richards '97
burrowing crayfish (Scottsdale)	SF	497 462	Ruby Creek upstream of class 4	Richards '97
burrowing crayfish (Scottsdale)	SF	496 464	Class 4 flowing in from SF 102A	Richards '97
burrowing crayfish (Scottsdale)	SF	498 463	Ruby Creek downstream of SF 102A	Richards '97
burrowing crayfish (Scottsdale)	SF	498 464	Class 4 entering Ruby Creek	Richards '97
burrowing crayfish (Scottsdale)	SF	502 466	Upstream of Class 4 near Ruby Creek	Richards '97
burrowing crayfish (Scottsdale)	SF	502 468	Downstream of Class 4 creek	Richards '97
burrowing crayfish (Scottsdale)	SF	503 469	Downstream of Class 4 creek	Richards '97
burrowing crayfish (Scottsdale)	SF	503 470	Downstream of waterhole	Richards '97
burrowing crayfish (Scottsdale)	SF	503 471	Class 4 creek entering Ruby Creek	Richards '97
burrowing crayfish (Scottsdale)	SF	501 478	Swamp upstream of China Creek	Richards '97
burrowing crayfish (Scottsdale)	SF	505 475	Buttongrass swamp	Richards '97
burrowing crayfish (Scottsdale)	SF	493 496	Near Surveyors Creek	
burrowing crayfish (Scottsdale)	SF	503 477	Near China Creek	
burrowing crayfish (Scottsdale)	SF	509 413	Hang Dog Creek	
burrowing crayfish (Scottsdale)	SF	518 450	Forester Flats	
burrowing crayfish (Scottsdale)	SF	520 444	Forester Flats	
eagles (wedge-tailed)	Private	Confidential	Tulendeena area	nest near
eagles (wedge-tailed)	SF	Confidential	Tulendeena area	nest
eagles (wedge-tailed)	SF	Confidential	Near Davis Hill	nest
eagles (wedge-tailed)	SF	Confidential	Near Loones Road	nest (Burr)

Species May Occur in Suitable Habitat	**Habitat to Survey**
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes, below about 400 m alt., esp. the Great Forester River.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
northeast forest snail	Rainforest, mixed forest or wet forest containing rainforest elements.
burrowing crayfish (Scottsdale)	Buttongrass and heathy plains, marshy areas, seeps, floodplains and riparian areas along the Great Forester River.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

SEA ELEPHANT 2458

Known Localities of Species	Tenure	Map Grid	Locality	Notes
orange-bellied parrot	FRes/Crn	523 884	Sea Elephant	migration '90
orange-bellied parrot	Res / Priv	526 838	Sea Elephant Blowhole	migration '92
orange-bellied parrot	Crown	519 888	Sea Elephant	migration '92
coastal birds (fairy tern)	FReserve	525 900	Mouth of Sea Elephant River	breeding site
coastal birds (hooded plover)	FReserve	533 890	Lake Martha Lavina to Sea Elephant	breeding site
coastal birds (little penguin, s-t shearwater)	Crown	570 871	Councillor Island off Cowper Point	colony
coastal birds (short-tailed shearwater)	FReserve	541 879	Cowper Point, King Island	colony
coastal birds (short-tailed shearwater)	FReserve	528 839	Naracoopa Beach (Blowhole), King Is.	colony
coastal birds (short-tailed shearwater)	FReserve	538 888	Sea Elephant, King Island	colony

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
King Island brown thornbill	Dry forest, woodland and scrubland.
orange-bellied parrot	Migration feeding habitat: saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast, including vegetated offshore islands.
coastal birds (fairy tern)	Sand or shingle beaches, unvegetated sites near estuaries and nearby lakes, and estuarine and offshore islands.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
southern hairy red snail	Tea tree, melaleuca, banksia scrub or wet eucalypt forest within 5 km of the coast.

SELINA 3836

Species May Occur in Suitable Habitat	Habitat to Survey
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

SELLARS 6056

Known Localities of Species	Tenure	Map Grid	Locality	Notes
coastal birds (fairy tern, little tern)	Res/Crwn	095 623	Cameron Inlet, entrance to spit	breeding site
coastal birds (hooded plover)	Res/Crwn	096 650	Planter Beach	breeding site
coastal birds (migratory waders)	Res/Crwn	060 598	Cameron Inlet	feed & roost
eagles (white-bellied sea-eagle)	Reserve	Confidential	Near Bushys Lagoon	nest
eagles (white-bellied sea-eagle)	Reserve	Confidential	Near Sandy Lagoon	nest

Species May Occur in Suitable Habitat	Habitat to Survey
Bass Strait wombat	Heath, scrub, woodland and pasture.
Australian grayling	Lower and middle reaches of coastal rivers.
dwarf galaxiid	Slow-flowing and still waters with aquatic vegetation.
great crested grebe	Lakes, rivers and estuaries.
coastal birds (fairy tern, little tern)	Sand or shingle beaches, unvegetated sites near estuaries and nearby lakes, and estuarine and offshore islands.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

SERPENTINE 4026

Known Localities of Species	Tenure	Map Grid	Locality	Notes
cave ecosystem (little six-eyed spider)	FReserve	Confidential	Gordon River below Denison junction	

Species May Occur in Suitable Habitat	Habitat to Survey
Hickmans pygmy mountain shrimp	Buttongrass areas within the original Lake Pedder-Serpentine drainage.
Pedder galaxias	Tributaries of the Lake Pedder impoundment.
Lake Pedder earthworm	Shore and sediments of Lake Pedder.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

SETTLEMENT 4021

Known Localities of Species	Tenure	Map Grid	Locality	Notes
orange-bellied parrot	FReserve	145 130	Fitzroy Point	historical '80
orange-bellied parrot	FReserve	Confidential	Towterer River and surrounding plains	survey 1999
orange-bellied parrot	FReserve	899 360	Ummarrah Creek	historical '81
orange-bellied parrot	FReserve	151 129	Fitzroy Point, Heather Bay	historical '80
orange-bellied parrot	FReserve	039 105	Sandblow Bay	historical '79
orange-bellied parrot	FReserve	Confidential	Bond Bay	breeding '93
orange-bellied parrot	FReserve	Confidential	Paradise Lagoon	breeding '93
orange-bellied parrot	FReserve	Confidential	Dennis Gulch	breeding '93
orange-bellied parrot	FReserve	Confidential	Trepanner Creek	breeding '93
coastal birds (fairy tern)	FReserve	120 109	Bond Bay	breeding site
coastal birds (short-tailed shearwater)	FReserve	013 133	Hobbs Island	colony
coastal birds (hooded plover)	FReserve	010 175	Wreck Bay	breeding site
coastal birds (hooded plover)	FReserve	025 136	Beach north of Alfhild Bight	breeding site
coastal birds (hooded plover)	FReserve	027 150	Towterer Beach	breeding site
coastal birds (hooded plover)	FReserve	037 107	Sandblow Bay	breeding site
eagles (white-bellied sea-eagle)	FReserve	Confidential	Near Brooks Reach	nest

Species May Occur in Suitable Habitat	Habitat to Survey
orange-bellied parrot	Breeding and migration feeding habitat: buttongrass plains with eucalypt forest patches, saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast.
coastal birds (fairy tern)	Sand or shingle beaches, unvegetated sites near estuaries and nearby lakes, and estuarine and offshore islands.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

SEYMOUR 6037 (on Bicheno-Seymour sheet)

Known Localities of Species	Tenure	Map Grid	Locality	Notes
Australian grayling	Crown	037 742	Along Douglas River, Tasman Highway	
velvet worms (blind)	SF	003 718	Denison Rivulet	
velvet worms (blind)	SF	031 777	Doctors Creek	
green and gold frog	Crown	068 776	Seymour Swamp	key site
green and gold frog	Crown	075 774	Seymour Swamp	key site
coastal birds (hooded plover)	Reserve	049 710	Denison Beach - survey site	breeding site
coastal birds (hooded plover)	Reserve	067 760	Seymour Beach - survey site	breeding site
coastal birds (hooded plover)	Reserve	072 787	Templestowe Beach - survey site	breeding site
coastal birds (short-tailed shearwater)	Private	084 778	Long Point	colony

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of the Douglas River and Apsley River.
velvet worms (blind)	Eucalypt forest with rotting logs.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
swift parrot	Forest and woodland dominated by blue gum or black gum within 10 km of the coast, including slopes and ridges.

SHEFFIELD 4441

Known Localities of Species	Tenure	Map Grid	Locality	Notes
Australian grayling	Reserve	573 169	Mersey River at Kimberley bridge	
Australian grayling	Reserve	577 170	Mersey River at Kimberley bridge	
Australian grayling	Private	583 178	Mersey River downstream of Kimberley	
giant freshwater lobster	SF	442 102	Minnow River tributary	
giant freshwater lobster	Private	528 152	Dasher River	
giant freshwater lobster	Priv/Crwn		Mersey River, Don River and tributaries	key catchm'ts
green and gold frog	Private	566 127	Weegena Road	key site
green and gold frog	Private	568 127	Weegena Road	key site
green and gold frog	Private	569 107	Weegena Farm	key site
eagles (wedge-tailed)	SF	Confidential	Near Sheffield	nest
eagles (wedge-tailed)	Crown	Confidential	Near Beulah	nest
eagles (wedge-tailed)	SF	Confidential	Near Long Hill	nest near
eagles (wedge-tailed)	SF	Confidential	Near Bass Highway	nest

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of the Mersey River.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes, below about 400 m alt., esp. the Mersey River, Minnow River, Dasher and Don Rivers.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

SISTER 5760

Known Localities of Species	Tenure	Map Grid	Locality	Notes
coastal birds (fairy tern)		818 001	North East River, lagoon and surrounds	breeding site
coastal birds (little penguin, s-t shearwater)	FReserve	785 055	Inner Sister Island	colonies
coastal birds (little penguin, s-t shearwater)	FRes/Priv	850 100	Outer Sister Island	colonies
coastal birds (little penguin, s-t shearwater)	Crown	572 065	Craggy Island, west of Inner Sister Is.	colonies
coastal birds (little penguin, s-t shearwater)	FReserve	Off Map	Rodondo Island	colonies
coastal birds (little penguin, s-t shearwater)	Crown	Off Map	East Moncoeur	colonies
coastal birds (little penguin, s-t shearwater)	FReserve	Off Map	West Moncoeur, S of Wilsons Prom.	colonies
coastal birds (little penguin, s-t shearwater)	Crown	Off Map	Hogan Group, Hogan Island	colonies
coastal birds (little penguin, s-t shearwater)	FReserve	Off Map	Curtis Island	colonies
coastal birds (little penguin, s-t shearwater)	Crown	Off Map	Kent Group, North East Island	colonies
coastal birds (little penguin, s-t shearwater)	Crown	Off Map	Kent Group, South West Island	colonies

coastal birds (little penguin, s-t shearwater)		Off Map	Deal Island	colonies
coastal birds (little penguin, s-t shearwater)	Crown	Off Map	Hogan Group, Long Islet	colonies
coastal birds (little penguin, s-t shearwater)	Crown	Off Map	Hogan Group, East Islet	colonies
coastal birds (little penguin, s-t shearwater)	Crown	Off Map	Hogan Group, Round Islet	colonies
coastal birds (little penguin, s-t shearwater)	Crown	Off Map	Hogan Group, Twin Islets	colonies
coastal birds (short-tailed shearwater)	Crown	Off Map	Cone Islet	colony
coastal birds (short-tailed shearwater)	Crown	Off Map	Devils Tower	colony
eagles (white-bellied sea-eagle)	Private	Confidential	Near Stanley Point	nest
eagles (white-bellied sea-eagle)	Reserve	Confidential	Outer Sister Island	nest
seals (Australian fur seal)		Off Map	Judgement Rocks near Deal Island	breeding site
seals (Australian fur seal)	FReserve	Off Map	West Moncoeur, S of Wilsons Prom.	breeding site
seals (Australian fur seal)		Off Map	Wright Rocks, southeast of Deal Island	haul-out site

Species May Occur in Suitable Habitat	Habitat to Survey
coastal birds (fairy tern)	Sand or shingle beaches, unvegetated sites near estuaries and nearby lakes, and estuarine and offshore islands.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

SKELETON 4625

Species May Occur in Suitable Habitat	Habitat to Survey
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

SMITHTON 3447

Known Localities of Species	Tenure	Map Grid	Locality	Notes
Australian grayling	Crown	400 768	Duck River up from Smithton Bridge	
giant freshwater lobster	Private		Deep Creek, Smithton	key catchm't
giant freshwater lobster	SF/P/Res		Black River and tributaries	key catchm't
velvet worms (northwest)	Crwn/Prv	561 743	Black River	
coastal birds (fairy tern)	Crown	576 778	Black River Beach Spit	breeding site
coastal birds (hooded plover)	Reserve	582 776	Peggs Beach	breeding site
coastal birds (hooded plover)	Crown	575 785	Black River Beach	breeding site
eagles (wedge-tailed)	Private	Confidential	Near Deep Creek	nest near
eagles (white-bellied sea-eagle)	Private	Confidential	Near Copper Mine Point	nest
eagles (white-bellied sea-eagle)	Private	Confidential	Near Deep Creek Bay	nest

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of the Duck River and Black River.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes, below about 400 m alt., esp. the Duck River.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur. Key area for species.

keeled snail	Forest with deep damp litter, W half of map.
velvet worms (northwest)	Wet forest with rotting logs and woody ground litter.
orange-bellied parrot	Migration feeding habitat: saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast, including vegetated offshore islands.
coastal birds (fairy tern)	Sand or shingle beaches, unvegetated sites near estuaries and nearby lakes, and estuarine and offshore islands.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

SNOW 5635

Known Localities of Species	Tenure	Map Grid	Locality	Notes
ptunarra brown butterfly	Private	605 535	Hortons Creek	colony
ptunarra brown butterfly	Private	609 510	Hortons Creek	colony
ptunarra brown butterfly	Private	618 569	Harrimount Road	colony
ptunarra brown butterfly	Private	634 586	Harrimount Marsh	colony
ptunarra brown butterfly	SF	652 572	West of Bens Marsh	colony
ptunarra brown butterfly	Private	662 579	Bens Marsh	colony
ptunarra brown butterfly	Private	673 576	Bens Marsh	colony
ptunarra brown butterfly	Private	675 595	Snowy River North	colony
ptunarra brown butterfly	SF	686 528	Snowy River	colony
ptunarra brown butterfly	SF	688 527	Snowy River	colony
ptunarra brown butterfly	SF	693 533	Snowy River	colony
ptunarra brown butterfly	SF	705 555	Ferrars Tier	colony
Swan galaxias	FReserve	Confidential	Headwaters, Swan and Macquarie Rivers	translocated
eagles (wedge-tailed)	Private	Confidential	Near Harrimount Marsh	nest
eagles (wedge-tailed)	SF	Confidential	Near Badajos Tier	nest
eagles (wedge-tailed)	FReserve	Confidential	Near Snow Hill	nest
eagles (wedge-tailed)	SF	Confidential	Near Ferrars Tier	nest near
eagles (wedge-tailed)	SF	Confidential	Near Snow Hill	nest

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
ptunarra brown butterfly	Native grassland or woodland with more than 15% cover of tussock grass.
Swan galaxias	In catchment upstream of map sites.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

SOLITARY 4224

Known Localities of Species	Tenure	Map Grid	Locality	Notes
caddisfly *(Taskiria mccubbini)*	FReserve	343 440	Lake Pedder	type locality
caddisfly *(Taskiria mccubbini)*	FReserve	210 497	Near Forest Creek, Lake Pedder shore	Jackson '99
caddisfly *(Taskiropsyche lacustris)*	FReserve	343 440	Lake Pedder, pre-flooding	type locality
Hickmans pygmy mountain shrimp	FReserve	222 495	Below Coronation Peak	
Lake Pedder earthworm	FReserve	320 430	Original Lake Pedder beach - now lost	only record
Pedder galaxias	FReserve	Confidential	Lake Pedder area	natural pop.
Pedder galaxias	FReserve	Confidential	Lake Pedder area	natural pop.

Species May Occur in Suitable Habitat	Habitat to Survey
Hickmans pygmy mountain shrimp	Buttongrass areas within the original Lake Pedder-Serpentine drainage.
Pedder galaxias	Tributaries of the Lake Pedder impoundment.
Lake Pedder earthworm	Shore and sediments of Lake Pedder.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

SORELL 5426

Known Localities of Species	Tenure	Map Grid	Locality	Notes
great crested grebe	Reserve	448 622	Orielton Lagoon, Pittwater	key site
coastal birds (migratory waders)	Reserve	452 618	Orielton Lagoon, Pittwater area	feed & roost
coastal birds (migratory waders)	Reserve	460 618	Waterview Bird Sanctuary, Sorell	feed & roost
swift parrot	Private	486 696	1 km east of Flat Top Hill	foraging area
swift parrot	Private	515 603	Forcett area	foraging area
swift parrot	Private	547 659	1.5 km southwest of Heans Hill	foraging area
eagles (wedge-tailed)	Private	Confidential	Near Dunbabins Hills	nest
green and gold frog	Private	437 699	Orielton	
green and gold frog	Private	441 652	Orielton Creek	
green and gold frog	Private	443 638	North Orielton Lagoon	
green and gold frog	Private	485 702	Pawleena Dam	
southeast seastars (live-bearing seastar)	Crown	437 606	Midway Point (Garden Lane), intertidal	colony
southeast seastars (live-bearing seastar)	Reserve	443 609	Sorell Causeway, intertidal area	colony
southeast seastars (live-bearing seastar)	Reserve	445 615	Sorell Causeway, intertidal area	colony

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
forty-spotted pardalote	Grassy dry forest and woodland with white gum within 3 km of the coast.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
southeast seastars (live-bearing seastar)	Intertidal rocky areas, on sandstone.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
swift parrot	Forest and woodland dominated by blue gum or black gum within 10 km of the coast, including slopes and ridges.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

SOUTH CAPE (1: 100 000 map series)

Known Localities of Species	Tenure	Map Grid	Locality	Notes
Pedra Branca skink	FReserve	978 436	Rock crevices of Pedra Branca Island	type locality
coastal birds (shy albatross)	FReserve	978 436	Pedra Branca Island	breeding site
coastal birds (shy albatross)	FReserve	493 570	The Mewstone	breeding site
seals (Australian fur seal)	FReserve	493 570	The Mewstone	haul-out sites
seals (Australian fur seal)	FReserve	978 436	Pedra Branca Island rockshelf	haul-out sites

SPIRES 4229

Species May Occur in Suitable Habitat	Habitat to Survey
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

SPLIT ROCK 4636

Known Localities of Species	Tenure	Map Grid	Locality	Notes
Great Lake ecosystems *(Mesacanthotelson setosus, Uramphisopus pearson)*	HEC	737 696	Brandum Bay, Great Lake	type localities
freshwater snails *(Beddomeia tumida)*	HEC	778 649	Great Lake benthos and sediments	type locality
ptunarra brown butterfly	FReserve	634 630	Second Lagoon	colony
ptunarra brown butterfly	FReserve	656 656	Lake Augusta Road	colony
ptunarra brown butterfly	FReserve	684 602	Ouse River Plain	colony
ptunarra brown butterfly	FReserve	726 614	Liawenee	colony

Species May Occur in Suitable Habitat	Habitat to Survey
Great Lake ecosystem (all species)	Great Lake margin, benthos, sediments.
ptunarra brown butterfly	Native grassland or woodland with more than 15% cover of tussock grass.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

SPRINGFIELD 5443

Known Localities of Species	Tenure	Map Grid	Locality	Notes
giant freshwater lobster	Private	430 308	Great Forester River	key catchm't
giant freshwater lobster	Priv / SF		Great Forester River and tributaries	key catchm't
northeast forest snail	SF	460 331	Mackenzie Rivulet	
northeast forest snail	SF	461 329	Mackenzie Rivulet	
northeast forest snail	SF	474 339	Near Saltmarsh Road	
northeast forest snail	SF	500 320	Hogarth Rivulet near Loone Hill	
northeast forest snail	SF	509 327	Cuckoo Falls	
northeast forest snail	SF	535 383	Tulendeena Road	
northeast forest snail	SF	537 348	Cuckoo Hill	
northeast forest snail	SF	544 340	Cuckoo Hill Road	
northeast forest snail	SF	547 330	Jetsons Creek	
burrowing crayfish (Mt Arthur)	Private	430 344	Great Forester River trib, Beatties Road	Doran 1999
burrowing crayfish (Mt Arthur)	Private	431 340	Great Forester River trib, Beatties Road	Doran 1999
burrowing crayfish (Mt Arthur)	SF	444 331	2 km north Mt Helen, Frenches Road	Doran 1999
eagles (wedge-tailed)	FReserve	Confidential	Near Mount Maurice	nest
eagles (wedge-tailed)	SF	Confidential	Near Tulendeena Dam	nest near

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes, below about 400 m alt., esp. the Great Forester River.
burrowing crayfish (Mt Arthur)	Moist seeps, flat swampy areas and stream banks, where soil has moderate to high clay content, esp. east of the Tamar River.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
northeast forest snail	Rainforest, mixed forest or wet forest containing rainforest elements.
'Skemps' snail	Wet sclerophyll gullies with creek lines.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.

eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

SPURRS RIVULET 5844

Known Localities of Species	Tenure	Map Grid	Locality	Notes
northeast forest snail	SF	802 450	M0117I	coupe
northeast forest snail	SF	879 493	Musselroe Creek	
northeast forest snail	SF	885 419	GC110D	coupe
northeast forest snail	SF	892 455	GC034C	coupe
northeast stag beetles (Simsons)	SF	815 463	Moorina 115A	
northeast stag beetles (Simsons)	SF	818 475	Three Notch Track	
northeast stag beetles (Simsons)	SF	872 433	McGoughs Lookout	
northeast stag beetles (Simsons)	SF	874 434	Goulds Country	
northeast stag beetles (Simsons)	SF	885 442	Goulds Country	
northeast stag beetles (Simsons)	SF	886 439	Firewood cutters track	
northeast stag beetles (Simsons)	SF	893 405	New England (south)	
northeast stag beetles (Simsons)	SF	898 420	New England link	
northeast stag beetles (Simsons)	SF	900 411	Great Musselroe River	
northeast stag beetles (Simsons)	SF	903 463	Eucalypt plantation	
northeast stag beetles (Simsons)	SF	896 470	GC033A	coupe
northeast stag beetles (Simsons)	SF	892 455	GC034C	coupe
northeast stag beetles (Simsons)	SF	852 473	GC081B	coupe
northeast stag beetles (Simsons)	SF	887 433	GC104A	coupe
northeast stag beetles (Simsons)	SF	888 429	GC104A	coupe
northeast stag beetles (Simsons)	SF	883 434	GC104A	coupe
northeast stag beetles (Simsons)	SF	900 448	GC104B	coupe
northeast stag beetles (Simsons)	SF	899 444	GC104B	coupe
northeast stag beetles (Simsons)	SF	892 442	GC104C	coupe
northeast stag beetles (Simsons)	SF	889 439	GC104C	coupe
northeast stag beetles (Simsons)	SF	874 429	GC108A	coupe
northeast stag beetles (Simsons)	SF	882 424	GC108B	coupe
northeast stag beetles (Simsons)	SF	878 426	GC108B	coupe
northeast stag beetles (Simsons)	SF	885 426	GC108C	coupe
northeast stag beetles (Simsons)	SF	890 421	GC110A	coupe
northeast stag beetles (Simsons)	SF	888 412	GC110A	coupe
northeast stag beetles (Simsons)	SF	889 408	GC110A	coupe
northeast stag beetles (Simsons)	SF	884 405	GC110C	coupe
northeast stag beetles (Simsons)	SF	885 409	GC110C	coupe
northeast stag beetles (Simsons)	SF	886 406	GC110C	coupe
northeast stag beetles (Simsons)	SF	890 416	GC110D	coupe
northeast stag beetles (Simsons)	SF	885 419	GC110D	coupe
northeast stag beetles (Simsons)	Private	893 428	Richards	

Species May Occur in Suitable Habitat	Habitat to Survey
giant freshwater lobster	North-flowing streams, rivers and other water bodies including lakes, below about 400 m alt., esp. the Great Musselroe River.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
northeast forest snail	Rainforest, mixed forest or wet forest containing rainforest elements.
northeast stag beetles (3 species)	Wet forest with a well developed litter layer on well drained soils.

quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

ST HELENS 6042

Known Localities of Species	Tenure	Map Grid	Locality	Notes
Australian grayling	Res / Crn	054 256	George River on Binalong Bay Road	
velvet worms (giant)	SF	040 200	Wildlife Priority Area near Basin Creek	WPA
velvet worms (giant)	Private	012 250	Golden Fleece Rivulet	
green and gold frog	Private	038 255	Mosquito Creek	
green and gold frog	Reserve	102 253	Moriarty Lagoon	
coastal birds (fairy tern)	Reserve	080 265	Humbug Point	breeding site
coastal birds (fairy tern, little tern)	Reserve	136 288	St Helens Point	breeding site
coastal birds (hooded plover)	Reserve	111 295	Dora Point	breeding site
coastal birds (hooded plover)	Reserve	110 262	Maurouard Beach - survey site	breeding site
coastal birds (migratory waders)	Reserve	120 290	St Helens Bay, including the mouth	feed & roost
coastal birds (little penguin, s-t shearwater)	FReserve	124 215	St Helens Island	colonies
eagles (white-bellied sea-eagle)	Private	Confidential	Boggy Creek area	nest 1
eagles (white-bellied sea-eagle)	Reserve	Confidential	Boggy Creek area	nest 2
eagles (white-bellied sea-eagle)	Reserve	Confidential	Boggy Creek area	nest 3
eagles (white-bellied sea-eagle)	Private	Confidential	Near Bayview	nest
eagles (white-bellied sea-eagle)	Reserve	Confidential	Near Tuckers Arm	nest
marine turtles (leatherback)	Crown	040 280	1 nm south of Refuge Island in 1988	swimming
marine turtles (leatherback)			Beachwashed near Hughes Point	1996 record
marine turtles (leatherback)	Com'w		Swimming 15 nm east of St Helens	1992 to 1994
marine turtles (leatherback)	Crown		Swimming St Helens Point and Rocks	1995 record
marine turtles (leatherback)	Crown		Swimming south of St Helens Rocks	1995 record
marine turtles (leatherback)	Com'w		Swimming 25 nm east of St Helens	1974 to 1998
marine turtles (leatherback)	Com'w		Swimming 6 to 15 nm east of St Helens	1998 record
marine turtles (leatherback)	Crown		Swimming offshore at St Helens	1976 to 1998

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of Georges River.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
velvet worms (giant)	Eucalypt forest with rotting logs.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
New Holland mouse	Dry coastal heathland and open heathy forest.
coastal birds (fairy tern, little tern)	Sand or shingle beaches, unvegetated sites near estuaries and nearby lakes, and estuarine and offshore islands.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
swift parrot	Forest and woodland dominated by blue gum or black gum within 10 km of the coast, including slopes and ridges.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

ST JOHN 5837

Known Localities of Species	Tenure	Map Grid	Locality	Notes
Swan galaxias	SF	Confidential	Headwaters, Swan and Macquarie Rivers	trans and nat.
Swan galaxias	Reserve	Confidential	Headwaters, Swan and Macquarie Rivers	translocated

eagles (wedge-tailed)	Private	Confidential	Pretty Hills area	nest
eagles (wedge-tailed)	Private	Confidential	Pretty Hills area	nest near
eagles (wedge-tailed)	SF	Confidential	Near Mount Puzzler	nest

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Douglas River (middle and lower parts).
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
Swan galaxias	In catchment upstream of map sites.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

ST MARYS 5839

Known Localities of Species	Tenure	Map Grid	Locality	Notes
velvet worms (blind)	SF	927 984	Mt Nicholas	
velvet worms (blind)	Crown	991 978	Newmans Creek	
eagles (wedge-tailed)	Private	Confidential	Near Haslemere Flats	nest near

Species May Occur in Suitable Habitat	Habitat to Survey
velvet worms (blind)	Eucalypt forest with rotting logs.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

ST PAULS DOME 5637

Known Localities of Species	Tenure	Map Grid	Locality	Notes
freshwater snails *(Beddomeia krybetes)*	Crwn/Prv	733 701	St Pauls River, east of Royal George	type locality
freshwater snails *(Beddomeia krybetes)*	Private	780 701	St Pauls River	
eagles (wedge-tailed)	SF	Confidential	Near Mount Slaughter	nest

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

STACKS 5439

Known Localities of Species	Tenure	Map Grid	Locality	Notes
eagles (wedge-tailed)	SF	Confidential	Near Midday Hill	nest

Species May Occur in Suitable Habitat	Habitat to Survey
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

STANHOPE 5438

Known Localities of Species	Tenure	Map Grid	Locality	Notes
eagles (wedge-tailed)	FReserve	Confidential	Near Stacks Bluff	nest

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.

quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

STANLEY 3448

Known Localities of Species	Tenure	Map Grid	Locality	Notes
keeled snail	FReserve	569 862	The Nut, Stanley	
keeled snail	FReserve	571 860	The Nut, Stanley	
Stanley snail	FReserve	564 859	The Nut, Stanley	type locality
Stanley snail	FReserve	567 856	The Nut, Stanley	type locality
Stanley snail	FReserve	568 862	The Nut, Stanley	type locality
Stanley snail	FReserve	569 862	The Nut, Stanley	type locality
Stanley snail	FReserve	569 863	The Nut, Stanley	type locality
Stanley snail	FReserve	570 860	The Nut, Stanley	type locality
Stanley snail	FReserve	570 861	The Nut, Stanley	type locality
Stanley snail	FReserve	571 860	The Nut, Stanley	type locality
coastal birds (hooded plover)	Crown	555 820	Black River Beach - survey site	breeding site
coastal birds (hooded plover)	Reserve	547 848	Tatlows Beach - survey site	breeding site
coastal birds (hooded plover, fairy tern)	Reserve	500 818	Anthony Beach	breeding site
coastal birds (little penguin)	Crown	529 915	North Point	colony
coastal birds (little penguin)	Crwn/Res	565 860	The Nut, Caravan Park, Godfreys Beach	colony
coastal birds (short-tailed shearwater)	Crwn/Res		The Nut, Stanley	colony
coastal birds (short-tailed shearwater)	Crown		Black River area	colony
coastal birds (migratory waders)	Reserve		West Inlet and East Inlet	foraging site
eagles (white-bellied sea-eagle)	Private	Confidential	Near West Inlet	nest
seals (Australian fur seal, NZ fur seal)		562 890	Bull Rock off coast near Stanley	haul-out site
marine turtles (leatherback)	Com'w		Swimming 20 nm north of Stanley	1964 to 1982
marine turtles (leatherback)	Com'w		Entangled 7 nm north of Stanley	1969 record
marine turtles (leatherback)	Crown		Swimming Stanley to Three Hummock	1992 record

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
keeled snail	Forest with deep damp litter.
orange-bellied parrot	Migration feeding habitat: saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast, including vegetated offshore islands.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
Stanley snail	Usually rocky areas on the Nut with scrubby vegetation including dogwood, eucalypt, blackwood and foreshore shrubbery.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

STEPPES 4833

Known Localities of Species	Tenure	Map Grid	Locality	Notes
ptunarra brown butterfly	Private	823 330	Earleys Marsh	colony
ptunarra brown butterfly	Private	913 389	Steppes	colony
ptunarra brown butterfly	Private	920 308	Blackburn Creek	colony
ptunarra brown butterfly	Private	946 348	Cross Marsh	colony

ptunarra brown butterfly	Private	990 300	Millers Gully	colony
saddled galaxias	HEC	990 390	Margin and open water of Woods Lake	
great crested grebe	HEC	959 390	Lagoon of Islands	foraging site
eagles (wedge-tailed)	Private	Confidential	Near Diamond Tier	nest
eagles (wedge-tailed)	Crwn/Prv	Confidential	Near Rockarena Flat	nest
eagles (wedge-tailed)	Crown	Confidential	Near The Steppes	nest
eagles (wedge-tailed)	SF	Confidential	Near The Steppes	nest
eagles (white-bellied sea-eagle)	Private	Confidential	Near Lagoon of Islands	nest

Species May Occur in Suitable Habitat	Habitat to Survey
ptunarra brown butterfly	Native grassland or woodland with more than 15% cover of tussock grass.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

STOKES 2355

Known Localities of Species	Tenure	Map Grid	Locality	Notes
coastal birds (hooded plover)	Crown	365 535	Surprise Bay	breeding site
coastal birds (hooded plover)	Reserve	426 565	Colliers Beach	breeding site
coastal birds (hooded plover)	Reserve	475 592	Broken Arm Beach	breeding site
coastal birds (hooded plover)	Res/Crwn	385 535	Seal Bay	breeding site
coastal birds (hooded plover)	Reserve	485 597	Sandblow Pt to City of Melbourne Bay	breeding site
coastal birds (short-tailed shearwater)	Reserve	448 568	Red Hut Point, King Island	colony
coastal birds (short-tailed shearwater)	FReserve	333 563	Seal Rocks, King Island	colony
seals (Australian fur seal)	Reserve		Reid Rocks, south of King Island	breeding site
seals (NZ fur seal)	Reserve		Reid Rocks, south of King Island	haul-out site
marine turtles (leatherback)	Crown		Entangled West of Surprise Point	1985 record
marine turtles (leatherback)	Com'w		Swimming 20 nm of Reid Rocks	1995 record
marine turtles (leatherback)	Crown		Swimming west of Reid Rocks	1998 record

Species May Occur in Suitable Habitat	Habitat to Survey
King Island brown thornbill	Dry forest, woodland and scrubland.
orange-bellied parrot	Migration feeding habitat: saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast, including vegetated offshore islands.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.

STONOR 5230

Known Localities of Species	Tenure	Map Grid	Locality	Notes
ptunarra brown butterfly	Private	213 043	Spring Hill	colony
ptunarra brown butterfly	Private	245 068	Jordan River	colony
ptunarra brown butterfly	Private	250 095	Pages Tier	colony
ptunarra brown butterfly	Private	270 075	West of Pikes Hill	colony
ptunarra brown butterfly	Private	285 085	North of Pikes Hill	colony
ptunarra brown butterfly	Private	295 090	Front Springs Hill	colony
ptunarra brown butterfly	Private	295 095	Front Springs Hill	colony

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
great crested grebe	Lakes, rivers and estuaries.
ptunarra brown butterfly	Native grassland or woodland with more than 15% cover of tussock grass.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

STOWPORT 4044

Known Localities of Species	Tenure	Map Grid	Locality	Notes
giant freshwater lobster	Private	020 430	Pet Reservoir, Ridgley	
giant freshwater lobster	Private	123 414	Blythe River	
giant freshwater lobster	P/Res/Cn		Cam and Emu Rivers and tributaries	key catchm'ts
velvet worms (northwest)	SF	185 409	Mt Gnomon, Dial Range	
velvet worms (northwest)	Private	188 461	Penguin Creek	Mesibov '98
velvet worms (northwest)	SF	189 408	Mt Gnomon, Dial Range	
velvet worms (northwest)	SF	189 411	Mt Gnomon, Dial Range	
eagles (wedge-tailed)	Private	Confidential	Near Guide River	nest
eagles (white-bellied sea-eagle)	Private	Confidential	Near Heybridge	nest

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of the Cam and Emu Rivers.
burrowing crayfish (Burnie)	Seepages and streambanks in the catchments of Cooee, Shorewell and Romaine Creeks.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes, below about 400 m alt., esp. the Cam River, Emu River and Blythe River.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
velvet worms (northwest)	Wet forest with rotting logs and woody ground litter.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

STRAHAN 3633

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
orange-bellied parrot	Migration feeding habitat: saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast, including vegetated offshore islands.
pencil pine moth	Pencil pine forest.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

STRATHGORDON 4226

Known Localities of Species	Tenure	Map Grid	Locality	Notes
Hickmans pygmy mountain shrimp	FReserve	245 610	Trappes Inlet (underwater now)	site lost
caddisfly *(Taskiropsyche lacustris)*	FReserve	232 620	Teds Beach, Gordon Road	Jackson '99
Pedder galaxias	HEC	Confidential	Strathgordon Area	holding site

Species May Occur in Suitable Habitat	Habitat to Survey
Hickmans pygmy mountain shrimp	Buttongrass areas within the original Lake Pedder-Serpentine drainage.
Pedder galaxias	Tributaries of the Lake Pedder impoundment; Strathgordon water supply dam.
Lake Pedder earthworm	Shore and sediments of Lake Pedder.

quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

STRICKLAND 4630

Known Localities of Species	Tenure	Map Grid	Locality	Notes
eagles (wedge-tailed)	SF	Confidential	Near Ringing Creek	nest near
eagles (wedge-tailed)	SF	Confidential	Near Lake Catagunya	nest
eagles (wedge-tailed)	SF	Confidential	Near Ringing Creek	nest
eagles (wedge-tailed)	SF	Confidential	Near Black Bobs	nest
eagles (wedge-tailed)	SF	Confidential	Lanes Tier Road	nest

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

STRINGER 3437

Known Localities of Species	Tenure	Map Grid	Locality	Notes
eagles (wedge-tailed)	Crown	Confidential	Stanley River	nest near

Species May Occur in Suitable Habitat	Habitat to Survey
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
orange-bellied parrot	Migration feeding habitat: saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast, including vegetated offshore islands.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

STUDLAND 3048

Known Localities of Species	Tenure	Map Grid	Locality	Notes
orange-bellied parrot	Private	147 838	Swan Bay Plain	migration '99
eagles (wedge-tailed)	Private	Confidential	Near Swan Creek	nest near
coastal birds (migratory waders)	Crown	195 895	Robbins Passage and Wallaby Island	key area

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
keeled snail	Forest with deep damp litter.
orange-bellied parrot	Migration feeding habitat: saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast, including vegetated offshore islands.

coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

SUMAC 3244

Known Localities of Species	Tenure	Map Grid	Locality	Notes
giant freshwater lobster	Reserve	374 445	Lake Chisholm tributary	
giant freshwater lobster	SF	393 419	Sumac Rivulet	
freshwater snails *(Beddomeia mesibovi)*	SF	304 462	Small streams near Kanunnah Bridge	type locality
velvet worms (northwest)	SF	281 437	Stephens Rivulet	
velvet worms (northwest)	SF	284 466	Stephens Rivulet	
velvet worms (northwest)	SF	301 469	Arthur River	
velvet worms (northwest)	SF	306 490	Chester Creek	
velvet worms (northwest)	SF	332 450	Sumac Road	
velvet worms (northwest)	SF	335 428	Sumac Road	
velvet worms (northwest)	SF	354 435	Julius River area	
velvet worms (northwest)	SF	395 403	Sumac Rivulet	
eagles (wedge-tailed)	SF	Confidential	Arthur River area	nest near
eagles (wedge-tailed)	SF	Confidential	Arthur River area	nest
eagles (wedge-tailed)	SF	Confidential	Near Stephens Rivulet	nest
eagles (wedge-tailed)	SF	Confidential	Near Rapid River	nest near
eagles (wedge-tailed)	SF	Confidential	Near Meryanna Road	nest
eagles (white-bellied sea-eagle)	SF	Confidential	Near Blackwater Road	nest (?WTE)

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Arthur River (middle and lower parts).
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes and Arthur River system, below about 400 m alt.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
keeled snail	Forest with deep damp litter covering the western half of mapsheet.
velvet worms (northwest)	Wet forest with rotting logs and woody ground litter.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

SUNDOWN 3044

Known Localities of Species	Tenure	Map Grid	Locality	Notes
coastal birds (hooded plover)	Reserve	045 495	Arthur Beach	breeding site

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Arthur River (middle and lower parts).
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes and Arthur River system, below about 400 m. alt.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
keeled snail	Forest with deep damp litter.

orange-bellied parrot	Migration feeding habitat: saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast, including vegetated offshore islands.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

SWANSEA 5833

Known Localities of Species	Tenure	Map Grid	Locality	Notes
Australian grayling	Crown	875 368	Meredith River, off Tasman Highway	
Australian grayling	Crown	876 366	Meredith River, off Tasman Highway	
coastal birds (hooded plover)	Crown	887 371	Bluff Rock to Meredith River	breeding site
coastal birds (hooded plover)	Reserve	990 389	Nine Mile Beach (Dolphin Sands)	breeding site
coastal birds (migratory waders)		882 371	Meredith River	feed & roost
coastal birds (little penguin, s-t shearwater)	Reserve	888 330	Foredunes of Coswell Beach	colonies
coastal birds (short-tailed shearwater)	Private	896 355	Waterloo Point	colony
eagles (white-bellied sea-eagle)	Private	Confidential	Near Searles Lagoon	nest
eagles (white-bellied sea-eagle)	Private	Confidential	Dolphin Sands area	nest

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of the Meredith River and Stony River.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
forty-spotted pardalote	Grassy dry forest and woodland with white gum within 3 km of the coast.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
New Holland mouse	Dry coastal heathland and open heathy forest.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
swift parrot	Forest and woodland dominated by blue gum or black gum within 10 km of the coast, including slopes and ridges.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

TABLE 5032

Known Localities of Species	Tenure	Map Grid	Locality	Notes
ptunarra brown butterfly	Private	081 297	Handsome Marsh	colony
ptunarra brown butterfly	Private	177 295	Harrisons Lookout	colony
ptunarra brown butterfly	Private	193 293	Northeast of Old Mans Head	colony
great crested grebe	HEC	122 294	Lake Crescent	foraging site
eagles (wedge-tailed)	Private	Confidential	Near Flat Iron Hill	nest
eagles (wedge-tailed)	SF	Confidential	Table Mountain area	nest near
eagles (wedge-tailed)	Crown	Confidential	Table Mountain area	nest
eagles (wedge-tailed)	Private	Confidential	Near Exe Rivulet	nest near
eagles (wedge-tailed)	Private	Confidential	Near Jacksons Scrub	nest

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.

ptunarra brown butterfly	Native grassland or woodland with more than 15% cover of tussock grass.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

TABLE HEAD 3531 (Albina-Table Head)

Known Localities of Species	Tenure	Map Grid	Locality	Notes
coastal birds (hooded plover)	Reserve	520 146	Dunes Creek Beach	breeding site
coastal birds (hooded plover)	Reserve	522 189	Unnamed beach	breeding site
coastal birds (hooded plover)	Reserve	526 178	Unnamed beach	breeding site

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
orange-bellied parrot	Migration feeding habitat: saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast, including vegetated offshore islands.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

TAM O'SHANTER 5046

Known Localities of Species	Tenure	Map Grid	Locality	Notes
green and gold frog	Private	074 607	Tam O'Shanter Road	

Species May Occur in Suitable Habitat	Habitat to Survey
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
New Holland mouse	Dry coastal heathland and open heathy forest.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

TANNER 5658

Known Localities of Species	Tenure	Map Grid	Locality	Notes
New Holland mouse	Private	755 830	Reedy Lagoon	colony
New Holland mouse	Crown	755 850	5 km east of Mt Tanner	colony
coastal birds (hooded plover)	Reserve	758 803	Marshall Bay - survey site	breeding site
coastal birds (hooded plover, s-t shearwater)	Crown	665 804	North Pascoe Island	breeding site
coastal birds (little penguin, s-t shearwater)	Crown	660 820	Roydon Island, off West End Beach	colony
coastal birds (little penguin, s-t shearwater)	Crown	730 810	Marriot Reef, Marshall Bay	colonies
coastal birds (little penguin)	Crown	665 804	North Pascoe Island	colony
eagles (white-bellied sea-eagle)	Reserve	Confidential	Cape Frankland	nest
eagles (white-bellied sea-eagle)	Private	Confidential	Deep Bight	nest
eagles (white-bellied sea-eagle)	Reserve	Confidential	Tanners Bay	nest
seals (Australian fur seal)			Bass Pyramid, due west of Killiecrankie	haul-out site

Species May Occur in Suitable Habitat	Habitat to Survey
Bass Strait wombat	Heath, scrub, woodland and pasture.
New Holland mouse	Dry coastal heathland and open heathy forest.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.

eagle (nest)			Large tracts (more than 10 ha) of eucalypt or mixed forest.	

TARANNA 5623

Known Localities of Species	Tenure	Map Grid	Locality	Notes
burgundy snail	SF	721 311	Pirates Road, north of Allans Creek	
burgundy snail	SF	724 322	Tatnells Creek	
burgundy snail	Private	752 389	Hawks Hill	
burgundy snail	Private	755 388	East of Hawks Hill	
burgundy snail	FReserve	758 376	Tessellated Pavement	
burgundy snail	Private	759 383	East of Hawks Hill	
burgundy snail	Private	760 378	Southeast of Hawks Hill	
burgundy snail	SF	771 392	East of Eaglehawk Spur	
burgundy snail	SF	773 394	East of Eaglehawk Spur	
southeast seastars (live-bearing seastar)	FReserve	758 374	Tessellated Pavement, intertidal area	colony
southeast stag beetles (Mt Mangana)	SF	741 331	Plateau Road	
southeast stag beetles (Mt Mangana)	Private	746 393	Hillcrest	
coastal birds (hooded plover)	Crown	757 350	Pirates Bay, Egg Beach	breeding site
coastal birds (little penguin)	FReserve		Coastline around Eaglehawk Neck	colonies
swift parrot	Private	608 317	SW of Premaydena on Nubeena Road	foraging area
swift parrot	Private	611 318	SW of Premaydena on Nubeena Road	foraging area
swift parrot	Private	628 327	Premaydena area	foraging area
swift parrot	Private	634 329	Premaydena area	foraging area
swift parrot	Private	643 303	N of Grooms Hill, Nubeena Back Road	foraging area
swift parrot	Private	755 375	Lufra Cove area	foraging area
eagles (wedge-tailed)	SF	Confidential	Near Machins Hill	nest
eagles (white-bellied sea-eagle)	Private	Confidential	Near Deer Point	nest
eagles (white-bellied sea-eagle)	Private	Confidential	Near Sandhill Point	nest
eagles (white-bellied sea-eagle)	Private	Confidential	Near Deer Point	nest
eagles (white-bellied sea-eagle)	Private	Confidential	Near Prices Bay	nest
eagles (white-bellied sea-eagle)	Private	Confidential	Near Quarrells Point	nest
eagles (white-bellied sea-eagle)	Private	Confidential	Near Sympathy Hills	nest
eagles (white-bellied sea-eagle)	Reserve	Confidential	Boxalls Bay area	nest
eagles (white-bellied sea-eagle)	FReserve	Confidential	Eaglehawk Neck	nest
marine turtles (leatherback)	Crown		Swimming Blowhole, Eaglehawk Neck	1995 record

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
southeast stag beetles (broad-toothed)	Dry or wet forest with rotting logs and litter on the ground.
burgundy snail	Wet eucalypt forest.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
forty-spotted pardalote	Grassy dry forest and woodland with white gum within 3 km of the coast.
southeast seastars (live-bearing seastar)	Intertidal rocky areas, on sandstone.
southeast stag beetles (Mt Mangana)	Wet forest containing decaying logs.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
spotted handfish	Derwent River estuary and adjoining bays and channels.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
swift parrot	Forest and woodland dominated by blue gum or black gum within 10 km of the coast, including slopes and ridges.

eagle (nest)			Large tracts (more than 10 ha) of eucalypt or mixed forest.	

TAROONA 5224

Known Localities of Species	Tenure	Map Grid	Locality	Notes
broad-striped ghost moth	Private	235 470	Ridgeway area	
broad-striped ghost moth			Kingston area - site unknown	
saltmarsh moths (chevron and saltmarsh)	Council	395 480	Lauderdale tip - extension area	
coastal birds (fairy tern, hooded plover)	Reserve	389 410	Gorringes Beach at Mortimer Bay	historic site
coastal birds (little penguin)	Crown	326 410	Opossum Bay, Mitchells Beach	colony
forty-spotted pardalote	Private	278 455	East of Water Reserve, Taroona Hills	colony T 1
swift parrot	Private	221 473	Fern Tree	nest
swift parrot	Private	222 468	Fern Tree	nest
swift parrot	Private	232 422	2 km west of Kingston	foraging area
swift parrot	Private	234 424	4 km west of Alum Cliffs	foraging area
swift parrot	Private	235 472	Ridgeway area	foraging area
swift parrot	Private	253 484	Proctors Saddle on Mount Nelson	foraging area
swift parrot	Private	254 486	Proctors Saddle	foraging area
swift parrot	Private	255 473	0.5 km west of Mount Nelson	nest
swift parrot	Reserve	255 476	0.5 km west of Mount Nelson	nest
swift parrot	Reserve	255 477	Mount Nelson area	foraging area
swift parrot	Reserve	255 486	Proctors Saddle on Mount Nelson	foraging area
swift parrot	Private	256 474	0.5 km west of Mount Nelson	nest
swift parrot	Private	262 487	Mount Nelson	foraging area
swift parrot	Reserve	262 497	Sandy Bay	foraging area
swift parrot	Private	264 412	Kingston Beach	foraging area
swift parrot	Private	276 438	1 km north of Alum Cliffs	foraging area
swift parrot	FReserve	277 436	1 km north of Alum Cliffs	foraging area
swift parrot	Private	281 440	Taroona	foraging area
swift parrot	Reserve	282 473	Mount Nelson	foraging area
swift parrot	Private	283 443	Taroona Beach	foraging area
swift parrot	Private	286 443	Taroona Park	foraging area
swift parrot	Private	287 443	Taroona	foraging area
swift parrot	Private	287 458	Taroona Beach, Channel Highway	foraging area
swift parrot	Council	289 489	Sandy Bay Point	foraging area
swift parrot	Private	379 423	Mortimer Bay	foraging area
swift parrot	Private	390 417	Mortimer Bay	nest
eagles (wedge-tailed)	Private	Confidential	Dunns Creek area	nest near

Species May Occur in Suitable Habitat	Habitat to Survey
broad-striped ghost moth	Coffee Creek, Kingston area or other shrubby woodland and sedgeland
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
forty-spotted pardalote	Grassy dry forest and woodland with white gum within 3 km of the coast.
grey goshawk	Wet forest, including blackwood forest below Mt Wellington to Fern Tree area.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
southeast seastars (live-bearing seastar)	Intertidal rocky areas, on sandstone.
saltmarsh moths (chevron looper, saltmarsh looper)	Saltmarsh vegetation and dry areas.
coastal birds (fairy tern)	Sand or shingle beaches, unvegetated sites near estuaries and nearby lakes, and estuarine and offshore islands.

coastal birds (hooded plover)	Sandy ocean beaches and dunes.
spotted handfish	Derwent River estuary and adjoining bays and channels.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
swift parrot	Forest and woodland dominated by blue gum or black gum within 10 km of the coast, including slopes and ridges.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

TARRALEAH 4431

Species May Occur in Suitable Habitat	Habitat to Survey
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

TASMAN 5721

Known Localities of Species	Tenure	Map Grid	Locality	Notes
eagles (white-bellied sea-eagle)	FReserve	Confidential	Mount Fortescue area	nest
coastal birds (short-tailed shearwater)	FReserve	808 120	Tasman Island	colony
seals (Australian fur seal, NZ fur seal)	FReserve	821 139	Cape Pillar, Tasman Peninsula	haul-out site
marine turtles (leatherback)	Com'w		Swimming 17 nm south Tasman Island	1978 record
marine turtles (leatherback)	Com'w		Swimming 18 nm southeast Tasman Is.	1988 record
marine turtles (leatherback)	Com'w		Swimming 17 nm south Tasman Island	1998 record

Species May Occur in Suitable Habitat	Habitat to Survey
southeast stag beetles (broad-toothed, Mt Mangana)	Dry or wet forest with rotting logs and litter on the ground.
forty-spotted pardalote	Grassy dry forest and woodland with white gum within 3 km of the coast.
southeast seastars (live-bearing seastar)	Intertidal rocky areas, on sandstone.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
swift parrot	Forest and woodland dominated by blue gum or black gum within 10 km of the coast, including slopes and ridges.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

TAYATEA 3445

Known Localities of Species	Tenure	Map Grid	Locality	Notes
giant freshwater lobster	Private	400 593	Duck River	key catchm't
giant freshwater lobster	SF	483 526	Arthur River	
giant freshwater lobster	Res / Crwn		Duck River, Arthur River and tributaries	key catchm'ts

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes below about 400 m alt., esp. the Arthur and Duck Rivers.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
keeled snail	Forest with deep damp litter, western half of mapsheet.
velvet worms (northwest)	Wet forest with rotting logs and woody ground litter.
cave-dwelling invertebrates	Caves and other karst on mapsheet.

quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

TEA TREE 5227

Known Localities of Species	Tenure	Map Grid	Locality	Notes
eagles (wedge-tailed)	Private	Confidential	Longs Hill area	nest near

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
swift parrot	Forest and woodland dominated by blue gum or black gum within 10 km of the coast, including slopes and ridges.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

TEEPOOKANA 3632

Known Localities of Species	Tenure	Map Grid	Locality	Notes
caddisfly *(Diplectrona lyella)*			King River, no further site details given	

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
orange-bellied parrot	Migration feeding habitat: saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast, including vegetated offshore islands.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

TELOPEA 4217

Species May Occur in Suitable Habitat	Habitat to Survey
orange-bellied parrot	Breeding and migration feeding habitat: buttongrass plains with eucalypt forest patches, saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

TEMMA 3043

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.

orange-bellied parrot			Migration feeding habitat: saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast, including vegetated offshore islands.	
coastal birds (hooded plover)			Sandy ocean beaches and dunes.	
quoll (spotted-tailed, eastern)			All wetter forest types, coastal heath and bush-pasture interfaces.	
eagle (nest)			Large tracts (more than 10 ha) of eucalypt or mixed forest.	

TEWKESBURY 3843

Known Localities of Species	Tenure	Map Grid	Locality	Notes
giant freshwater lobster	FReserve	820 300	Hellyer River	key catchm't
giant freshwater lobster	SF	850 390	Inglis River	key catchm't
giant freshwater lobster	Res/Crn/P		Hellyer, Inglis, Cam and Emu Rivers	key catchm'ts
freshwater snails *(Beddomeia camensis)*	Private	881 326	Cam River tributary on Oonah Road	type locality

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes and Arthur River system, below about 400 m. alt., esp. the Hellyer, Cam, Emu and Inglis Rivers. Key mapsheet for the species.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

THE GARDENS 6044

Known Localities of Species	Tenure	Map Grid	Locality	Notes
New Holland mouse	SF	048 445	Break Yoke Creek	colony
New Holland mouse	Private	076 401	Near Margerys Corner	colony
coastal birds (hooded plover)	Reserve	066 470	Bay of Fires	breeding site

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
New Holland mouse	Dry coastal heathland and open heathy forest.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

THIRSTY 6252

Known Localities of Species	Tenure	Map Grid	Locality	Notes
coastal birds (hooded plover)		220 289	Tar Point to Thirsty Lagoon	breeding site
coastal birds (hooded plover)		220 268	Thirsty Lagoon to Christmas Beach	breeding site
coastal birds (hooded plover)			Jamieson Bay, Cape Barren Island	breeding site
coastal birds (little penguin, s-t shearwater)		268 228	Gull Island	colony
marine turtles (leatherback)	Crown		Swimming north of Gull Island	1996 record

Species May Occur in Suitable Habitat	Habitat to Survey
coastal birds (hooded plover)	Sandy ocean beaches and dunes.

TIGER 4427

Known Localities of Species	Tenure	Map Grid	Locality	Notes
cave ecosystem *(Goedetrechus parallelus)*		Confidential	Junee, Florentine area	
eagles (wedge-tailed)	SF	Confidential	Near Tiger Range	nest near

Species May Occur in Suitable Habitat	Habitat to Survey
cave-dwelling invertebrates	Junee, Florentine caves or other karst.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

TOGARI 3246

Known Localities of Species	Tenure	Map Grid	Locality	Notes
Australian grayling	Reserve	353 617	Duck River on Poilinna Road	
giant freshwater lobster	Private		Brittons Swamp	
freshwater snails *(Beddomeia fultoni)*	Private	286 682	Fixers Ck, tributary of Brittons Swamp	
freshwater snails *(Beddomeia fultoni)*	Private	298 699	Farnhams Creek on Bass Highway	type locality
keeled snail	SF	247 638	Riseborough Road, Bass Highway	
keeled snail	SF	257 660	1.5 km northwest of Rainbow Hill	
keeled snail	SF	266 619	Eldridge Road	
keeled snail	SF	268 693	3.5 km west of Christmas Hills	
keeled snail	SF	279 637	2 km southeast of Rainbow Hill	
keeled snail	Private	288 674	Brittons Swamp	
velvet worms (northwest)	SF	265 620	Montagu Swamp area	
velvet worms (northwest)	SF	286 696	Christmas Hills area	
velvet worms (northwest)	SF	292 691	Christmas Hills area	
velvet worms (northwest)	Priv / SF	295 636	Christmas Hills area	
velvet worms (northwest)	SF	309 626	Christmas Hills area	
velvet worms (northwest)	SF	320 670	Christmas Hills area	
velvet worms (northwest)	SF	323 605	Christmas Hills area	
eagles (wedge-tailed)	SF	Confidential	Near Riseborough Road	nest

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of the Duck River.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes, below about 400 m alt., esp. the Duck River.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially with blackwoods. Key mapsheet for species.
keeled snail	Forest with deep damp litter.
velvet worms (northwest)	Wet forest with rotting logs and woody ground litter.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

TOMAHAWK 5647

Known Localities of Species	Tenure	Map Grid	Locality	Notes
green and gold frog	Private	634 733	Tomahawk Road	
green and gold frog	Private	727 726	Boobyalla Estate	

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
dwarf galaxiid	Slow-flowing and still waters with aquatic vegetation.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
New Holland mouse	Dry coastal heathland and open heathy forest.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

TOOMS 5632

Known Localities of Species	Tenure	Map Grid	Locality	Notes
ptunarra brown butterfly	Private	603 243	Green Tier Creek	colony
ptunarra brown butterfly	Reserve	638 256	Halls Bay, Tooms Lake	colony
ptunarra brown butterfly	SF	712 260	Flagstaff Marsh	colony
Swan galaxias	Private	Confidential	Headwaters, Swan and Macquarie Rivers	translocated
Swan galaxias	SF	Confidential	Headwaters, Swan and Macquarie Rivers	translocated
eagles (wedge-tailed)	SF	Confidential	Near Skippys Tier	nest near
eagles (wedge-tailed)	Reserve	Confidential	Near Wilsons Marsh	nest near
eagles (wedge-tailed)	SF	Confidential	Near Kioka Hill	nest (Craven)

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
ptunarra brown butterfly	Native grassland or woodland with more than 15% cover of tussock grass.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
Swan galaxias	In catchment upstream of map sites.
swift parrot	Forest and woodland dominated by blue gum or black gum within 10 km of the coast, including slopes and ridges.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

TRIABUNNA 5629

Known Localities of Species	Tenure	Map Grid	Locality	Notes
swift parrot	Com'w	658 982	Bluestone Tier	nest
swift parrot	Com'w	658 983	Bluestone Tier	foraging area
swift parrot	Private	738 913	Double Creek	foraging area
eagles (wedge-tailed)	Com'w	Confidential	Back River area, Buckland	nest near
eagles (wedge-tailed)	Com'w	Confidential	Near Griffiths Creek, Buckland	nest
coastal birds (migratory waders)	Private	770 955	Rostrevor Lagoon	foraging site
great crested grebe	Private	770 955	Rostrevor Lagoon	foraging site

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
forty-spotted pardalote	Grassy dry forest and woodland with white gum within 3 km of the coast.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
swift parrot	Forest and woodland dominated by blue gum or black gum within 10 km of the coast, including slopes and ridges.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

TRIAL 3435

Known Localities of Species	Tenure	Map Grid	Locality	Notes
orange-bellied parrot	Crown	486 563	Near Trial Harbour	historical '81
coastal birds (short-tailed shearwater)	Reserve	485 563	Trial Harbour	colony
coastal birds (short-tailed shearwater)	Reserve	506 545	Little Henty	colony
coastal birds (hooded plover)	Res/Crwn	486 563	Trial Harbour and mouth of L. Henty R	breeding site
coastal birds (migratory waders)	Crown	504 536	Mouth of Little Henty River	feed & roost

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers, esp. the Little Henty River.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
orange-bellied parrot	Migration feeding habitat: saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast, including vegetated offshore islands.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

TULLAH 3837

Species May Occur in Suitable Habitat	Habitat to Survey
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
pencil pine moth	Pencil pine forest.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

TUNBRIDGE 5233

Known Localities of Species	Tenure	Map Grid	Locality	Notes
salt lake slater	Crown	354 337	Township Lagoon, Tunbridge	
Tunbridge looper moth	Private	354 338	Near Township Lagoon	
eagles (wedge-tailed)	Private	Confidential	Near Racecourse Marsh	nest

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
ptunarra brown butterfly	Native grassland or woodland with more than 15% cover of tussock grass.
salt lake slater	Salt lakes in the Tunbridge area, esp. Saltpan Plains, Mona Vale and Glen Morey Saltpans.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

TYNDALL 3835

Species May Occur in Suitable Habitat	Habitat to Survey
pencil pine moth	Pencil pine forest.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

ULVERSTONE 4244

Known Localities of Species	Tenure	Map Grid	Locality	Notes
coastal birds (little penguin)	FRes/Crn	295 450	Picnic Point west to Goat Island	colony
coastal birds (little penguin)	FRes/Crn	267 468	Lodders Point and west coast	colonies
Australian grayling	Reserve	250 438	River Leven near Allison Bridge	
Australian grayling	Private		River Leven at Greenbanks	
Australian grayling	Crown	370 408	Forth River below weir	
giant freshwater lobster	Private	257 452	Myrtle Creek	
giant freshwater lobster	Private	344 429	Claytons Rivulet, Ulverstone	
freshwater snails *(Beddomeia phasianella)*	Private	198 431	Whisky Creek on Dial Road	
freshwater snails *(Beddomeia phasianella)*	SF	206 417	Keddies Creek, Dial Rd, S of Penguin	type locality
velvet worms (northwest)	SF	209 413	Dial Creek	
velvet worms (northwest)	SF	214 427	Whisky Creek	
velvet worms (northwest)	Private	227 425	Lobster Creek Road	Mesibov '98
velvet worms (northwest)	Private	238 417	Library Creek	

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of the River Leven and Forth River.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes, below about 400 m altitude.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
velvet worms (northwest)	Wet forest with rotting logs and woody ground litter.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

UXBRIDGE 4826

Known Localities of Species	Tenure	Map Grid	Locality	Notes
eagles (wedge-tailed)	SF	Confidential	West Uxbridge	nest
eagles (wedge-tailed)	SF	Confidential	Near Uxbridge	nest

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Middle and lower reaches of the Derwent River.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

VARNA 3529 (on Meerim-Varna sheet)

Known Localities of Species	Tenure	Map Grid	Locality	Notes
coastal birds (hooded plover)	Reserve	557 951	Unnamed beach	breeding site
coastal birds (hooded plover)	Reserve	562 983	Birthday Creek Beach	breeding site
coastal birds (hooded plover)	Reserve	563 987	Unnamed beach	breeding site
coastal birds (hooded plover)	Reserve	565 943	Timms Creek Beach	breeding site
coastal birds (hooded plover)	Reserve	569 918	Varna Bay Beach	breeding site

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
orange-bellied parrot	Breeding and migration feeding habitat: buttongrass plains with eucalypt forest patches, saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

VENABLES 3140 (see Johnsons Bay 3140, Kenneth Bay 3141)

VERA 4031

Species May Occur in Suitable Habitat	Habitat to Survey
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

VERIDIAN 3724 (on Veridian-Mainwaring 3725 sheet)

Known Localities of Species	Tenure	Map Grid	Locality	Notes
coastal birds (fairy tern)	Reserve	751 485	Abo Creek, at The Shank	breeding site
coastal birds (hooded plover)	Reserve	741 485	The Shank Beach	breeding site
coastal birds (hooded plover)	Reserve	758 474	Diorite Point Beach	breeding site
coastal birds (hooded plover)	Reserve	761 471	Copper Creek Beach	breeding site
coastal birds (hooded plover)	Reserve	765 456	Sassy Creek Beach	breeding site

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.

orange-bellied parrot	Breeding and migration feeding habitat: buttongrass plains with eucalypt forest patches, saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast.
coastal birds (fairy tern)	Sand or shingle beaches, unvegetated sites near estuaries and nearby lakes, and estuarine and offshore islands.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

VICTORIA 5642

Known Localities of Species	Tenure	Map Grid	Locality	Notes
caddisfly (*Hydrobiosella sagitta*)	FReserve	769 251	St Columba Falls, near Pyengana	type locality
northeast forest snail	SF	590 218	Paradise Plains	
northeast forest snail	SF	608 220	Paradise Plains	
northeast forest snail	FReserve	669 228	Una Plain, Mt Victoria	
northeast forest snail	FReserve	693 233	Una Creek, Mt Victoria	
northeast forest snail	FReserve	699 227	Dans Rivulet, Mt Victoria	
northeast forest snail	SF	700 276	Cashs Falls, Mt Victoria	
northeast forest snail	SF	702 262	Ralphs Falls, Mt Victoria	
northeast forest snail	SF	706 254	Mt Victoria	
northeast forest snail	FReserve	711 225	Near Caves Creek, Mt Victoria	
northeast forest snail	SF	749 210	Dilgers Hill Road, Mt Albert	
northeast forest snail	SF	776 250	St Columba Falls	
northeast forest snail	SF	750 210	Coupe FL104D	Richards '99
northeast forest snail	SF	753 212	Coupe FL104D	Richards '99
northeast forest snail	SF	756 215	Coupe FL104D	Richards '99
northeast forest snail	SF	767 217	Coupe FL104B/C	Richards '99
northeast forest snail	SF	776 224	Coupe FL106G	Richards '99
northeast forest snail	SF	774 207	Coupe FL105B	Richards '99
northeast forest snail	SF	778 213	Coupe FL105C	Richards '99
northeast stag beetles (Vanderschoors)	SF	730 266	Mt Victoria Road	
northeast stag beetles (Vanderschoors)	SF	769 244	Cottons Hill	
northeast stag beetles (Vanderschoors)	SF / FRes	771 247	St Columba Falls	
northeast stag beetles (Vanderschoors)	FReserve	773 249	St Columbia Falls State Reserve	Richards '99
northeast stag beetles (Vanderschoors)	FReserve	797 273	St Columbia Falls State Reserve	Richards '99
northeast stag beetles (Vanderschoors)	FReserve	775 250	St Columbia Falls State Reserve	Richards '99
northeast stag beetles (Vanderschoors)	FReserve	774 250	St Columbia Falls State Reserve	Richards '99
northeast stag beetles (Vanderschoors)	FReserve	770 248	St Columbia Falls State Reserve	Richards '99
northeast stag beetles (Vanderschoors)	Private	763 201	MDC private land block 1554	Richards '99
velvet worms (giant)	FReserve	797 273	St Columbia Falls State Reserve	Richards '99
velvet worms (giant)	FReserve	775 250	St Columbia Falls State Reserve	Richards '99

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
northeast forest snail	Rainforest, mixed forest or wet forest containing rainforest elements.
velvet worms (giant)	Eucalypt forest with rotting logs.
northeast stag beetles (three species)	Wet forest with a well-developed litter layer on well-drained soils.

quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

VIEW 4025

Species May Occur in Suitable Habitat	Habitat to Survey
Hickmans pygmy mountain shrimp	Buttongrass areas within the original Lake Pedder-Serpentine drainage.
Pedder galaxias	Tributaries of the Lake Pedder impoundment.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

VINCENTS 5232

Known Localities of Species	Tenure	Map Grid	Locality	Notes
ptunarra brown butterfly	Private	213 278	Round Marsh South	colony
ptunarra brown butterfly	Private	217 290	Round Marsh North	colony
ptunarra brown butterfly	Private	305 270	Currajong Rivulet	colony
ptunarra brown butterfly	Private	325 268	Rockwood Hill	colony
ptunarra brown butterfly	Private	337 280	Bellevue Hill	colony
ptunarra brown butterfly	Private	367 228	Sorell Springs Road	colony
ptunarra brown butterfly	Private	370 280	Tin Dish Rivulet	colony
ptunarra brown butterfly	Private	375 265	Murrays Sugarloaf	colony
ptunarra brown butterfly	Private	385 274	Northeast of Murrays Sugarloaf	colony
eagles (wedge-tailed)	Private	Confidential	Near The Nipples	nest
eagles (wedge-tailed)	Private	Confidential	St Peters Pass area	nest near

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
ptunarra brown butterfly	Native grassland or woodland with more than 15% cover of tussock grass.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

WADDAMANA 4633

Known Localities of Species	Tenure	Map Grid	Locality	Notes
ptunarra brown butterfly	Private	742 340	Wild Cattle Hill	colony
eagles (wedge-tailed)	SF	Confidential	Near Surveyors Marshes	nest

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
ptunarra brown butterfly	Native grassland or woodland with more than 15% cover of tussock grass.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

WALKER 3250

Known Localities of Species	Tenure	Map Grid	Locality	Notes
coastal birds (fairy tern)	Private	260 020	Walker Island	breeding site
coastal birds (migratory waders)	Res/Priv		Northern coastline of Robbins Island	feed & roost
coastal birds (little penguin)	FReserve	254 077	Big Stony Petrel	colony
coastal birds (little penguin, s-t shearwater)	FReserve	244 068	Big Sandy Petrel	colonies
coastal birds (little penguin, s-t shearwater)	FReserve	239 064	South West Petrel	colonies
coastal birds (little penguin, s-t shearwater)	FReserve	240 070	Stony Petrel	colonies
coastal birds (short-tailed shearwater)	FReserve	240 070	Little Stony Petrel	colony
coastal birds (short-tailed shearwater)	Private		All around coastline of Walker Island	colonies
eagles (white-bellied sea-eagle)	Private	Confidential	Near Cathedral Point	nest

Species May Occur in Suitable Habitat	Habitat to Survey
orange-bellied parrot	Migration feeding habitat: saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast, including vegetated offshore islands.
coastal birds (fairy tern)	Sand or shingle beaches, unvegetated sites near estuaries and nearby lakes, and estuarine and offshore islands.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.

WARATAH 3641

Known Localities of Species	Tenure	Map Grid	Locality	Notes
freshwater snails *(Phrantela annamurrayae)*	Crown	618 115	Heazlewood River tributary, near road.	

Species May Occur in Suitable Habitat	Habitat to Survey
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes and Arthur River system, below about 400 m alt.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
ptunarra brown butterfly	Native grassland or woodland with more than 15% cover of tussock grass.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

WARNES 4030

Species May Occur in Suitable Habitat	Habitat to Survey
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

WATERHOUSE 5447

Known Localities of Species	Tenure	Map Grid	Locality	Notes
dwarf galaxiid	Res/Crwn	502 708	Blackmans Lagoon	
dwarf galaxiid	Reserve	520 751	Near Little Waterhouse Lake	
green and gold frog	Reserve	498 708	Blackmans Lagoon	good site
green and gold frog	Reserve	498 713	Blackmans Lagoon	good site
green and gold frog	Priv / Res	499 705	Blackmans Lagoon	good site
green and gold frog	Private	500 704	Blackmans Lagoon	good site
green and gold frog	Reserve	500 710	Blackmans Lagoon	good site
green and gold frog	Private	501 706	Blackmans Lagoon	good site
green and gold frog	Crwn/Prv	503 707	Blackmans Lagoon	good site

green and gold frog	Reserve	503 712	Blackmans Lagoon	good site
green and gold frog	Priv/Res	504 708	Blackmans Lagoon	good site
green and gold frog	Reserve	510 726	Big Waterhouse Lake	good site
green and gold frog	Private	533 721	Big Waterhouse Lake	good site
green and gold frog	Reserve	539 773	Waterhouse Point	good site
green and gold frog	Reserve	544 773	Near One Tree Hill	good site
green and gold frog	Reserve	552 763	2 km southeast of One Tree Hill	good site
green and gold frog	Private	588 709	Waterhouse Road near 'Kurani'	good site
coastal birds (hooded plover)	Reserve	500 765	Croppies Bay	breeding site
coastal birds (hooded plover)	Reserve	562 807	South Croppies Point to Waterhouse	breeding site
coastal birds (hooded plover)	Reserve	580 785	Ransons Beach, Waterhouse	breeding site
coastal birds (hooded plover)	Reserve	565 807	Waterhouse Point	breeding site
coastal birds (hooded plover, little tern, fairy tern, short-tailed shearwater, little penguin)	Crown	538 850	Waterhouse Island	breeding sites
coastal birds (little penguin)	Crown	528 805	Little Waterhouse Island	colony
coastal birds (migratory waders)	Reserve	488 728	Mouth of Lake Creek	foraging site

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
dwarf galaxiid	Slow-flowing and still waters with aquatic vegetation.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
New Holland mouse	Dry coastal heathland and open heathy forest.
coastal birds (fairy tern, little tern)	Sand or shingle beaches, unvegetated sites near estuaries and nearby lakes, and estuarine and offshore islands.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

WATERLOO 4821

Known Localities of Species	Tenure	Map Grid	Locality	Notes
southeast stag beetles (Mt Mangana)	SF	896 167	Kermandie River	
swift parrot	Private	917 178	Honeywood Hill	foraging area
swift parrot	Priv / Res	970 179	Cairns Bay	foraging area
swift parrot	Priv / Res	975 170	Waterloo Bay	foraging area
eagles (wedge-tailed)	SF	Confidential	Near Crib Hill on Hartz Mountains	nest

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
forty-spotted pardalote	Grassy dry forest and woodland with white gum within 3 km of the coast.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
southeast stag beetles (Mt Mangana)	Wet forest containing decaying logs.
pencil pine moth	Pencil pine forest.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
swift parrot	Forest and woodland dominated by blue gum or black gum within 10 km of the coast, including slopes and ridges.

eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

WAYATINAH 4430

Species May Occur in Suitable Habitat	Habitat to Survey
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

WELD 4623

Known Localities of Species	Tenure	Map Grid	Locality	Notes
southeast stag beetles (Mt Mangana)	SF	797 308	Edwards Road	
southeast stag beetles (Mt Mangana)	SF	798 310	Edwards Road	

Species May Occur in Suitable Habitat	Habitat to Survey
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
southeast stag beetles (Mt Mangana)	Wet forest containing decaying logs.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

WEST FRANKFORD 4642

Known Localities of Species	Tenure	Map Grid	Locality	Notes
eagles (wedge-tailed)	SF	Confidential	Near Eagle Gorge	nest
eagles (wedge-tailed)	Private	Confidential	Near Eagle Gorge	nest
eagles (wedge-tailed)	SF	Confidential	Southwest of West Frankford	nest
eagles (wedge-tailed)	Private	Confidential	West of Frankford	nest

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Middle and lower Rubicon River.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes, below about 400 m alt., esp. the Rubicon River.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

WESTBURY 4840

Known Localities of Species	Tenure	Map Grid	Locality	Notes
green and gold frog	Private	904 026	Hagley	
green and gold frog	Private	952 007	Rupertswood, Whitemore	
eagles (wedge-tailed)	Private	Confidential	Near Brushy Rivulet	nest

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

WEYMOUTH 5045

Known Localities of Species	Tenure	Map Grid	Locality	Notes
giant freshwater lobster	Private	139 538	Pipers Brook	
green and gold frog	Private	126 593	Weymouth	
eagles (wedge-tailed)	SF	Confidential	Near Baker Tier	nest
eagles (wedge-tailed)	Com'w	Confidential	Near Stony Head	nest
eagles (wedge-tailed)	SF	Confidential	Near Back Creek	nest
eagles (wedge-tailed)	Private	Confidential	Near Bellingham	nest

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of coastal rivers.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes, below about 400 m alt., esp. Pipers River.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
New Holland mouse	Dry coastal heathland and open heathy forest.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

WHITEFORD 5430

Known Localities of Species	Tenure	Map Grid	Locality	Notes
eagles (wedge-tailed)	Private	Confidential	Near Tiddlewantie Gorge	nest
eagles (wedge-tailed)	SF	Confidential	Near Murphys Marsh	nest near
eagles (wedge-tailed)	Private	Confidential	Whiteford area	nest

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

WHITEMARK 5755

Known Localities of Species	Tenure	Map Grid	Locality	Notes
eagles (wedge-tailed)	Crown	Confidential	Near Counsels Peak	nest
coastal birds (fairy tern, little penguin, short-tailed shearwater)	FReserve	770 515	East Kangaroo Island	breeding sites
coastal birds (fairy tern, little penguin, short-tailed shearwater)	Crown	760 565	Little Chalky Island	breeding sites
coastal birds (white-fronted tern, little penguin, short-tailed shearwater)	FReserve	778 580	Mile Island	breeding sites
coastal birds (fairy tern, little penguin, short-tailed shearwater)	FReserve	835 510	Big Green Island	breeding sites
coastal birds (short-tailed shearwater)	Crown	604 599	Chalky Island	colony
coastal birds (little penguin)	FReserve	803 572	Isabella Island	colony
coastal birds (hooded plover)	Reserve	864 573	Whitemark Beach - survey site	breeding site

Species May Occur in Suitable Habitat	Habitat to Survey
Bass Strait wombat	Heath, scrub, woodland and pasture.

dwarf galaxiid	Slow-flowing and still waters with aquatic vegetation.
forty-spotted pardalote	Grassy dry forest and woodland with white gum *(Eucalyptus viminalis)*.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
coastal birds (fairy tern, white-fronted tern)	Sand or shingle beaches, unvegetated sites near estuaries and nearby lakes, and estuarine and offshore islands.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.
burrowing crayfish (Flinders Island)	Wet, fern gullies with dense vegetation.

WICKHAM 2361

Known Localities of Species	Tenure	Map Grid	Locality	Notes
green and gold frog	Private	380 110	Little Cask Lake	
coastal birds (short-tailed shearwater)			Wash and Springs, King Island	colony
coastal birds (short-tailed shearwater)	Crown	358 127	Cape Farewell, King Island	colony
coastal birds (short-tailed shearwater)		374 132	Cape William Lighthouse, King Island	colony
coastal birds (short-tailed shearwater)	Reserve	379 143	Cape Wickham, King Island	colony
coastal birds (short-tailed shearwater)	Reserve	425 124	Rocky Point & Disappointment Bay, KI	colony
coastal birds (short-tailed shearwater)			Around Martha Lavinia, King Island	colony

Species May Occur in Suitable Habitat	Habitat to Survey
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
King Island brown thornbill	Dry forest, woodland and scrubland.
orange-bellied parrot	Migration feeding habitat: saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast, including vegetated offshore islands.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.

WIHAREJA 4834

Known Localities of Species	Tenure	Map Grid	Locality	Notes
ptunarra brown butterfly	Private	850 430	St Patricks Plain	colony
ptunarra brown butterfly	Private	886 480	Arthurs Lake Road	colony
ptunarra brown butterfly	HEC	928 400	Lagoon of Islands	colony
ptunarra brown butterfly	Private	970 467	Black Johnny's Tier	colony
saddled galaxias	HEC	928 478	Arthurs Lake	endemic
saddled galaxias	HEC	990 420	Woods Lake	endemic
eagles (wedge-tailed)	Private	Confidential	Near Jilletts Tier	nest
eagles (white-bellied sea-eagle)	Private	Confidential	Near Pattersons Flats	nest
great crested grebe	HEC	945 408	Lagoon of Islands	foraging site

Species May Occur in Suitable Habitat	Habitat to Survey
ptunarra brown butterfly	Native grassland or woodland with more than 15% cover of tussock grass.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

WILL 4037

Species May Occur in Suitable Habitat	Habitat to Survey
pencil pine moth	Pencil pine forest.
ptunarra brown butterfly	Native grassland or woodland with more than 15% cover of tussock grass.

eagle (nest)			Large tracts (more than 10 ha) of eucalypt or mixed forest.	

WILMOT 4241

Known Localities of Species	Tenure	Map Grid	Locality	Notes
giant freshwater lobster	FRes / SF	347 186	Lake Barrington	
green and gold frog	Reserve	310 180	Wilmot	
freshwater snails *(Beddomeia lodderae)*	Private		Castra Rivulet (upper)	

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes, below about 400 m alt., esp. the Wilmot River and Dasher River.
green and gold frog	Permanent and temporary water bodies (streams, ponds, dams) with vegetation in or around them.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

WINGAROO 5858

Known Localities of Species	Tenure	Map Grid	Locality	Notes
dwarf galaxiid	Private	868 884	Wingaroo near the coast	
eagles (white-bellied sea-eagle)	Reserve	Confidential	Near Foochow Inlet	nest
New Holland mouse	FReserve		Wingaroo Reserve	colony

Species May Occur in Suitable Habitat	Habitat to Survey
Bass Strait wombat	Heath, scrub, woodland and pasture.
Australian grayling	Lower and middle reaches of coastal rivers.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
New Holland mouse	Dry coastal heathland and open heathy forest.

WINGS 4227

Species May Occur in Suitable Habitat	Habitat to Survey
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

WOODSDALE 5429

Known Localities of Species	Tenure	Map Grid	Locality	Notes
eagles (wedge-tailed)	SF	Confidential	Near Taffs Hill	nest
eagles (wedge-tailed)	SF	Confidential	Near Mount Ponsonby	nest near
eagles (wedge-tailed)	Private	Confidential	Mount Hobbs area	nest
eagles (wedge-tailed)	SF	Confidential	Bluff River area	nest
eagles (wedge-tailed)	SF	Confidential	Near Coxs Hill	nest

Species May Occur in Suitable Habitat	Habitat to Survey
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

WYBALENNA 5656

Known Localities of Species	Tenure	Map Grid	Locality	Notes
coastal birds (fairy tern)	Freserve	759 564	Chalky Island	breeding site
coastal birds (fairy tern, little penguin, short-tailed shearwater)	FReserve	756 605	Big Chalky Island	breeding sites
coastal birds (little penguin)	TA	717 680	Wybalenna South Islet	colony
coastal birds (little penguin)	TA	718 615	Wybalenna Mid Islet	colony
coastal birds (little penguin, s-t shearwater)	TA	720 687	Wybalenna Main Islet	colonies
coastal birds (short-tailed shearwater)		730 693	Settlement Point	colony
coastal birds (short-tailed shearwater)	Reserve		Coastline around Prime Seal Island	colonies
eagles (white-bellied sea-eagle)	Reserve	Confidential	Prime Seal Island	nest
marine turtles (leatherback)	Com'w		Swimming 40 nm west Prime Seal Is.	1973 record

Species May Occur in Suitable Habitat	Habitat to Survey
coastal birds (fairy tern)	Sand or shingle beaches, unvegetated sites near estuaries and nearby lakes, and estuarine and offshore islands.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

WYLDS 4429

Known Localities of Species	Tenure	Map Grid	Locality	Notes
cave ecosystem *(Goedetrechus parallelus)*		Confidential	Junee, Florentine area	
eagles (wedge-tailed)	SF	Confidential	On the Florentine River	nest

Species May Occur in Suitable Habitat	Habitat to Survey
cave-dwelling invertebrates	Junee, Florentine caves or other karst.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

WYNYARD 3846

Known Localities of Species	Tenure	Map Grid	Locality	Notes
Australian grayling	Crown	898 629	Inglis River upstream of Bass Highway	
Australian grayling	Crown	902 630	Inglis River at Bass Highway	
giant freshwater lobster	Private	906 650	Telfords Creek (dam)	
giant freshwater lobster	Priv/Res		Inglis and Flowerdale Rivers and trib.	key catchm'ts
freshwater snails *(Beddomeia capensis)*	Private	927 631	Stream near Table Cape lighthouse	type locality
coastal birds (hooded plover)	Reserve	938 618	Inglis River mouth and Cam R beaches	breeding site
coastal birds (little penguin)	Reserve	930 627	Freestone Cove	colony
coastal birds (short-tailed shearwater)			Around Table Cape	colony
eagles (white-bellied sea-eagle)	Private	Confidential	Near Table Cape	nest
marine turtles (leatherback)	Crown		Swimming 3 nm north of Wynyard	no date

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Lower and middle reaches of the Inglis River.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes, below about 400 m alt., esp. the Inglis River and Flowerdale River.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
burrowing crayfish (Burnie)	Seepages and streambanks in the Seabrook area.

velvet worms (northwest)	Wet forest with rotting logs and woody ground litter.
orange-bellied parrot	Migration feeding habitat: saltmarshes, beaches, coastal dunes, heathland and pasture within 10 km of the coast, including vegetated offshore islands.
coastal birds (hooded plover)	Sandy ocean beaches and dunes.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

YOLLA 3844

Known Localities of Species	Tenure	Map Grid	Locality	Notes
burrowing crayfish (Burnie)	Private	948 475	Origins of Seabrook Creek	Doran 1998
burrowing crayfish (Burnie)	Private	955 457	Tributary of Cam River	Doran 1998
burrowing crayfish (Burnie)	Private	970 461	Cam River	Doran 1998
giant freshwater lobster	Private	859 429	Inglis River tributary	key catchm't
giant freshwater lobster	Private	927 460	Camp Creek, Yolla	
giant freshwater lobster	Priv / Res	995 430	Guide River	
giant freshwater lobster	SF / Priv		Inglis River and tributaries	key catchm't

Species May Occur in Suitable Habitat	Habitat to Survey
Australian grayling	Middle and lower parts of Cam River.
burrowing crayfish (Burnie)	Seepages and streambanks in the catchment of Seabrook Creek.
eastern barred bandicoot	Grassy woodlands, native grasslands, mosaics of pasture and ground cover, including shrubby weeds.
giant freshwater lobster	North-flowing streams, rivers and other waterbodies, including lakes, below about 400 m alt., esp. the Inglis River, Cam River and Caulder River.
grey goshawk	Blackwood swamp forest and wet forest with old growth, especially where blackwoods occur.
velvet worms (northwest)	Wet forest with rotting logs and woody ground litter.
quoll (spotted-tailed, eastern)	All wetter forest types, coastal heath and bush-pasture interfaces.
eagle (nest)	Large tracts (more than 10 ha) of eucalypt or mixed forest.

SECTION II

TASMANIA'S THREATENED ANIMAL PROFILES

Identification, Distribution and Management

QUOLL (2 species)

Spotted-tailed quoll - *Dasyurus maculatus maculatus (Dasyuridae)*
Eastern quoll - *Dasyurus viverrinus (Dasyuridae)*

[Illustrations from 'Eyespy' Magazine 1986]

Status

Spotted-tailed quoll

Tasmania's *Threatened Species Protection Act 1995* - not listed but considered of high conservation significance
Commonwealth *Endangered Species Protection Act 1992* - Vulnerable

Eastern quoll

Tasmania's *Threatened Species Protection Act 1995* - not listed but considered of high conservation significance
Commonwealth *Endangered Species Protection Act 1992* - not listed

Description

The spotted-tailed quoll (or tiger quoll) is a medium-sized carnivorous (flesh-eating) marsupial with males weighing up to 4 kg and females 3.5 kg. They are powerfully built with a thick neck, strong head and rounded nose. The thick, short fur is golden to dark chocolate brown on the back and pale cream on the belly. There are distinct white spots of varying size over the back, head and along the long tail. Spotted-tailed quolls can grow to over a metre in length including the tail and have ridges for climbing on the pads of all feet. They are agile on the ground or while climbing and can occasionally be seen crossing or along roadsides.

In comparison, the eastern quoll is smaller and more finely built. Males weigh up to 1.5 kg and females 1.2 kg. Eastern quoll have a narrow head, tapered nose, long body and long tail. Fur colour is either grey to brown or a jet black with both colour types having white spots covering the head and body. There are no spots along the tail which usually ends in a coarse white tuft.

Distribution, Habitat and Biology

Spotted-tailed quolls occur throughout Tasmania and also in eastern Australia from Queensland to Victoria. On mainland Australia they have dramatically declined and now Tasmania remains their stronghold. While they occur throughout the State, they are rare and at naturally very low densities with highest numbers being found along the north coast and in small forested areas in the Gordon, King and Huon River catchments. Spotted-tailed quolls are probably now extinct on King Island and Flinders Island.

The spotted-tailed quoll is primarily a forest-dwelling species, most abundant in higher rainfall areas containing rainforest, wet forest and blackwood swamp forest. They also live in eucalypt forest, woodland and coastal heath, at all altitudes. Spotted-tailed quolls forage and hunt over farmland and pasture but shelter during the day in logs, among rocks and in thick vegetation. Individuals are solitary with large home ranges. They have been radio-tracked travelling over 20 km in a night. They are mainly active at night, although they sometimes forage and bask during the day. They are agile climbers and actively hunt small birds, mammals, reptiles and insects. They also scavenge on carrion and will readily kill unprotected poultry. They breed once a year with mating beginning around April. They produce up to 6 young which are carried in a pouch for several weeks then raised for several months in underground dens. Adults live for three to four years.

Eastern quoll became extinct on mainland Australia in the early 1960s but remain locally abundant in a wide range of habitats in Tasmania. They are most common in the dry eastern half of Tasmania at low to medium altitudes. They particularly flourish in agricultural areas where there is a bush-pasture interface, coming onto pastures at night to hunt for rodents and insects, especially cockchafer and corbie grubs. Although they are solitary animals, high densities can occur in suitable areas with many individuals overlapping in range. Eastern quoll become sexually mature in their first year at about 11 months of age. Breeding starts in late May to early June with up to six young born about one month later. The young remain in the female's pouch for about two months by which time they have become large and cumbersome and so are transferred to a well-hidden den. They continue their development until weaned and become independent around November. Life span is about four to five years in the wild.

Key Sites

Spotted-tail quoll

- Forested areas of the north bounded by Wynyard, Gladstone and the central and northeastern highlands.
- Northwest wet forests, encompassing the entire catchments of the Arthur and Montagu Rivers.
- Dry eucalypt forests in the central north coast area bounded by the Tamar, Devonport and the Western Tiers (Dazzler Range, Wurra Wurra Hills).
- Patches between the King River and Strahan, the Gordon River and Huon River catchments, and the coastal strip from Strahan to Temma.

Eastern quoll

A patchy distribution across Tasmania but more predominant in the eastern half. Hot spots include:

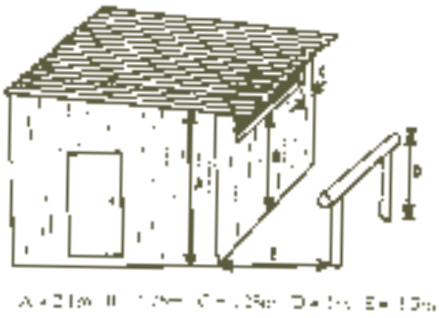
- Huon, Cygnet, Cradoc area
- Buckland, Triabunna, Lake Leake area
- Northeast around Scottsdale and Ringarooma

Key Threats (both quoll species)

- Widespread native vegetation clearance, especially clearfelling and conversion to plantation. This eliminates den sites and diversity of prey items.
- Road deaths in areas of high densities.
- Application of any poisons in insecticides or meat baits.
- Deliberate illegal persecution by shooting, trapping and poisoning.
- Predation on adults and young by feral and domestic dogs and cats.
- On mainland Australia, foxes are a significant threat through predation of young and competition for food.

Habitat Management (both quoll species)

- Regional planning of commercial forestry operations is important to ensure that large corridors (on the scale of 50 to 100 km square) of suitable native forest habitat are retained. Both species of quoll are solitary and territorial with large home ranges.
- Retain large areas of undisturbed native bush, especially in corridors and connected blocks. Areas with a natural diversity of fallen logs, dense understorey, rocks and wombat burrows are particularly good refuge sites for quolls.
- If you manage land containing quoll consider some form of long-term protection, e.g. wildlife sanctuary, management agreement, covenant, etc. Linking properties to form large corridors of native bush and establishing Bushcare or Land for Wildlife networks can help reduce habitat fragmentation.
- Application of 1080 to control browsing wallaby and possum must be strictly by permit and clearly as directed. Seek advice from the Parks and Wildlife Service. Poison should only be used in specified baits at prescribed concentrations to safeguard quoll and other non-target species. Wherever possible use alternative methods to reduce browsing pressure, e.g. fencing, shooting, de-stocking. Seek advice.



The predator-proof chook shed is made from tin or well-fitting vertical palings and has a footing. The chooks can reach the entrance by flying from the perch, whereas predators, like quolls and devils cannot (Source, Parks and Wildlife Service Information Sheet 1997).

Other Ways to Help (both quoll species)

- Pen and protect domestic poultry from attack. A quoll-proof poultry shed design (as shown) is very effective, so too is floppy-top fencing (contact the Parks and Wildlife Service for construction details).
- Control and prevent pets roaming at night. Actively and humanely destroy any feral cats in the area.
- Slow down when driving at night, dawn or dusk, especially in bushland fringe areas. If it is safe to do so then move any roadkills (e.g. possums, wallabies, rabbits) to the roadside to deter quolls (and other wildlife) from investigating.
- All new roading activities should implement measures to minimise road kills, e.g. physical structures or other designs to minimise traffic speed, provision of runways to redirect animals from the road surface, warning signs, etc.
- Quolls, especially eastern quoll, are great pasture pest controllers. Think carefully when using toxic chemicals or sprays as to their effect on these animals and their food source.
- Shooting, poisoning or trapping of quolls is illegal. Please report any offences to the Parks and Wildlife Service. Information can be kept confidential.
- If you find an injured adult or orphaned pouch young, contact the Parks and Wildlife Service immediately. Specialist carers are located throughout Tasmania.
- If you have quolls on your property, enjoy the benefits of native controllers of mice, rats and insect pests.
- Spotlighting tours for quolls are often conducted in National Parks during the summer period. Contact your nearest Parks office for details.

More Information

Bryant, S. L. (1988). Maintenance and captive breeding of the Eastern quoll, *Dasyurus viverrinus*. International Zoo Yearbook 27: pp 119-124.

Jones, M. E. and Rose, R. K. (1996). Preliminary assessment of distribution and habitat associations of the spotted-tailed quoll (*Dasyurus maculatus maculatus*) and eastern quoll (*D. viverrinus*) in Tasmania to determine conservation and reservation status. Report to the Tasmanian RFA Environment and Heritage Technical Committee.

Parks and Wildlife Service (1997). Tasmanian Devils and Quolls. Wildlife Information Sheet, Macquarie Street, Hobart, Tasmania.

Watts, D. (1993). Tasmanian Mammals. Revised edition. Peregrine Press, Kettering, Tasmania.

1: 25 000 TASMAP sheets with known localities and potential habitat

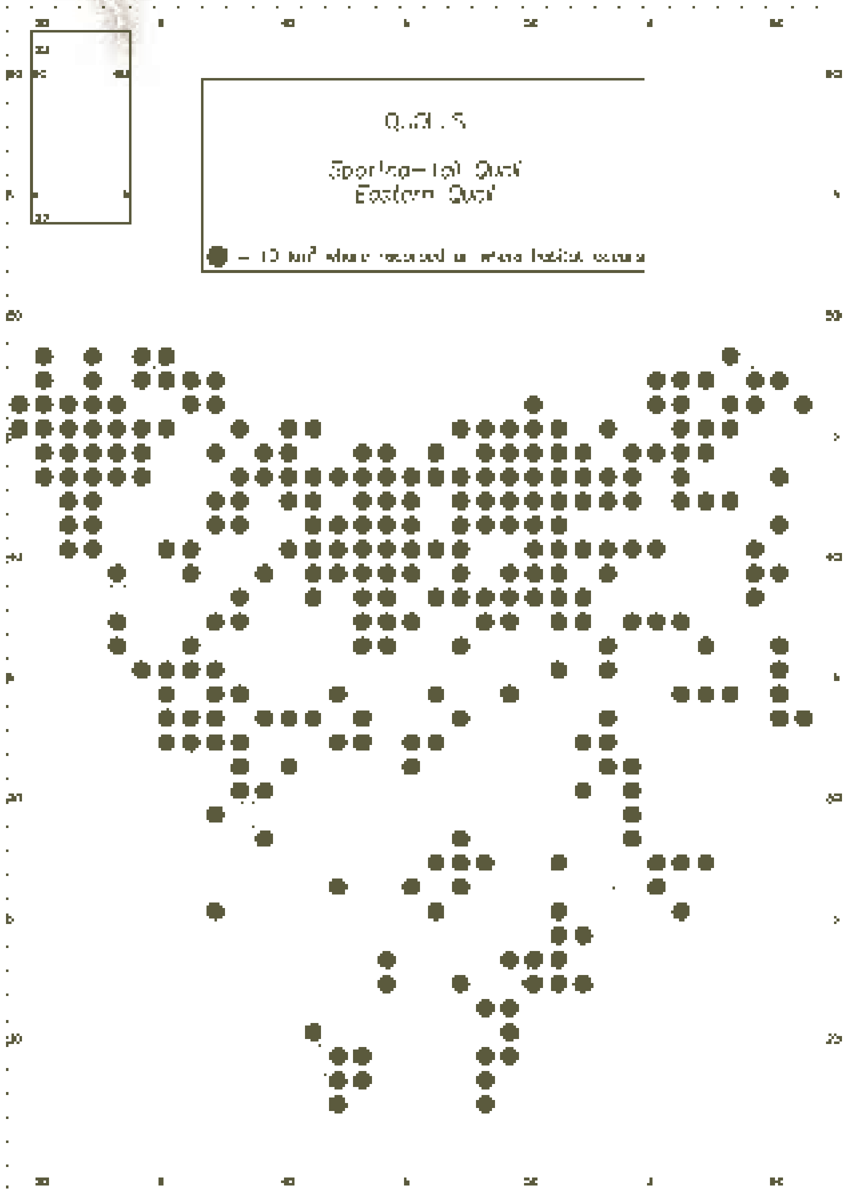
Abel	Ada	Adamsfield	Ahrberg
Albina	Ansons Bay	Apslawn	Arrowsmith
Bains	Balfour	Baretop	Barnes Bay
Beaconsfield	Bell Bay	Ben Nevis	Bertha
Beryl	Bicheno	Binalong	Birchs
Blessington	Block	Blue Tier	Bluff
Boltons (Bougainville)	Boltons (Grindstone)	Borradaile	Bowes
Bowood	Breaksea	Bridgenorth	Bridport
Brilliant	Broadmarsh	Bronte	Buckland
Burnie	Bushy Park	Calder	Cameron
Campbell Town	Carlton	Castra	Cathedral
Cawood	Cethana	Charter	Cleveland
Cluan	Cluny	Colebrook	Coles Bay
Collingwood	Collinsvale	Colonels	Communication
Conara	Cox	Cradle	Cranbrook
Cremorne	Cressy	Crossing	Cygnet
D'Aguilar	D'Arcys	Darwin	Dee
Delmont	Deloraine	Dempster	Dennistoun
Derby	Devonport	Dilston	Dobson
Donaldson	Dover	Dublin Town	Dunalley
Dundas	Echo	Eddystone	Ellendale
Ellinthorp	Elliott	Endeavour	Engineer
Evandale	Exeter	Faddens	Fingal
Folly	Friendly	Geeveston	Giblin
Gladstone	Glen Huon	Gog	Gormanston
Gray (Ironhouse)	Greens Beach	Grim	Guildford

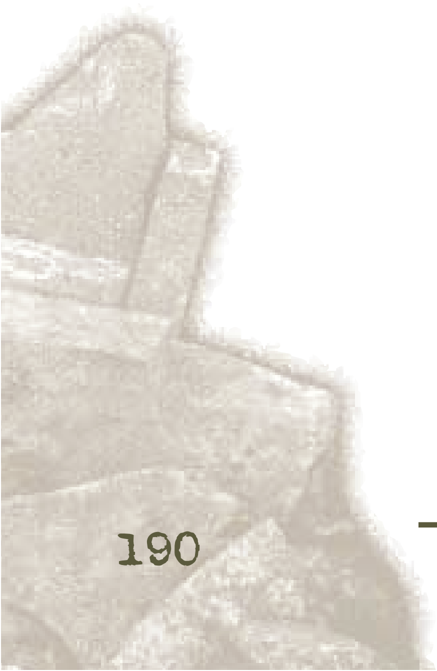
Hamilton
Hastings
Hermitage
Huonville
Keith
Lagoon
Latrobe
Legge
Liena
Lilydale
Livingstone
Longley
Low Head
Lymington
Mathinna
McCall
Mella
Mole Creek
Montagu
Morriston
Nabowla
O'Connors
Ordnance
Owen
Parsons
Philips
Poatina
Propsting
Railton
Raoul
Recherche
Ringarooma
Rosebery
Roys
Saddleback
Scotts
Sheffield
Split Rock
St Marys
Stanley
Strathgordon
Sumac
Table Head
Tarraleah
Telopea
Tiger
Triabunna
Ulverstone
Vera
Vincents
Waterhouse
Weymouth
Woodsdale

Hanleth
Henry
Hibbs
Innes
Kellevie
Lake Mackenzie
Launceston
Lemont
Liffey
Limekiln
Loddon
Lonnavale
Loyetea
Mainwaring
Maurice
McPartlan
Meredith
Monarch
Montana
Mulcahy
Naturaliste
Oatlands
Orford
Oxberry
Patersonia
Picton
Port Arthur
Prospect
Raminea
Ravensdale
Retreat
Rocky Cape
Ross
Rufus
Sarah
Scottsdale
Skeleton
Springfield
St Pauls Dome
Stonor
Strickland
Sundown
Tam O'Shanter
Tayatea
Temma
Togari
Trial
Varna
Veridian
Waddamana
Waterloo
Whitefoord
Wynyard

Hardwicke
Henty (Bellinger)
Hippolyte
Interview
Kelly
Lancelot
Lea
Leprena
Lileah
Lisdillon
Lodi
Loongana
Luina
Mangana
Mawbanna
Meerim
Milabena
Monpeelyata
Montgomery
Murdunna
Nile
Oceana
Osmund
Parkham
Pearly Brook
Pillans
Port Sorell
Pyengana
Ramsay
Ray
Riana
Roger
Rowallan
Rugby
Savage River
Serpentine
Smithton
Spurrs Rivulet
Stacks
Stowport
Stringer
Swansea
Taranna
Tea Tree
Tewkesbury
Tomahawk
Tullah
Venables (Johnsons Bay)
Victoria
Waratah
Wayatinah
Wihareja
Yolla

Harford
Henty (Mallanna)
Holder
Jacobs
Kindred
Lanka
Leake
Lewis
Lily
Lisle
Longford
Louisa
Lyme Regis
Marrawah
Maydena
Melaleuca
Millers
Montacute
Moores
Musselroe
Nunamara
Olegas
Ouse
Parrawe
Pencil Pine
Pioneer
Professor
Quamby Bluff
Ramsay
Razorback
Richmond
Rookery
Royalty
Runnymede
Scamander (Beaumaris)
Settlement
Sorell
St Helens
Stanhope
Strahan
Studland
Table
Taroona
Teepookana
The Gardens
Tooms
Tunbridge
Venables (Kenneth Bay)
View
Warnes
West Frankford
Wilmot


Spotted-tail Quoll
Eastern Quoll



THYLACINE

Thylacinus cynocephalus (Thylacinidae)

[Illustration from PWS source library]

Status

Tasmania's *Threatened Species Protection Act 1995* - Extinct
Commonwealth *Endangered Species Protection Act 1992* - Extinct

Description

The thylacine (sometimes called the Tasmanian tiger) is a marsupial with no genetic relationship to eutherian dogs, wolves or tigers, etc. The thylacine stood about 60 cm tall at the shoulder and measured up to 100 to 130 cm in head to body length. The long, stiff tail measured 50 to 65 cm in length. Adults weighed 20 to 30 kg. The coat was short, coarse and sandy brown in colour. A series of chocolate brown stripes ran across the body extending down the back and increasing in width toward the rump to the start of the tail. No stripes occurred down the tail which was semi-rigid and held erect while moving. The gait was stiff, deliberate and relatively slow for an active predator. The ears were large and erect and the head tapered to a long nose. Vocalisations included a howl, cough, growl and yap.

Distribution, Habitat and Biology

The thylacine was once distributed on the mainland of Australia, Tasmania and Papua New Guinea. Fossil evidence suggests it became extinct in all but Tasmania about two thousand years ago with the arrival of the dingo. In Tasmania the thylacine was mainly found across the northwest, north and eastern half of the State, favouring to hunt in open grassland, scrub and lightly timbered areas including dry sclerophyll forest. As a large, top order predator and territorial animal, the species was naturally rare and in low numbers.

The last known wild thylacine was captured in 1933 and died in 1936 at the Beaumaris Zoo on the Hobart Domain. The last captive specimen also died about this time in the Berlin Zoo. Since then there have been numerous and sporadic sightings of the thylacine from within its former distribution in Tasmania as well as mainland Australia. Several extensive surveys into remote parts of Tasmania were undertaken in the 1980s, employing a variety of techniques including remote sensing cameras. Despite many detailed reports no positive evidence has been obtained of the thylacine's existence since 1936.

The thylacine was hunted to extinction by early European settlers, especially pastoralists, for killing sheep and other livestock. In the 1830s the Van Diemens Land Company offered bounties for thylacine scalps and under pressure the Tasmanian Government quickly followed suit offering a bounty of one pound for skins caught anywhere across the State. Between 1888 and 1909 Government records indicate 2184 scalps were returned, however, anecdotal reports suggest a much larger number of animals were killed regardless of collecting the bounty. Due to public concern at the dramatic decline and scarcity of animals by the turn of the century, the Government reversed its decision and in 1936 listed the thylacine as being 'wholly protected'. Ironically, this is the same year the species is officially known to have become extinct. Some suggestions of a disease or epidemic at the turn of the century which affected devil and eastern quoll numbers may have also contributed to the thylacine's final spiral to extinction. Habitat destruction and increasing pastoralisation was also reducing the natural range availability for the species during this time.

Little is known of the life history of this species. The thylacine was a nocturnal predator sleeping in well concealed dens and lairs during the day. It actively hunted pademelon, Bennetts wallaby and other smaller marsupials, rats, birds and possibly reptiles. The thylacine tirelessly pursued its prey at a steady trot until it was exhausted and easy to kill. In captivity the animal was known to be shy, quiet and retiring although accounts of it in the wild suggest it would fiercely defend itself against dog attack.

Breeding is thought to have occurred in winter (like other closely-related carnivorous marsupials) with two to three young reared through the early stages in a rear-opening pouch containing four teats. At several months of age the young were left in a den until weaned. Juveniles probably accompanied the female until they were well grown and able to hunt independently. Average lifespan was probably about 8 to 10 years in the wild.

The thylacine was a unique species, being the only member of the Family Thylacinidae. Its nearest extant relatives are the Tasmanian devil *Sarcophilus harrisii* and eastern quoll *Dasyurus viverrinus*, both confined to Tasmania, and the spotted-tailed quoll *Dasyurus maculatus* found in Tasmania and southeastern mainland Australia.

Key Sites

- Widespread in low numbers in woodland and grassland across Tasmania, except thickly-wooded rainforest and possibly far southwest regions.

Key Threats

- Species was hunted to extinction during early colonial settlement.

Ways to Help other Native Species

- Become familiar with the story of extinction of the thylacine. Parallels exist today with many of Tasmania's other unique or declining wildlife, e.g. wedge-tailed eagle, Tasmanian devil, etc. Actively encourage conservation of wildlife in your area by protecting habitat and eliminating feral pests. Consider establishing wildlife covenants on your property or joining Bushcare or the Land for Wildlife program to combine nature conservation with property management.
- Control pets at night that can destroy any of Tasmania's native creatures. Actively trap and humanely destroy any feral cats in your area.
- On mainland Australia foxes are a major predator and the establishment of foxes in Tasmania is a serious potential threat to native wildlife. Keep Tasmania 'fox free'.
- Be responsible and protect your stock and domestic poultry from predator attack. Net or pen poultry at night. Build a predator-proof chook pen to prevent access (see quoll profile for details). Simple floppy-top fences will prevent possums or other species from damaging livestock or crops. Contact the Parks and Wildlife Service for construction details for floppy-top fencing.
- Report any offences against Tasmania's wildlife to the Parks and Wildlife Service or local District Rangers. Most of our native creatures are wholly protected by law and should not be trapped, kept or harmed in any way. Permits must be obtained for culling of brushtail possum or wallaby for crop protection.
- Report any sightings of the thylacine to the Wildlife Branch, Parks and Wildlife Service. Sightings should include precise details on location, time, activity and evidence such as plaster casts of foot prints, photographs, hair or faeces samples, etc.

More Information

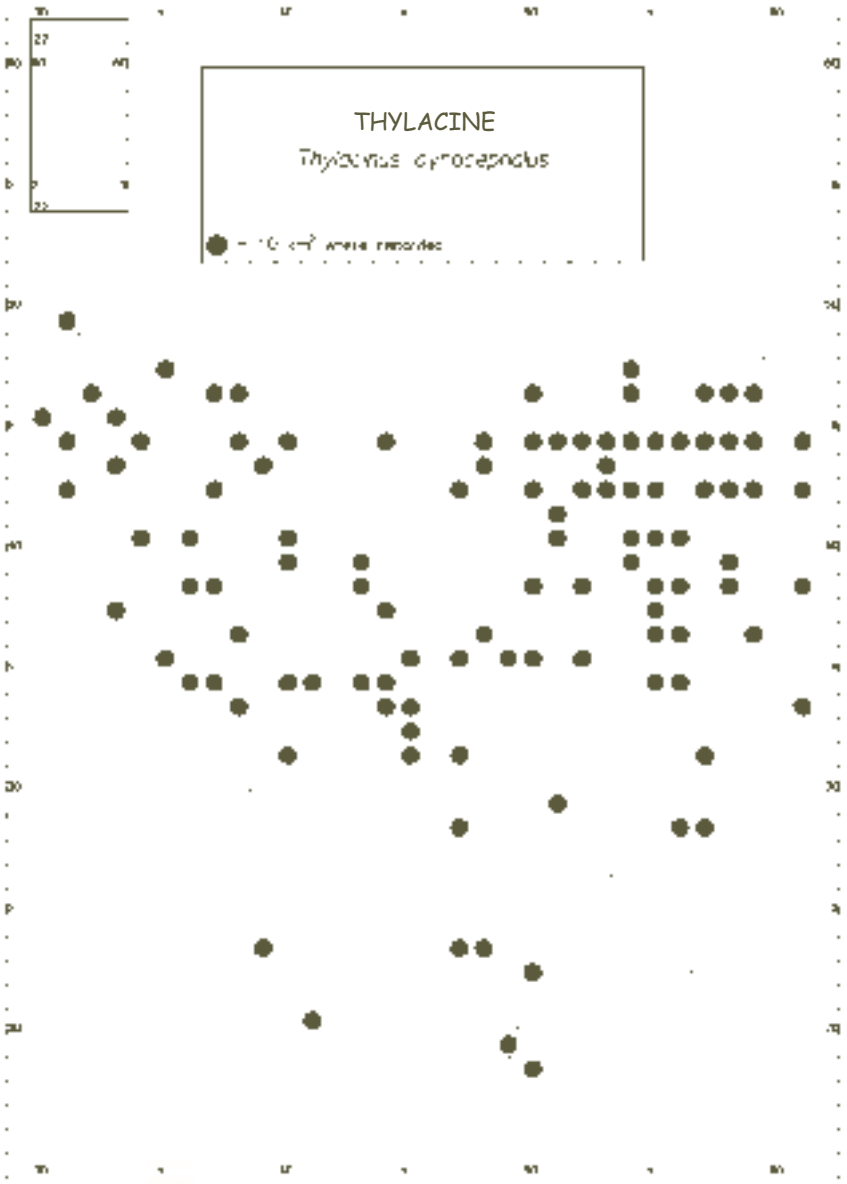
Andrews, P. (1985). Thylacine. Pamphlet produced by the Tasmanian Museum and Art Gallery, Macquarie Street, Hobart, Tasmania.

Guiler, E. (1985). Thylacine: the tragedy of the Tasmanian tiger. Oxford University Press, Melbourne.

Watts, D. (1993). Tasmanian Mammals. Revised edition. Peregrine Press, Kettering.

1: 25 000 TASMAP sheets with known localities and potential habitat

Not sufficient detailed information to be included in Section I.


THYLACINE
Thylacinus cynocephalus

EASTERN BARRED BANDICOOT

Perameles gunnii gunnii (Peramelidae)

[Photo by Hans and Annie Wapstra]

Status

Tasmania's *Threatened Species Protection Act 1995* - not listed but considered of high conservation significance
Commonwealth *Endangered Species Protection Act 1992* - Vulnerable

Description

The eastern barred bandicoot is a small rabbit-sized marsupial, with a slender head tapering to a long, pink nose. The fur is short and coarse. Body colour is greyish to light brown with three or four very distinctive pale bands or stripes across the rump. The belly, feet and tail are pale cream. The ears are large, erect and prominent. The hind legs are longer than the fore legs, producing a bounding gait and enabling the animal to sit upright. Head and body length is about 30 cm and the short, furless tail is about 10 cm long. Signs of bandicoots being present include small conical nose holes dug in soft soil. It is easily distinguished from Tasmania's only other bandicoot species, the southern brown bandicoot *Isoodon obesulus*, which is mid to dark brown in body colour, paler underneath and with shorter grey ears.

Distribution, Habitat and Biology

The eastern barred bandicoot is relatively widespread and abundant in some parts of Tasmania, although it has significantly declined in its natural habitat throughout the Midlands. It is most common in the southeast and northwest of Tasmania but less common in the northeast, Midlands and east coast. There are no records of the species from the southwest or from altitudes above 950 m. Eastern barred bandicoots have disappeared from most of their original range in the Midlands and now persist only in isolated populations around towns where ground cover is available. Land clearing for pasture has enabled the bandicoot to extend its range into parts of the north and southeast that previously were unsuitable. They are often seen close to urban centres on backyard lawns and gardens or crossing roads. Populations fluctuate widely both seasonally, according to rainfall, and yearly in 'boom and bust' cycles. A closely related sub-species is on the brink of extinction in South Australia and Victoria.

Eastern barred bandicoots prefer open grassy areas for foraging but require some form of thick ground cover for shelter and nesting. Their native habitat is grassland and grassy woodland dominated by tussocks, reeds and grasses, although they can adapt to modified habitats like pasture and semi-urban parks and gardens. Cover can be provided by native vegetation, including tussock grasses, sedges and shrubs, as well as dense prickly weeds, such as gorse and blackberry. Eastern barred bandicoots particularly flourish in areas of good quality agricultural land (deep soils, high rainfall) bordered by native bush.

Eastern barred bandicoots become active after dusk when they emerge to feed on earthworms and invertebrates (including pasture pests like corbie grubs) and plant material, such as underground fungi and berries. These are obtained by digging small conical holes in moist soil. During the day they sleep in a grass-lined nest wherever thick cover is available. Bandicoots breed rapidly, usually from May to December. They can produce 3 to 4 litters a year of 1 to 4 young. They are shy and cryptic creatures, giving a short grunt or 'freezing' when startled.

Key Sites

Because populations fluctuate over years, any native bush containing eastern barred bandicoots is important.

- Long-term key areas include pasture-bushland mosaics in the northwest and southeast.
- Hot spots include the Collinsvale and Huon areas in the southeast and Devonport to Smithton in the northwest.

Key Threats

- Clearing and fragmentation of native cover (especially the ground layer) for forestry, agriculture, urbanisation or other purposes.
- Predation, especially by feral and domestic cats and dogs.
- Toxoplasmosis, i.e. a disease carried by cats and spread through the grass and soil in faeces and urine.
- Road deaths.
- Pesticides and their effect on the invertebrate food supply.
- Poisoning by snail baits and other commonly used garden and household products.

Habitat Management (also assists brown bandicoot)

- Any native habitats, e.g. grasslands, tussock, grassy paddocks, reeds, heath, etc., with eastern barred bandicoots have high conservation value. Retain as much undisturbed native bush as possible, especially the understorey plants needed for cover and nesting.
- Maintain and encourage ground cover. Where weeds such as gorse and blackberries provide shelter for bandicoots, systematically clear these in a mosaic or patch fashion until native species are established. Suitable native plants which form a dense ground cover include sags *(Lomandra* and *Lepidosperma sp.)*, *Gahnia* species and species of *Acacia, Grevillia, Hakea* and *Correa.* Long native grasses and reeds are particularly suitable.
- Where possible maintain a mosaic of natural, dense cover bordering agricultural land, especially pasture. If you manage land in 'hot spot' areas consider some form of long-term protection, e.g. wildlife sanctuary, management agreement, covenant, etc. Linking properties to form large corridors of native bush and establishing Bushcare or Land for Wildlife networks can help reduce habitat fragmentation.
- Actively reduce your application of poisons and chemicals into soils. Try alternative and less harmful methods of insect and weed control.

Other Ways to Help (also assists brown bandicoot)

- Keep cats and dogs indoors at night as this is when bandicoots are active. Do not allow dogs to roam during the day when they can flush bandicoots from their nests. Domestic cats readily kill bandicoots, adults and young.
- Actively trap and humanely destroy feral cats in your area as they will decimate local bandicoot populations (and other small mammals and birds).
- To prevent road mortality, slow down and take care when driving at night, dawn or dusk. Bandicoots become dazzled by lights and often cross or stop on roads.
- Replace snail baits and poisons with natural pest deterrents. They are safer and just as effective.
- Always sift garden mulch and raked leaves before burning as these may contain nesting bandicoots or young.
- If you find an injured adult or orphaned pouch young, contact the Parks and Wildlife Service immediately. Specialist carers are located throughout Tasmania.
- If you have bandicoots on your property, enjoy the benefits of native controllers of insect pests.

More Information

Mallick, S. A., Driessen, M. M. and Hocking, G. J. (1997). Biology and conservation of the eastern barred bandicoot *(Perameles gunnii)* in Tasmania. Wildlife Report No. 97/1. Parks and Wildlife Service, Tasmania.

Parks and Wildlife Service (1997). Eastern barred bandicoot. Threatened Species Information Sheet. Macquarie Street, Hobart, Tasmania.

1: 25 000 TASMAP sheets with known localities and potential habitat for eastern barred bandicoot

Ansons Bay	Apslawn	Bains	Barnes Bay
Beaconsfield	Bell Bay	Bicheno	Blackmans Bay
Blessington	Blue Tier	Boltons (Bougainville)	Boltons (Grindstone)
Bothwell	Bowood	Bridgenorth	Bridport
Broadmarsh	Bronte	Buckland	Burnie
Bushy Park	Calder	Campbell Town	Carlton
Castra	Cawood	Cethana	Cleveland
Cluan	Cluny	Colebrook	Colonels
Communication	Conara	Cranbrook	Cremorne
Cressy	Cygnet	D'Arcys	Darlington
Delmont	Deloraine	Dennistoun	Derby
Devonport	Diamond	Dilston	Dobson
Dover	Dublin Town	Dunalley	Echo
Elderslie	Ellendale	Ellinthorp	Evandale
Exeter	Faddens	Fingal	Folly
Geeveston	Giblin	Gladstone	Glen Huon
Gog	Gray (Ironhouse)	Gray (Piccaninny)	Hamilton
Hanleth	Harford	Hastings	Henry
Hermitage	Hobart	Huonville	Interlaken
Jacobs	Keith	Kellevie	Kempton
Kindred	Lanka	Latrobe	Launceston

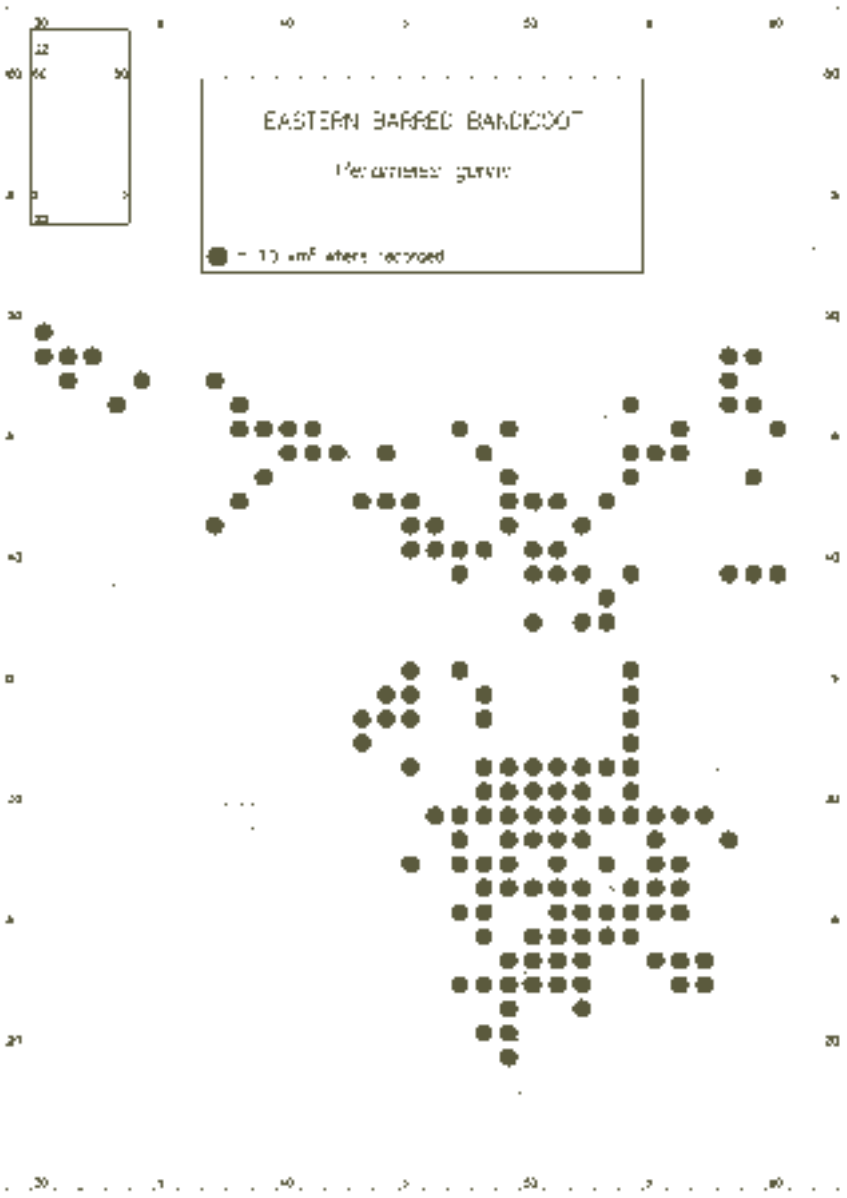
Leake
Lileah
Longford
Lyme Regis
Maurice
Mella
Monarch
Morriston
New Norfolk
Oatlands
Oxberry
Patersonia
Port Arthur
Quamby Bluff
Retreat
Ringarooma
Ross
Sandspit
Snow
St John
Stanhope
Stowport
Taranna
Tewkesbury
Triabunna
Victoria
Waterloo
Whitefoord
Yolla

Lemont
Lilydale
Longley
Lymington
Mawbanna
Milabena
Montacute
Murdunna
Nile
Oatlands
Parkham
Pearly Brook
Port Sorell
Railton
Riana
Rocky Cape
Royalty
Scottsdale
Sorell
St Marys
Stanley
Strickland
Taroona
Togari
Tunbridge
Vincents
West Frankford
Wilmot

Leprena
Lisdillon
Low Head
Marrawah
Maydena
Millers
Montagu
Musselroe
Nunamara
Orford
Parrawe
Pioneer
Prospect
Raminea
Richmond
Roger
Roys
Sheffield
Springfield
St Marys
Stonor
Swansea
Tayatea
Tomahawk
Ulverstone
Waddamana
Westbury
Woodsdale

Liffey
Lisle
Loyetea
Mathinna
Mayfield
Mole Creek
Montana
Nabowla
O'Connors
Ouse
Partridge
Poatina
Pyengana
Ravensdale
Riedle
Rossarden
Runnymede
Smithton
St Helens
St Pauls Dome
Stonor
Table
Tea Tree
Tooms
Uxbridge
Waterhouse
Weymouth
Wynyard

EASTERN BARRED BANDICOOT



BASS STRAIT WOMBAT

Vombatus ursinus ursinus (Vombatidae)

[Photo from PWS source library]

Status

Tasmania's *Threatened Species Protection Act 1995* - not listed but considered of high conservation significance
Commonwealth *Endangered Species Protection Act 1992* - nominated for listing as Vulnerable

Description

Identified by being smaller than the common wombat *Vombatus ursinus* at around 68 cm in length compared to 85 cm. Fur colour is typically grey to fawn, being short, coarse and close to the body but considered softer and more lightly hued than the common wombat. General body appearance is stout and barrel shaped with short legs bearing strong claws for digging. The tail is very reduced. The head is broad and round with a flat nose, small ears and eyes, and bearing strong, blunt teeth. Females have a typical marsupial pouch which opens backwards to accommodate the digging and burrowing nature of the species. Can make grunting, coughing or hissing sounds if agitated.

Distribution, Habitat and Biology

Historical accounts of this unique sub-species document its range as once being throughout Bass Strait on King Island, Flinders Island, Cape Barren Island, Clarke Island, and possibly also Deal Island (sub-fossil evidence) and Badger Island. Today it is known only from Flinders Island where it is still considered widespread, with a population estimate of about 4000 individuals. Specimens of this sub-species were the first to be scientifically studied and referenced as 'wombats'. It is reported that Governor Hunter received the first specimen collected by George Bass and Mathew Flinders from Cape Barren Island in 1798.

The decline of the Bass Strait wombat throughout most of its range by the late 1890s was probably due to it being a source of meat for sealers and early settlers, together with the significant clearing of native vegetation for pasture. This sub-species has not been identified on other islands in Bass Strait since about 1910.

From all accounts the Bass Strait wombat appears similar in behaviour and life history to the common wombat. They are mainly nocturnal, secretive and shy, forming loose colonies centred around burrows dug deep into loose soil, banks or thick vegetation. They are herbivorous and graze on a wide variety of native and introduced grasses and shrubby foliage. Their habitat preference is heathland, grassy woodland and introduced pastures. While they are nocturnal they can also be seen grazing during the day.

Key Sites

- Surviving only on Flinders Island.

Key Threats

- Shooting, poisoning, disease and continued clearing of native vegetation required for burrows and retreats.

Management Recommendations and Other Ways to Help

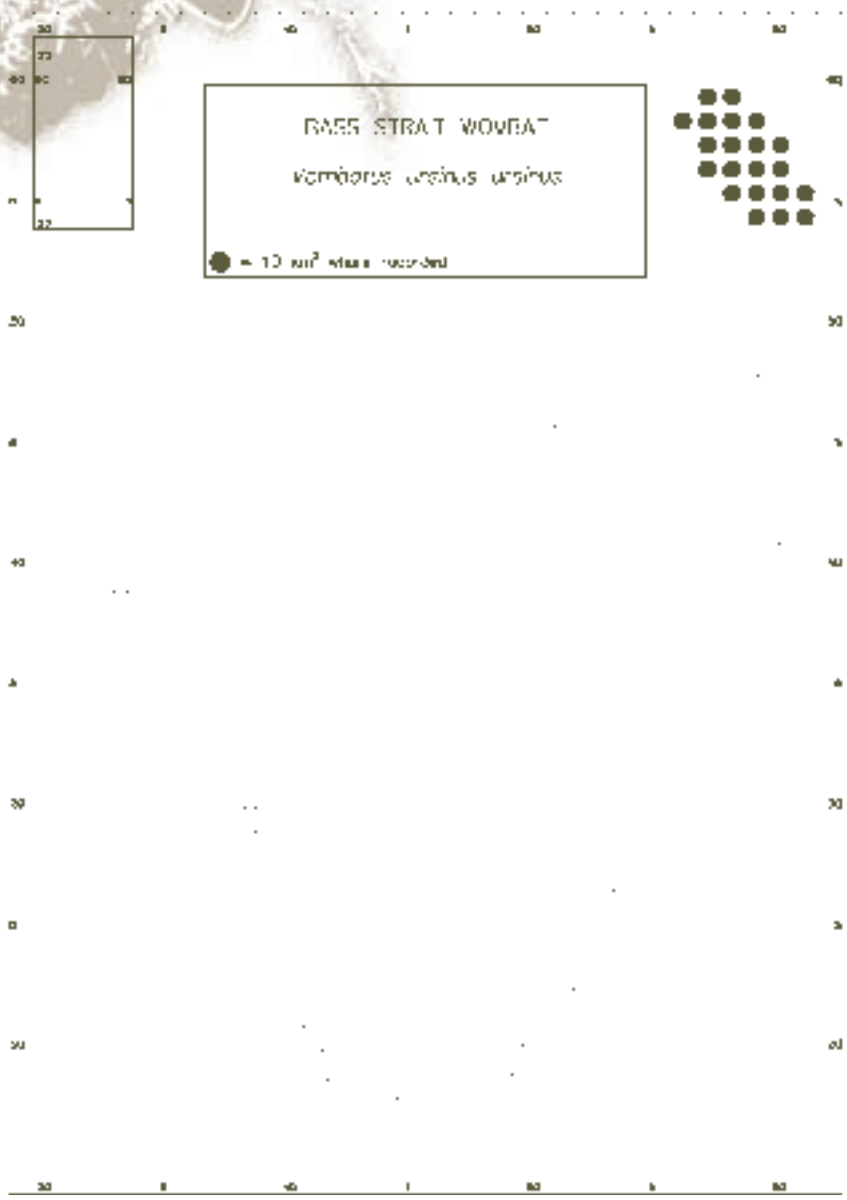
- If you manage land on Flinders Island be considerate to native browsing animals like the wombat. Retain a patchwork of native vegetation and pasture and take care with the use of poisons and sprays.
- If you own land containing wombat colonies consider some form of long-term protection, e.g. wildlife sanctuary, management agreement, covenant, etc. Linking properties to form large corridors of native bush and establishing Bushcare or Land for Wildlife networks can help reduce habitat fragmentation.
- Be aware of this unique species' historical significance and limited range; be proud to protect remnant populations.
- Sightings or evidence (e.g. diggings, prints or large, square droppings) of wombats on other islands in Bass Strait may confirm remnant populations still surviving. Please report any information to the Threatened Species Unit or District Ranger.

More Information

Hope, J. H. (1973) Mammals of the Bass Strait islands. Proceedings Royal Society of Victoria 85(2): 163-195.
Sharland, M. (1963). Tasmanian wildlife. Melbourne University Press, Parkville, Victoria.
Troughton, E. (1967). Furred animals of Australia. Angus and Robertson Ltd. Castlereagh Street, Sydney.

1: 25 000 TASMAP sheets with known locations and potential habitat

Arthurs	Emita	Fisher	Memana
Leventhorpe	Loccota	Logan	Palana
Patriarchs	Sellars	Tanner	Whitemark
Wingaroo			


BASS STRAIT WOMBAT
Vombatus ursinus ursinus

NEW HOLLAND MOUSE

Pseudomys novaehollandiae (Muridae)

[Photo from Watts 1993]

Status

Tasmania's *Threatened Species Protection Act 1995* - Rare
Commonwealth *Endangered Species Protection Act 1992* - not listed

Description

The New Holland mouse is a small attractive native mouse with large eyes, ears and a rounded snout. The species measures up to 9 cm in body length and weighs about 20 to 25 grams. The fur is coarse grey to tan brown on the back and white underneath with white feet. The tail is long, being furred on the top side but with skin underneath. Males have a bluish to red skin patch on the scrotum. The New Holland mouse is similar in general appearance to the introduced house mouse *Mus musculus* but does not have a strong mouse odour or a notch in the upper incisor (tooth). House mice also have greyish fur and tails which are entirely lightly covered by fur.

Distribution, Habitat and Biology

The New Holland mouse occurs coastally in New South Wales, Victoria and Tasmania. It was once thought to have become extinct but was re-discovered in the late 1960s in restricted coastal habitat in Victoria and then New South Wales. Recent surveys have shown the population to have severely declined in eastern Victoria, becoming extinct in at least three and possibly six locations in the past ten years. In Tasmania the species was known from subfossil evidence from Ranga Cave on Flinders Island and Flowery Gully in northern Tasmania but was not live trapped until 1976. Its current distribution is not well known but is thought to occur in small pockets along the north and east coasts from Beaconsfield to Friendly Beaches and Coles Bay, near Bicheno and also on Flinders Island. Surveys conducted from 1998 to 1999 by T. Pye have confirmed Tasmanian populations at most previous localities as well as new sites at Coles Bay. All sites are less than 15 km inland and below 200 m altitude.

On mainland Australia the species occurs in restricted dry coastal heathland, heathy woodland, open forest, swamp edges and vegetated sand dunes, all on siliceous soils. In Tasmania New Holland mice prefer coastal dry heath on a sandy substrate with a dense and floristically diverse understorey. The species has a strong association with heath plants such as *Xanthorrhoea australis, Hypolaena fastigiata* and *Leptospermum concavum* and has been trapped in vegetation types ranging from *Allocasuarina* woodland, semi-woodland with an open understorey, open heathland and *Juncus* hardpan. Population densities are known to fluctuate seasonally but will steadily decline and die out (becoming locally extinct) as the vegetation becomes older and less diverse. The highest densities occur in recently burnt vegetation containing a diversity of seed producing legumes and epacrids, probably actively regenerating 5 to 10 years after fire.

In Tasmania the New Holland mouse is considered rare by virtue of its restricted habitat and localised populations. Insufficient information is available to determine whether the species has undergone a similar decline in Tasmania as on mainland Australia.

New Holland mice are nocturnal. They feed and forage from dusk until dawn, mainly on seeds but also flowers, leaves, fungi and invertebrates. They shelter and nest in deep burrows which they excavate in the sandy soil. Occasionally twig nests are built at the base of tussocks or grass trees which serve as temporary nests or day nests. Burrow openings are circular, about 10 cm in diameter, and often clustered in colonies. Individuals are social and possibly share nests and burrows and form family groups based around a breeding female. Breeding takes place from early November to late March, with two to six young born per litter. Females mature at two to four months of age and can produce one litter in their first year and two in their second. They probably live only for about two years. Radio-tracking has estimated that some individuals have home ranges between 0.3 to 1.3 ha and that movement is not restricted to vegetation type but may vary seasonally.

Key Sites

- Coastal sites from Mt William to Eddystone Point
- Coles Bay Coastal Reserve
- Friendly Beaches area
- Wingaroo, Mt Bows, Whitemark and near Emita on Flinders Island

Key Threats

- Habitat loss and fragmentation through vegetation clearing, coastal development and inappropriate burning regimes.
- Weed invasion making habitat unsuitable.
- Predation by cats and dogs.
- Root-rot infection of vegetation causing die-off and loss of habitat and seed plants.
- Potential displacement and competition with house mice for food and territory.

Habitat Management

- The species naturally prefers regular, low intensity, patch or mosaic burns, whereas current fire regimes tend to be suppressed and irregular, resulting in less frequent but more intense fires. A burning regime of patchy, low-intensity burns at intervals of 10 years will help maintain a mosaic of suitable habitat for this species as well as other heathland fauna. Burning should only be undertaken during winter or early in autumn. Seek advice before undertaking any burning.
- Maintain large areas of intact native vegetation along the coast, especially where there is a diverse understorey. Do not drain, clear or introduce exotic plant species into coastal areas.
- Any coastal developments, including subdivisions that require the clearance of native vegetation in key areas, should undertake fauna surveys prior to planning.
- If you own land containing the New Holland mouse consider some form of long-term protection, e.g. wildlife sanctuary, management agreement, covenant, etc. Linking properties to form large corridors of native coastal habitat and establishing Bushcare or Land for Wildlife networks can help reduce habitat fragmentation.

Other Ways to Help

- Control pets at night. Actively trap and humanely destroy any feral cats in the area.
- On mainland Australia foxes are a major predator and the establishment of foxes in Tasmania is a serious potential threat. Help keep Tasmania 'fox free'.
- If you find a small rodent fitting the description of the New Holland mouse in a likely habitat, please contact the Threatened Species Unit. An easy identifying feature is the 'smell test', i.e. house mice have a strong mouse odour. Information on the current distribution and ecology of the species is limited.

More Information

Hocking, G. J. (1980). The occurrence of the New Holland mouse *Pseudomys novaehollandiae* (Waterhouse) in Tasmania. Australian Wildlife Research 7(1): 71-77.

Pye, T. (1991). The New Holland mouse (*Pseudomys novaehollandiae*) (Rodentia: Muridae) in Tasmania: a field study. Wildlife Research 18: 521-531.

Threatened Species Unit (1999). Listing Statement: New Holland mouse *Pseudomys novaehollandiae*. Parks and Wildlife Service, Hobart Tasmania.

Van Dyke, S. (1999). New Holland mouse. Nature Australia (Magazine) Summer Edition 1998-99: 48-53. Australian Museum, Canberra.

Watts, D. (1993). Tasmanian Mammals. Revised edition. Peregrine Press, Kettering.

1:25 000 TASMAP sheets with known localities and potential habitat

Ansons Bay	Beaconsfield	Bell Bay	Bicheno
Binalong	Bridport	Coles Bay	Eddystone
Friendly	Graham	Gray (Piccaninny)	Greens Beach
Harford	Leventhorpe	Lisdillon	Lodi
Lyme Regis	Mayfield	Memana	Monarch
Musselroe	Naturaliste	Orford	Port Sorell
Rocky Cape	Scamander (Beaumaris)	Scamander (Falmouth)	Schouten
St Helens	Swansea	Tam O'Shanter	Tanner
The Gardens	Tomahawk	Waterhouse	Weymouth
Wingaroo			

NEW HOLLAND MOUSE

SEALS (9 species)

New Zealand fur seal - *Arctocephalus forsteri* (Otariidae)

Sub-Antarctic fur seal - *Arctocephalus tropicalis* (Otariidae)

Antarctic fur seal - *Arctocephalus gazella* (Otariidae)

Sub-Antarctic fur seal 'hybrids' - *Arctocephalus 'complex'* (Otariidae)

Southern elephant seal - *Mirounga leonina* (Phocidae)

Leopard seal - *Hydrurga leptonyx* (Phocidae)

Hookers sea-lion - *Neophoca hookeri* (Otariidae)

Australian fur seal - *Arctocephalus pusillus* (Otariidae)

Australian sea-lion - *Neophoca cinerea* (Otariidae)

[Photo of NZ fur seal from PWS Marine Unit]

Status

New Zealand fur seal

Tasmania's *Threatened Species Protection Act 1995* - Rare
Commonwealth *Endangered Species Protection Act 1992* - not listed

All other seal species

Tasmania's *Threatened Species Protection Act 1995* - not listed but considered of high conservation significance
Commonwealth *Endangered Species Protection Act 1992* - not listed

Description

The New Zealand fur seal is a member of the eared seal family (Otariidae), identified by a dog-like head with long whiskers and obvious external ears. They have large fore and hind flippers which can bend forward, enabling them to climb across boulders and rock shelves when on land. The New Zealand fur seal has grey to dark-brown fur and the adult males (or bulls) develop massive necks and a thick mane. Adult males grow to about 200 cm long and can weigh up to 200 kg. Females are smaller, reaching 150 cm in length and 90 kg in weight.

The adult male sub-Antarctic fur seal is brown to dark grey with a yellow-cream chest, throat and face. The female fur colour is variable. The pups are black in colour, including the muzzle. Males are usually 180 to 200 cm long and can weigh about 165 kg. The females are smaller measuring 145 cm and weighing up to 55 kg. Adult male Antarctic fur seals are uniform grey to dark brown while the female has a variable fur colour. The pups have grizzled fur with a broad, flat head and a blunt snout. Adult males are significantly larger than females and range from 165 to 200 cm in length and weigh 90 to 210 kg, compared to females measuring 115 to 140 cm and weighing 25 to 55 kg. The sub-Antarctic and Antarctic fur seal interbreed to produce offspring in the 'hybrid' complex.

Male adult southern elephant seals belong to the *Phocidae* family, which are earless seals. They are easily recognisable by their large trunk-like nose and huge body reaching 400 to 500 cm in length and weighing up to a massive 3600 kg (3.6 tonnes). Females are noticeably smaller weighing only 500 kg. Fur colour is dark to chocolate brown.

Leopard seals are also phocids (i.e. earless) and are characterised by their long streamlined body, narrow neck and large reptilian looking head. Their body colour is dark grey above and lighter below with large irregular spots underneath. Males can grow up to 250 to 320 cm long and weigh 200 to 445 kg. Females average 240 to 340 cm long and weigh over 250 kg. Leopard seals do not have ear flaps and their flippers are small and not used for locomotion.

The Hookers sea lion reaches 200 to 350 cm in length and weighs 300 to 450 kg, although females are smaller and lighter weighing about 160 kg. Adult males are dark blackish brown with dark manes. Females have a silver grey back with white underneath. Male pups are light chocolate brown with light stripes down the head and neck; female pups are light creamy brown to chocolate brown.

The more common Australian fur seal also lives in Tasmanian waters but has light brown fur and lacks the high pitched aggression call of the New Zealand fur seal. Australian fur seals reach head and body lengths of 200 cm with adult males weighing up to 280 kg and females 80 kg. Adult males develop a mane of coarse light hair on the neck and shoulders. Adult females are a ginger-brown to silver colour, and newborn pups are black. External ears are obvious.

Adult male Australian sea-lions are black to brown in colour with manes around the shoulder. The head is a cream colour. Females are silver grey in colour which slowly fades to brown approaching a moult. Pups are chocolate brown with a pale crown. At birth the Australian sea-lion weighs 6 to 8 kg and measures up to 68 cm in length. Pups are weaned at around 15 to 18 months of age with males weighing up to 300 kg. Females become sexually mature at four to six years of age, and males at eight to nine years old.

Distribution, Habitat and Biology

The New Zealand fur seal occurs in Western Australia, South Australia, Tasmania and New Zealand waters where it is relatively common. In Tasmania the species breeds off the south coast on Maatsuyker Island and two nearby islands, Walker and Little Witch. Breeding colonies are located in small, boulder coves and around caves and crevices. Approximately 100 pups are born each year. Females fertilised in summer can suspend development of the embryo so that pups are born soon after the pregnant females arrive in the breeding area from early December until January.

In Tasmania, New Zealand fur seals haul-out (come ashore to rest) at numerous islands and shores around the coast but mainly in the southwest region. Breeding and haul-out areas are occupied all year round although the number of seals present at breeding sites is highest from December to January and at haul-outs during autumn and winter. The New Zealand fur seal also comes ashore on Macquarie Island in summer, but does not breed there.

New Zealand fur seals feed mainly on squid, octopus and barracouta, but other fish and birds such as penguins and shearwaters are also eaten. They are occasionally seen around marine farms where they will readily feed on escaped fish. Occasionally individuals will come ashore around the Tasmanian coastline. They may be resting, moulting or seeking new feeding sites. They may stay in the area for days to weeks until they have grown a new coat or are rested. Important haul-out (non-breeding) sites are listed in Section I.

Small breeding colonies of Antarctic and sub-Antarctic fur seals occur on Macquarie Island but total less than 50 animals. The once large and expansive indigenous population of Antarctic fur seals was exterminated from Macquarie Island by the early 19th century by sealers. It has only slowly begun to recover through recolonisation from natural immigration from other colonies further west around Marion Island and South Georgia. They favour the rocky coasts and rock platforms around the island, especially to the north of the isthmus. Both species eat mainly krill (small crustaceans), fish, squid and occasionally penguin. Both species also occur on Heard Island in the Antarctic, however, only the Antarctic fur seal breeds there.

Southern elephant seals once bred on King Island but were exterminated by the early 19th century. Fossil evidence shows they also occurred around the Tasmanian coastline but now turn up only very occasionally with even rarer records of breeding. A breeding colony may be re-establishing on Maatsuyker Island. A population of about 85 000 southern elephant seals live on Macquarie Island, including about 19 000 females. Animals come ashore in August to commence breeding from September to October. This time also coincides with the females pupping from the previous mating season. Non-breeding animals usually stay at sea during winter. Southern elephant seals also breed on Heard Island in the Antarctic.

Hookers sea lions occur most frequently in the New Zealand sub-Antarctic waters but visit Macquarie Island on a regular basis. Their diet includes squid, prawns, crayfish, crabs, small fish and also young seal pups. The leopard seal is only a visitor to Macquarie Island with its main stronghold being nearer the Antarctic pack ice. It is an active predator, feeding on krill, fish, squid, and also penguins and smaller species of seal.

Australian fur seals are distributed along the coasts and seas of New South Wales and Victoria, and are the most commonly seen seal species in near-shore Tasmanian waters. When on land they prefer rocky islands and exposed reefs but forage widely in coastal seas extending over the continental shelf. They eat mainly squid and schooling fish such as redbait and jack mackerel. They form dense territorial colonies during the breeding season, dominated by males defending harems of up to 30 females. Females produce one pup every one to two years, usually born during November to December. Key breeding sites are in Bass Strait on Reid Rocks, Tenth Island ('Barrenjoey'), Judgement Rocks, Moriarty Rocks and West Moncoeur.

The breeding range of the Australian sea-lion extends from Houtman Abrolhos in Western Australia to The Pages (east of Kangaroo Island) in South Australia, and comprises about 66 sites. The species prefers to haul-out and breed on sheltered sides of islands and avoid exposed rocky headlands. The species feeds on a wide variety of prey including squid, fish, sharks, rock lobster and sea birds. Only infrequently is this species recorded on haul-out sites around the Tasmanian coastline.

Key Sites

Breeding sites – New Zealand fur seal

- Maatsuyker Island, Little Witch and Walker Island

Southern elephant seal

- Macquarie Island and possibly Maatsuyker Island (as weaners and cows observed)

Antarctic fur seals, sub-Antarctic fur seals, sub-Antarctic fur seal 'complex'

- Macquarie Island

Australian fur seal

- Bass Strait islands, especially Reid Rocks (south of King Island), Tenth Island (near Low Head), Moriarty Rocks (southeast of Clarke Island), Judgement Rocks (near Deal Island) and West Moncoeur (south of Wilsons Promontory)

Haul-out (non-breeding) sites - all species at some time

- Bull Rock near Stanley (Australian fur seal and New Zealand fur seal)
- Bass Pyramid, due west of Killiecrankie, Flinders Island (Australian fur seal)
- Iles des Phoques, north of Maria Island
- Hippolyte Rock off Tasman Peninsula
- Cape Pillar, end of Tasman Peninsula
- Cape Raoul, end of Tasman Peninsula
- Cape Queen Elizabeth and The Friars off Bruny Island
- Pedra Branca Island and the Mewstone
- Sugarloaf Rocks (East Pyramid) near Muttonbird Island, south of Port Davey
- Maatsuyker Island, Needles, Walker Island, Little Witch
- Albatross Island (northwest of Hunter Island)
- Black Pyramid (southwest of Albatross Island)
- Point Hibbs (south of Strahan)
- Wright Rocks (southeast of Deal Island)
- Macquarie Island as a visiting site for several species

Key Threats

- Deliberate persecution and direct killing, especially shooting by commercial and recreational fishers.
- Entanglement in trawl and gill nets, bait box straps and other fisheries related material.
- Drowning in trawl nets, gill nets, bait-box straps and other marine debris.
- Marine pollution, including oil spills and chemical contaminants causing death or leading to skin and other diseases.
- Death from ingestion of marine debris, especially plastic.
- Disturbance to breeding colonies, especially by fishers, tourists, aircraft and vessels and through research.
- Depletion of food stocks due to unsustainable harvest by commercial fisheries.

Management Recommendations and Other Ways to Help

- Don't discard rubbish at sea, particularly items that may entangle seals (e.g. packing straps, net offcuts, rope and fishing line) or any plastic items (bags, wrappers, etc.) which may be ingested by seals. Return all waste for appropriate disposal on shore. Commercial and recreational fishers should use strapless bait boxes at all times and stow their rubbish.
- Protect marine farms from seal attack by using physical barriers such as nets or wire mesh. Deterrents such as acoustic scarers, seal crackers and shooting have been shown to be ineffective. Seek advice from the Marine Unit, Parks and Wildlife Service.
- If a possibly sick, injured or dead seal is found on a beach, contact the Parks and Wildlife Service immediately. Do not approach the seal as they can inflict serious bites and are agile on land. Seals will often come ashore to rest and are perfectly healthy, happy and best left alone.

Seal Watching

Follow these simple guidelines for minimal impact (and to avoid disturbance and potential stampede of seals) when seal watching:

- Approach quietly. Seals are sensitive and easily startled by loud noises. Stampedes causing death of new-born pups can easily be caused.
- Don't attempt to view seals by flying aircraft low, this is illegal and breaches aircraft safety regulations.
- Lower sails and reduce speed to under 10 knots when closer than 200 m to haul-out areas.
- Never approach any breeding colony closer than 100 m, or 200 m between mid-October and mid-January.
- Anchor more than 50 m away from a haul-out, 100 m between mid-October and mid-January, anchor downwind and avoid any loud noises.
- Don't swim with seals. Sharks are usually present at haul-outs and breeding colonies. Seek advice on using perspex dive tubes or glass bottom boats for safe viewing.
- Never land on the haul-out area or platform at any time. This can cause massive stampedes and death of pups.

More Information

Brothers, N. P. and Pemberton, D. (1990). Status of Australian and New Zealand fur seals at Maatsuyker Island, South-western Tasmania. Australian Wildlife Research 17: 563-569.

Marmion, P. (1998). Seal Ecotourism Guidelines. Report to Parks and Wildlife Service, Tasmania.

Parks and Wildlife Service (1996). Seals of Tasmania. Wildlife Notesheet, Macquarie Street, Hobart, Tasmania.

Parks and Wildlife Service (1998). See them in the wild. Observing seals in Tasmania. Wildlife Brochure, Macquarie Street, Hobart, Tasmania

Reijnders, P., Brasseur, S., van der Wolf, P., Boyd, I., Harwood, J., Lavigne, D. and Lowry, L. (1993). Seals, fur seals, sea lions and walrus. Status, survey and conservation action plan. IUCN Seal Specialist Group. IUCN, Gland, Switzerland.

Selkirk, P. M.; Seppelt, R. D. and Selkirk, D. R. (1990). Subantarctic Macquarie Island: environment and biology. Cambridge University Press, Oakleigh, Melbourne.

Shaughnessy, P. D. (1999). The action plan for Australian seals. Environment Australia, Canberra.

Watts, D. (1993). Tasmanian Mammals. Revised edition. Peregrine Press, Kettering, Tasmania.

1: 25 000 TASMAP sheets with known breeding sites and important haul-out sites

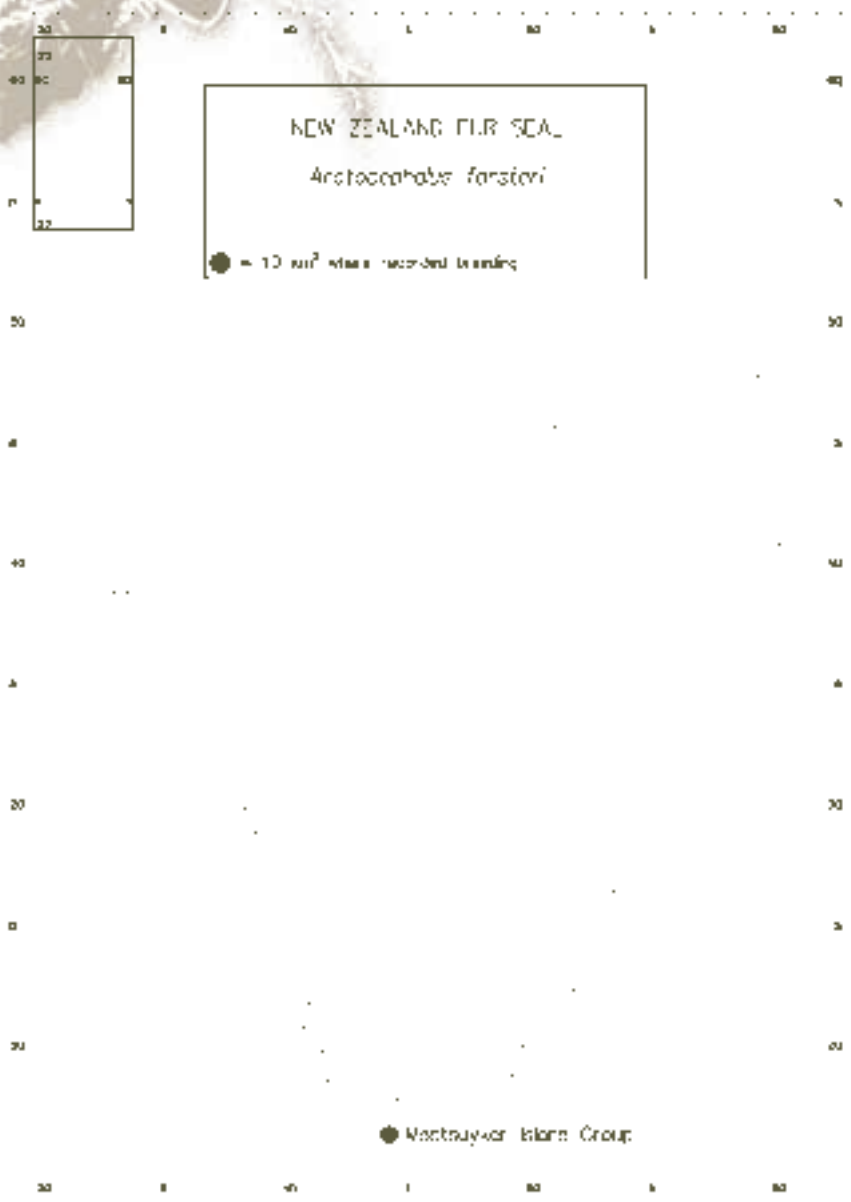
Macquarie Island is included in Section I as a single topographical mapsheet. South Cape is a 1: 100 000 mapsheet. West Moncoeur is included on the Sister mapsheet.

Breeding sites

De Witt	Low Head	Macquarie island	Moriarty
Sister	Stokes		

Haul-out sites

Cloudy	Cuvier	De Witt	Great Bay
Grindstone	Hibbs	Hilliard	Hippolyte
Keraudren	Low Head	Macquarie Island	Raoul
Sister	South Cape	Stanley	Stokes
Tanner	Tasman		


NEW ZEALAND FUR SEAL
Arctocephalus forsteri
Macquarie Island Group

WHALES (5 species)

Blue whale - *Balaenoptera musculus* (Balaenopteridae)
Southern right whale - *Eubalaena australis* (Balaenidae)
Humpback whale - *Megaptera novaengliae* (Balaenopteridae)
Fin whale - *Balaenoptera physalus* (Balaenopteridae)
Sei whale - *Balaenoptera borealis* (Balaenopteridae)

[Illustrations from Fauna of Tasmania Poster Series]

Status

Blue Whale

Tasmania's *Threatened Species Protection Act 1995* - Endangered
Commonwealth *Endangered Species Protection Act 1992* - Endangered

Southern Right Whale

Tasmania's *Threatened Species Protection Act 1995* - Endangered
Commonwealth *Endangered Species Protection Act 1992* - Endangered

Humpback Whale

Tasmania's *Threatened Species Protection Act 1995* - Endangered
Commonwealth *Endangered Species Protection Act 1992* - Endangered

Fin Whale

Tasmania's *Threatened Species Protection Act 1995* - Vulnerable
Commonwealth *Endangered Species Protection Act 1992* - Vulnerable

Sei Whale

Tasmania's *Threatened Species Protection Act 1995* - not listed, but considered of high conservation significance
The National Action Plan for Australian Cetaceans (1996) recommends the status as Vulnerable.

Description

The blue whale is the largest living animal on earth, reaching up to 30 m in length and weighing over 160 tonnes. The body shape is mainly narrow, slightly arched and streamlined. Body colour is a light bluish grey mottled with greyish white or lighter underneath. A small dorsal fin is situated at the end of the lower back.

The southern right whale measures up to 17 m in length and can weigh close to 80 tonnes. Females are larger than males and longevity is estimated to be around 50 years. The species is best identified by its disproportionately large head and strongly arching upper jaw. Individuals are usually covered around the head and near the two blowholes with callosities (a series of circular white calcified growths). The species has no dorsal fin.

Humpback whales are characterised by their large flippers which can reach nearly one third of their total body length. The flippers are often totally or partly white in colour with scalloping, knobs and bumps on the leading edge. General body shape is well rounded then tapering to a slim head. In profile the head is very slim and almost 'alligator-like' in appearance, and marked by a scattering of fleshy knobs or protuberances which can extend down to the lower jaw. There are about 14 to 35 broad ventral grooves extending on the underside almost to the navel. Body colour is black or grey with white on the flippers, throat and belly. Animals can reach up to 16 m in length.

Fin whales are the second largest whale species and can grow up to 26 m in length. The head is narrow and 'V' shaped with a prominent median ridge. The back is distinctly ridged from the dorsal fin to the flukes, prompting the common name 'razor back'. There are 50 to 100 slim ventral grooves extending to the navel. Body colour is dark grey to brownish black but with white underneath and behind the head (chevron), flukes and flippers and along the midline of the back.

Sei whales grow up to 17 to 20 m in length. The tip of the snout is slightly down turned with a single rostral ridge leading from the blowhole. Body shape is slim and streamlined and colour is dark grey on the back, often with ovoid greyish white scars caused by lampreys or sucking fish. A dorsal fin is prominent and there are 30 to 60 ventral grooves situated just before the navel.

Distribution, Habitat and Biology

All whale species mentioned have huge oceanic ranges, being highly mobile and migrating seasonally between feeding and breeding grounds. Extensive swarms of krill and invertebrates form in polar waters over the summer attracting most whale species to these oceanic extremities to feed. Blue whales occur in all oceans, primarily along the edge of continental shelves and ice fronts. In the southern hemisphere, blue whales generally stay south of 40 degrees S during summer before moving northward pasts Tasmania and the Australian coastline as winter approaches. Southern right whales are distributed circumpolarly in southern oceans in both cold and warm temperate regions. They occur seasonally off the coast of southern and western Australia and Tasmania during the autumn and winter and are often seen in family groups or pairs with small calves. They are pelagic in summer, feeding in the open Southern Ocean. Humpback whales are widely distributed in all oceans and in the southern region five to six isolated groups spend the summer in Antarctic waters before migrating past the western Australian coastline to winter in warmer oceans. Fin whales have a world-wide distribution though they tend to be less common in tropical waters. In the southern hemisphere, fin whales migrate from summering grounds in the Antarctic past New Zealand and Australia to overwinter in the southwest Pacific Ocean. Sei whales are distributed world-wide in temperate and oceanic waters. They annually migrate from lower latitude wintering grounds to higher latitude feeding grounds, being most common around Korea, Norway and Japan. In the southern hemisphere sei whales have a similar though smaller range to fin whales moving from the Antarctic zone to western and southeastern Australia as the winter approaches.

The most commonly sighted of these whale species in Tasmania are the southern right whale and the humpback whale. These five whale species are termed 'baleen whales', meaning they have no teeth but feed by sieving food through a series of horny plates. These plates or baleen are covered in fine hairs and are arranged like teeth in a comb. Food is collected by the whale either taking huge gulps of water, or swimming with its mouth open or sucking water into the mouth, by depressing the tongue. The water is then forced back out of the mouth sieving the food items such as krill, copepods, small squids and other small crustacea or fish. Baleen whales are the largest of all the whale species and they tend to move the largest distances in the smallest groups.

Whales are highly evolved mammals specially adapted to living in oceanic waters and diving to great depths. Movement and navigation is by a sophisticated form of echo-location, whereby signals are bounced off nearby objects or obstructions similar to a ship's echo sounder. Air is breathed via a blowhole(s) situated on the top of the head (either centrally or slightly to the side). The blowhole is tightly sealed while the animal is diving and it can expel large streams of vapour and air when resurfacing. Whales can form a variety of social groupings. Some species form large social pods, either as breeding herds, non-breeding herds or sub-adults. Some form smaller pods of three to ten individuals (fin whale, humpback whale), while some occur singly or in pairs (e.g. blue whale). Social groupings are strongly bonded. Courtship and mating are ritualistic events with displays of lunging, chasing, jaw clapping, head butting, spiralling and strong vocalisation or 'singing'. Females have a gestation period of about 12 months and normally give birth to one calf every two to three years. Whales give birth in the water with calves suckling milk from a pair of teats concealed in slits or grooves on the female's underside. At birth, calves of these species measure between 4 to 6 m, except for blue whale calves which measure up to 7 m. At birthing time females usually seek refuge nearer to coasts in warmer, shallow and more sheltered waters. Southern right whales regularly give birth in Tasmanian waters. Sexual maturity in most species is reached around 6 to 12 years of age.

Many whale species are known to strand, i.e. come up on the beach or coastline and become unable to free themselves. The exact cause or reason for strandings is still debated. However, the event was first recorded by Aristotle and it is a phenomenon that continues today on coastlines around the world. The two most probable theories for whale strandings are that an individual or a pod of whales has come ashore following a sick animal, or that the physical configuration of the coastline has confused the locational signalling of the whale(s) bringing them into shallow water. Areas which have sand spits, sand bars and large tidal ranges or long fingers of land jutting into the sea are regularly 'hot spots' for whale strandings around the Tasmanian coast. Quick response to live strandings often enables the animals to be successfully returned to the water.

Key Sites

Sightings

- Most frequently down the east coast of Tasmania
- D'Entrecasteaux Channel, including around Bruny Island
- Derwent, including Frederick Henry Bay
- Maria Island and Freycinet coastline, including Great Oyster Bay

Strandings (typically on wide, gently sloping beaches)

- Marion Bay and Dunalley
- Circular Head area
- Orford, including Rheban and Sandspit
- Macquarie Harbour, Ocean Beach, Strahan area
- Marrawah Beach
- Bicheno area

Key Threats

- Direct killing (illegal in Australian waters).
- Entanglement and incidental take, e.g. in trawl nets, gill nets, or other water debris.
- Mass strandings.
- Collision with oceanic vessels.
- Marine pollution leading to disease or strandings, e.g. oil spills.
- Competition and depletion of food stocks by fisheries, especially unsustainable harvest of krill.
- Disturbance and harassment, e.g. acoustic disturbance, ecotourism, artificial feeding (e.g. dolphins).

Management Recommendations and Other Ways to Help

Coastal Sightings and Whale Watching at Sea

- Quickly report any sightings of whales (including dolphins), alive or dead, to the nearest Parks and Wildlife District Ranger.
- Do not interfere with whales swimming inshore, females may be calving or feeding young animals. Boats and water craft should keep well back from live animals.
- Follow closely the protocols for 'whale watching' and only travel with licensed operators.

Ocean Care

- Don't discard rubbish at sea, particularly items that may be ingested by whales (packing straps, net fragments, rope, etc.). Commercial and recreational fishers should use strapless bait boxes at all times and stow rubbish properly.
- Report any chemical or toxic waste pollution, including fuels, etc. to the marine authorities immediately.

Whale Strandings (applies to any whale species including dolphins)

- Immediately contact the nearest Parks and Wildlife District Ranger in your area or the Hobart Office. Information on districts is available in all telephone directories. Failing this call the local Police Station. Give clear directions on locations and number of animals, whether they are alive or dead, and the time of observation. Do not wait until animals have stranded on the beach, call for help as soon as they are sighted inshore.
- If whales are swimming close to shore and potentially may strand, act quickly. Gather as many people and watercraft as possible, and make loud noises in the water near the animals. Actions like slapping the water with hands or utensils, underwater noises like motor generators, horns, shouting and waving may deter animals from entering shallower water. Boats can be effective in herding the pod into open water. Act quickly and decisively.
- If stranded on the beach, make sure the whale's blowhole (front of the head) is out of the water. If possible prop or keep the animal upright by digging a trench so that it can lift its head, supporting the body with people or sandbags, etc. If the blowhole remains underwater the animal will drown.
- Keep individuals cool by regular dousing with water, using buckets or gentle hosing, and preferably cover with cotton sheeting and keep wet. Awnings or other forms of shade may also be useful. Target key areas like fins and flukes for cooling. Do not let water enter the blowhole.

- Stay calm and control people movement around the whales. Keep dogs, machinery and any people not involved with rescue off the beach. Whales should be kept calm and quiet.
- Be conscious of your own personal safety. Take care near the tail of large species as this can be flicked, causing injury. Wetsuits are essential if you are to be effective in the water.
- Never attempt to kill or euthanase a whale (by any means). This is a wildlife offence and breaches animal welfare guidelines. Palliative care by keeping animals cool and comfortable should be given until either the animal dies or circumstances change enabling rescue, e.g. favourable weather, tides, equipment or people arrive.
- Refloating and moving individuals together as a pod will help maintain the social structure of the group and avoid the strong desire for animals to restrand.
- Photographs or videos of the stranding may help with understanding the event.

Equipment Needed

Heavy machinery such as boats, backhoes, front end loaders, trucks and trailers are essential to move large whale species on the beach and in the water. Other beach equipment includes harnesses and straps should towing be necessary, whale rescue nets or tough plastic sheeting or tarpaulins, spades, buckets, and cotton sheeting for covering whales. Wetsuits are essential for helpers in the water. A base camp situated well back off the beach should be established where warm clothing, food and other materials can be made available to volunteers.

Other Ways to Help

- Register as a WildCare Volunteer with the Parks and Wildlife Service for whale rescue operations and keep a wet suit handy.
- If you live on a coast where whales are regularly seen, set up your own whale watch group to regularly monitor the times and movement of whales in your area. Long-term information is needed for species entering Tasmanian waters.
- Report any offences against whales (all species including dolphins) to the Parks and Wildlife Service, including the removal of material (teeth, jaws, etc.) from dead animals or any harassment of live animals.

More Information

Bannister, J. L., Kemper, C. M. and Warneke, R. M. (1996). The action plan for Australian cetaceans. Wildlife Australia Endangered Species Program Project No. 380, Australian Nature Conservation Agency, Canberra.

Leatherwood, S. and Reeves, R. R. (1983). The Sierra club handbook of whales and dolphins. Sierra Club Books. Tien Wah Press, Singapore.

Parks and Wildlife (1997). Whales and whale strandings. Wildlife Notesheet, Parks and Wildlife Service, Hobart, Tasmania.

1:25 000 TASMAP sheets with known localities

All are oceanic species. No information has been entered in Section I.

EMU (2 species)

Tasmanian emu - *Dromaius novaehollandiae diemenensis* (Dromaidae)

King Island emu - *Dromaius minor* (Dromaidae)

[Photo of Australian emu from PWS source library]

Status

Tasmanian emu

Tasmania's *Threatened Species Protection Act 1995* - Extinct
Commonwealth *Endangered Species Protection Act 1992* - Extinct

King Island emu

Tasmania's *Threatened Species Protection Act 1995* - Extinct
Commonwealth *Endangered Species Protection Act 1992* - Extinct

Description

Australian emus in general stand erect at around 150 to 190 cm and can weigh 30 to 45 kg. They are flightless, have very rudimentary wings and have long necks terminating in a small head with a short, sharp beak. The feathery plumage is shaggy about the body and coloured grey to brown. The legs are long, bearing three clawed toes and are well adapted to fast running, scraping the soil and defence. Little specific information is available on the Tasmanian and King Island emus, however, both species were probably very similar in general appearance to the Australian emu although they were both smaller in size and darker in colour. King Island emus stood about 1.4 m high and weighed around 23 kg. They were sometimes called the 'black emu' or 'dwarf emu' and were smaller than the mainland species and considered quite different from all other forms (hence the distinct species status).

Distribution, Habitat and Biology

The Tasmanian emu, an endemic sub-species of the mainland Australian emu *Dromaius novaehollandiae*, was last recorded in the wild sometime between 1845 and 1865. Captive-held specimens had died out by about 1873. The Tasmanian emu was described as never being abundant and mainly distributed along the east, especially the Midlands and along the northern coast of Tasmania. It preferred grassland and open woodland areas with abundant supplies of fresh water. It was hunted to extinction as a food source with adults and eggs being taken. Early accounts report that soldiers were assigned to hunt it and that the flesh was sold to the Government to feed officers and prisoners. No doubt birds and eggs were also consumed by early free settlers. Some of the skins were turned into mats.

The King Island emu was endemic to King Island, where it was recorded as being present in 'great numbers' along the shores and near lagoons at the time of Baudin's expedition in 1802. Extinction of the King Island emu was caused by it being hunted as a food source primarily by sealers with dogs trained for the purpose. No specimens were recorded after about 1805.

Few reports exist of the behaviour of the Tasmanian emu and King Island emus, however, it is likely they were similar to the mainland Australian species which remains widespread and common today. Emus can be solitary or in pairs or form larger groups when congregating along a barrier. Diet is principally seeds, fruits, berries, insects, and new shoots and buds. Between five to fifteen green shelled eggs are laid once a year in winter and incubated by the male. Nest are made of grass, leaves, twigs and bark and constructed on a platform.

Mainland Australian emus were introduced to Tasmania and for many years were maintained in various captive populations, including on Maria Island.

Key Sites

King Island emu

- Endemic to King Island

Tasmanian emu

- Mona Vale and Avoca (especially Kearney's Bogs)
- Plains of the northwest coast
- Near Emu Bay (named as such)
- Around Circular Head
- New Ground near Malborough, New Norfolk
- Coal River
- Kangaroo Point

Key Threats

- Both species were hunted to extinction as a food source during early colonial settlement (meat and eggs).

Other Ways to Help

- Become familiar with the story of extinction of the Tasmanian and King Island emus. Parallels exist today with many of Tasmania's other unique wildlife being actively pursued, e.g. Tasmanian native hens, wood duck and other native duck species, Cape Barren geese, etc. Actively encourage conservation of wildlife in your area by protecting habitat and eliminating feral pests. Consider establishing wildlife covenants on your property or joining the Land for Wildlife program to combine nature conservation with property management.
- Control pets at night that can destroy any of Tasmania's native creatures, especially ground dwelling birds. Actively trap and humanely destroy any feral cats in your area.
- Be responsible and protect your stock and domestic poultry from predator attack. Net or pen poultry at night. Build a predator-proof chook pen to prevent access (see quoll profile for details). Simple floppy-top fences will prevent possums or other species from damaging livestock or crops. Contact the Parks and Wildlife Service for construction details for floppy-top fencing.
- Report any offences against Tasmania's wildlife to the Parks and Wildlife Service or local District Rangers. Most of our native creatures are wholly protected by law and should not be trapped, kept or harmed in any way. Unless for rehabilitation purposes under permit, it is illegal to keep native birds in aviaries or to collect eggs or adults, including taking them out of Tasmania.
- Learn more about identifying, protecting and enjoying Tasmania's native bird fauna. Contact Birds Tasmania.

More Information

Birds Tasmania, GPO Box 68, Hobart, Tasmania, 7000.

Brasil, L. (1914). The emu of King Island. EMU 14: 88-97.

Dove, H. S. (1924). Notes on the Tasmanian emu. EMU 23: 221-222.

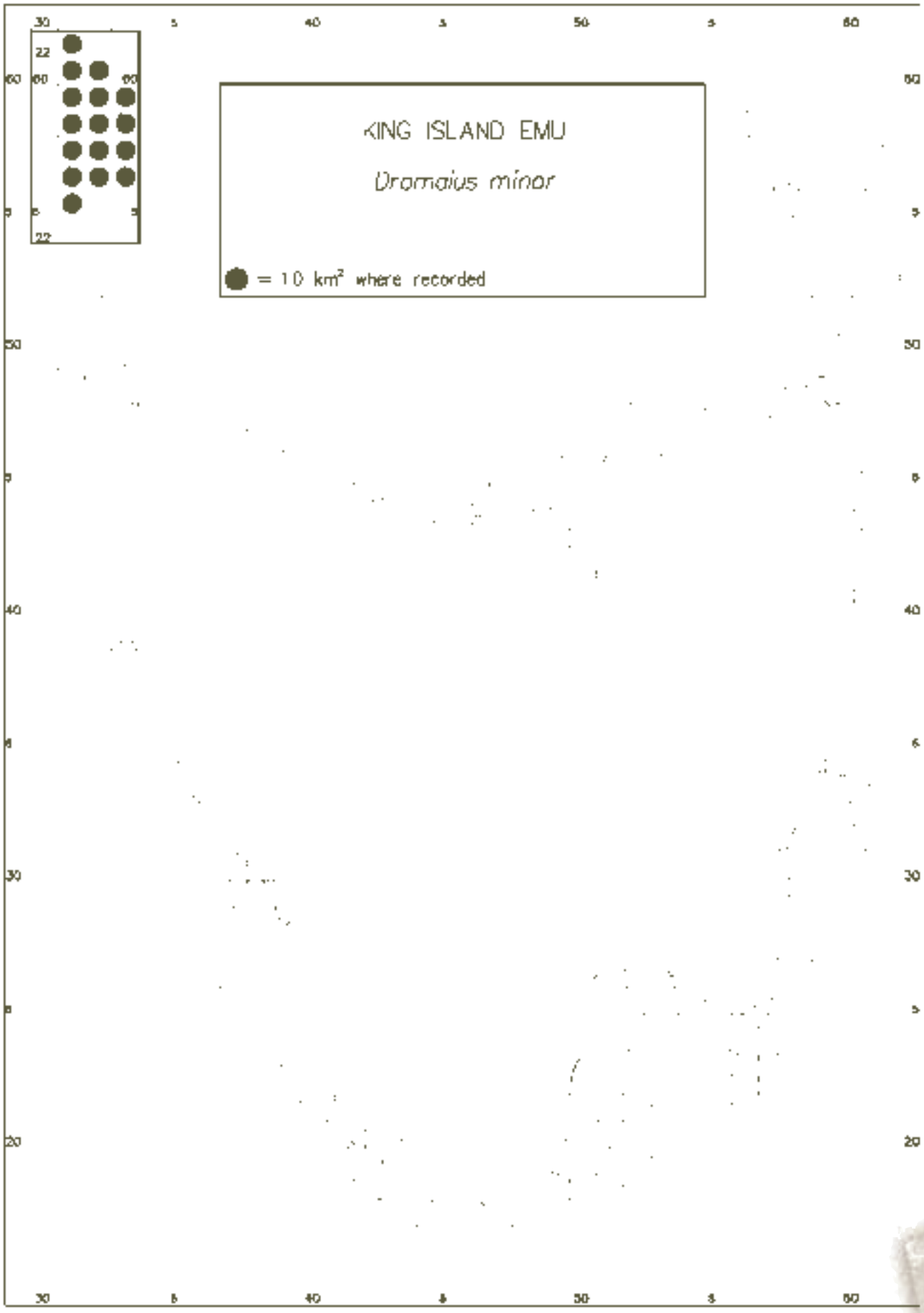
Dove, H. S. (1926). How Tasmania lost the emu. EMU 25: 213.

Green, R. H. and McGarvie, A. M. (1971). The Birds of King Island with reference to other western Bass Strait islands with annotated lists of the vertebrate fauna. Records Queen Victoria Museum 40: 1-35.

Legge, W. V. (1907). The emus of Tasmania and King Island. EMU 6: 116-119.

1:25 000 TASMAP sheets with known locations

Not sufficient detailed information to be included in Section I. No distribution map available for the Tasmanian emu.


KING ISLAND EMU
Dromaius minor
= 10 km² where recorded

GREAT CRESTED GREBE

Podiceps cristatus (Podicipedidae)

[Photo by Trevor Waite]

Status

Tasmania's *Threatened Species Protection Act 1995* - Rare
Commonwealth *Endangered Species Protection Act 1992* - not listed

Description

A large, graceful, long-necked waterbird about 50 cm tall. Legs are set back on the body with distinctive broad paddle-shaped toes. The great crested grebe is grey to brown on the back with a white silky breast and long white neck. The straight bill is long and pointed. In adults the dark, double horned crest is formed by prominent ear-tufts and can be expanded into a beautiful chestnut ruff for display. Juveniles lack the crest.

Distribution, Habitat and Biology

Great crested grebes live on rivers, lakes and estuaries throughout eastern Australia, including Tasmania and southwest Western Australia. Different subspecies also occur throughout Europe, Asia, Africa and New Zealand. In Tasmania they are known to breed only at one site, Lake Dulverton at Oatlands. However, recent observations by T. Reid of adults with young suggest alternative sites may be being used. Historically, Lake Dulverton has experienced regular periods of dryness due to low rainfall and it has currently been dry for several years. For most of the year great crested grebe are nomadic and found on large areas of open water such as the highland lakes, Derwent estuary, Tamar estuary, Orielton Lagoon and Rostrevor Lagoon. Nowhere are they common and they are usually seen either singularly or in groups of a few birds. Numbers fluctuate as they move in response to food supply and environmental conditions. Great crested grebe are rapid swimmers and will dive for food and to avoid danger. They usually fly at night.

Great crested grebes breed between November and March and pairs engage in complex courtship displays with head shaking and elaborate dancing. At a later stage of the ritual, pairs carry weeds in their beak for nest building. Nests are made of heaped floating vegetation anchored in reed beds or drooping branches. Male and female parent birds build the nest and share incubation and raising of the chicks. Three to seven eggs are laid. Chicks can swim soon after hatching but often ride on their parent's back. Grebes feed on aquatic plants and dive for small fish, shrimps, tadpoles and insects.

Key Sites

- Lake Dulverton is the only confirmed breeding site in Tasmania
- Orielton Lagoon
- Derwent River particularly between New Norfolk and Glenorchy
- Rostrevor Lagoon (potential breeding site)

Key Threats

- Prolonged periods of dryness and fluctuations in water levels in Lake Dulverton
- Disturbance to nesting and roosting birds, e.g. by people or vehicles
- Degradation of non-breeding wetland habitats, especially by draining, chemical pollution and weed invasion

Management Recommendations

- The re-filling of Lake Dulverton may encourage the great crested grebe to re-establish and breed at this site. It is debatable whether this should be allowed to occur naturally through increased rainfall or whether it is artificially restored. If it is to be artificially restored then the physical and natural parameters of this wetland complex should be reproduced.

If You Want to Construct a Wetland

- If you are considering constructing a wetland seek advice on key features. Variety is important. The edges of the wetland should be irregular in shape to provide varying aspect and slope to alter water depth. Ideally water levels should vary in depth from shallow zones to areas of deep open water. Areas of shallow water provide most food for grebes and other waterfowl, e.g. one metre depth allows light and warmth to stimulate abundant growth of water plants.

- Re-establish native vegetation, e.g. rushes, reeds and sedges in and around the wetland edge to provide nesting material and trap insects and other invertebrate food supplies. Also, provide refuge and protection for grebes and waterfowl generally. Use local native shrubs and trees where appropriate. Do not plant shrubs or trees too thickly as they may obstruct flight paths or species access to the water's edge.

Vegetation Clearing and Buffers

- Avoid clearing any native vegetation from the wetland, stream side zones or stream banks. Vegetation provides shelter, shade (maintains water temperature) and essential food for grebes and other aquatic fauna. It also filters surface runoff (reducing nutrients and sediments), limits light levels, and maintains slope and bank stability.
- Wetlands and stream zones should contain a mix of native understorey and overstorey plants, including reeds, grasses, shrubs and trees. Sticks and ground covers will be needed for nest material by grebes and other waterfowl. Diversity of vegetation along stream banks is important as trees, shrubs and ground cover all play different and important roles in stream bank stability. Establish vegetation as far down the bank as possible. This may require special work to stabilise the toe of the bank or reduce its steepness to enable vegetation to establish.
- The width of vegetation buffers depends on the situation. The greater the buffer width, the greater the protection; the more diverse the buffer vegetation, the better the protection. In any case, for small, seasonally dry water channels buffers should be no less than 10 m wide each side, grading up to at least 60 m or more wide each side for larger stream zones. Two methods for calculating minimum buffer width are: a distance equivalent to the average dominant tree height, or if there are no trees, then the amplitude distance between bends.
- Buffers are especially important at points where surface waters enter small river channels or landscape depressions, and where flow concentrates.
- An effective buffer zone should also provide for the continuing input of large woody debris and leaf litter into the stream.

Weed and Willow Removal

- Cut and paint weeds, leaving roots (and stumps of willows) intact to aid bank stability. This will also prevent suckers from sprouting.
- Removal of willows or dense weed mats must coincide with a revegetation program so that stream banks are not exposed to excessive erosion, light or loss of foliage. Remember that the great crested grebe seeks refuge and feeds in wetland vegetation and that most aquatic animals like cool, shady places.
- Prevent any large, heavy machinery or structures from entering the wetland or stream bed, e.g. tractors, excavators, bridge supports, etc. even if they are being used for restoration activities. This will not only directly kill localised species or their nests and alter habitat for other aquatic animals, but the sedimentation caused by the disturbance will accumulate on the stream bed and smother fragile habitats.
- Use only herbicides which are registered as suitable in watercourses (e.g. Roundup Biactive®). Contact the Department of Primary Industries for more information on types of herbicides and preferred alternatives.
- If introduced cumbungi (bullrush) is invading the site it should be destroyed as early as possible, e.g. young or early growth stages. Manual (hand) or mechanical removal must remove the entire plant, including the roots and rhizomes. If using Roundup Biactive® only apply during the flowering period (December to March). Seek advice first.

Snags or Woody Debris

Woody debris, including snags, are a natural and important part of the river system. Snags are essential for creating a range of flow conditions, enabling a diversity of plants and animals to establish. They provide shade and shelter and their gradual decay and trapping of leaf litter provides the food for many aquatic animals (e.g. frogs, crayfish, insects), which in turn become a food source for grebe.

- Do not remove woody debris or snags from the river system. If a snag is completely blocking water flow seek advice on how to move it to a 20 to 40 degree angle to the stream bank.
- Lop selected branches from snags near the water surface if they tend to trap debris and cause log jams.
- If the woody debris requires removal from the main stream channel, try relocating it to a position of low water velocity in the stream or place it on the outside of banks to improve stability.
- In streams which have been modified or degraded consider reintroducing woody debris into the stream system. Seek advice on the best way to undertake this.

Fertilisers, Chemicals, etc.

- Use only chemicals which are registered as suitable in watercourses as grebe and many other animals are extremely sensitive to chemicals, even in light doses (e.g. pyrethrin is lethal to crayfish and lobsters).
- Time any fertiliser or chemical application to avoid periods of intense runoff. Instead of broadcast applications, try direct placement in the soil or place under a blanket of stubble mulching, etc.
- Trial the use of alternative 'environmentally friendly' applications, which may also be safer for stock and human health.

Managing Stock Access

Stock naturally favour wetlands and riversides and if poorly managed will completely degrade crossings, watering points and foul the water. This results in bank erosion, loss of plant species, soil compaction, weed invasion, and a build up of bacteria and viruses in the water. If at all possible 'Keep Stock Out'.

- Fencing and smart planning will enable you to manage the riparian zone and your stock. Hanging fences, electric and electronic fences, drop fences and alternative watering points, including troughs, should be used depending on the situation.
- Timing, intensity and duration of stock in wetlands or sensitive riparian zones can also be regulated to maintain the area.

Culverts, Dams, Weirs, etc.

Many aquatic animals (especially platypus and lobster) avoid or are unable to go through culverts. Culverts channel the water flow over the smooth concrete surface and increase flow velocity. Poorly designed or poorly embedded culverts prevent upstream movement and natural mixing of aquatic species and also force larger species like lobster onto roadsides or into open situations.

- Wherever possible use bridges instead of culverts. Try alternative inverted 'U' shaped designs or irregular shapes. If round culverts are necessary they should be fully embedded in the stream bed and ideally should have an artificial substrate provided down the mid-line of the pipe (e.g. cemented rocky gravel).
- Do not construct dams, weirs, etc. anywhere in the catchment. Please seek advice. Barriers will significantly alter environmental flow regimes and may make the site totally unsuitable for many plant and animal species.
- Do not remove gravel or large quantities of rock from the wetland or stream bed. This contains aquatic fauna, provides cover and disperses water flow. The removal of shingle from the river can alter the stream hydrology and lead to erosion of the stream bed and channel.

Other Ways to Help

- Prevent dogs or livestock from disturbing grebes and trampling wetland vegetation which is needed for shelter and nesting.
- Report any sightings of the great crested grebe to the Threatened Species Unit as information on this species' distribution, breeding and ecology in Tasmania is very limited.
- If you find dead native birds beneath power lines or poles, please report this immediately to Aurora Energy. Special adaptors can be installed to prevent electrocution and collision. Grebes and other large waterfowl, e.g. swan fly at night and may become tangled in overhead lines.
- Form or join a Landcare group with a specific focus on wetland restoration for this species and other aquatic fauna. Money may be available through grant systems to assist. Linking properties to form large corridors of wetland and establishing Bushcare or Land for Wildlife networks can help reduce habitat fragmentation.
- Learn more about identifying, protecting and enjoying Tasmania's native bird fauna. Contact Birds Tasmania.

More Information

Birds Tasmania, GPO Box 68 Hobart, Tasmania, 7000.

Green, R. H. (1995). The Fauna of Tasmania: Birds. Potoroo Publishing, Launceston.

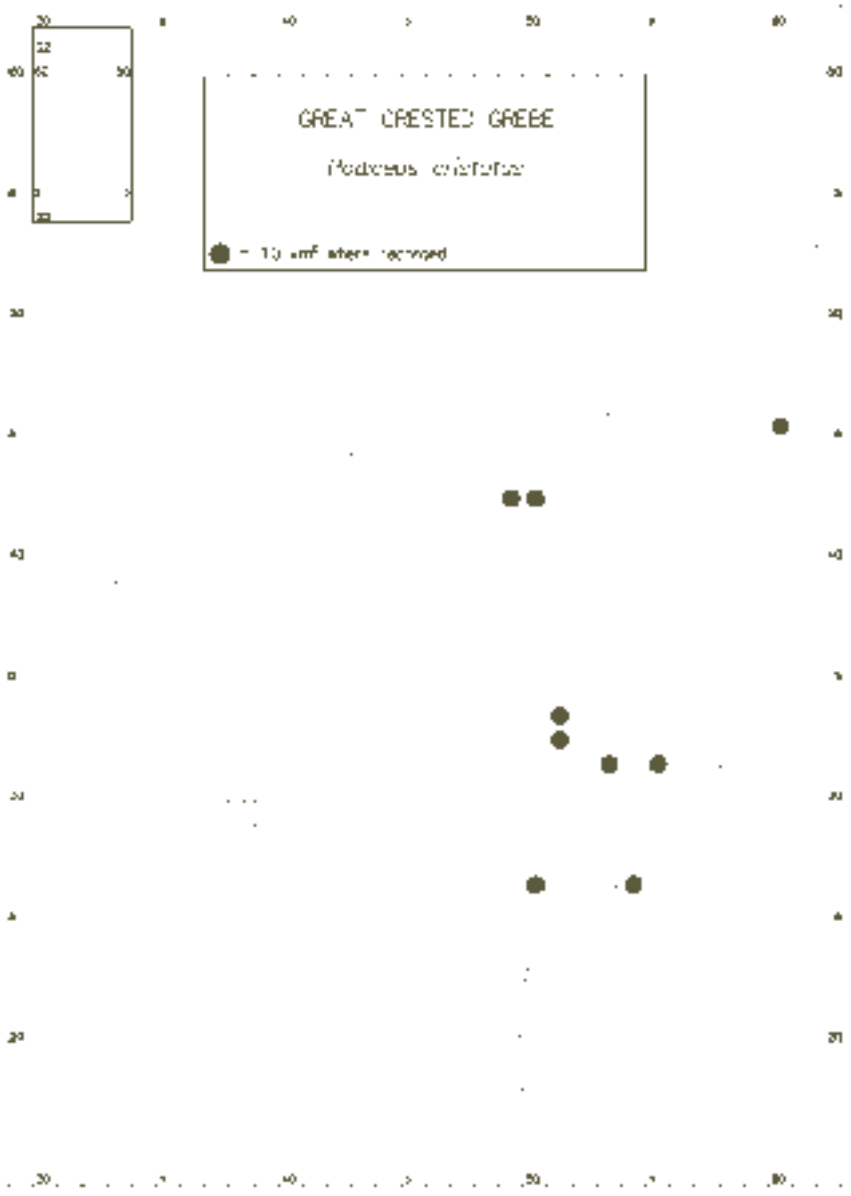
Marchant, S. and Higgins, P. J. (1990). Handbook of Australian, New Zealand and Antarctic Birds. Vol. 1 Part A Ratites to Petrels. Oxford University Press, Melbourne.

Thomas, D. (1979). Tasmanian Bird Atlas. Fauna of Tasmania Handbook No. 2. University of Tasmania, Hobart.

1:25 000 TASMAP sheets with known localities

Ansons Bay	Communication	Dilston	Exeter
Hobart	Interlaken	Lemont	McPartlan
New Norfolk	Oatlands	Richmond	Rufus
Scamander (Beaumaris)	Sellars	Sorell	Steppes
Stonor	Table	Triabunna	

GREAT CRESTED GREBE



MACQUARIE ISLAND BIRDS (21 species)

[Photos from PWS Marine Unit]

Threatened Species

Macquarie Island parakeet – *Cyanoramphus novaezelandiae erythrotis*

Tasmania's *Threatened Species Protection Act 1995* - Extinct
Commonwealth *Endangered Species Protection Act 1992* - Extinct

Macquarie Island rail – *Gallirallus philippensis macquariensis*

Tasmania's *Threatened Species Protection Act 1995*- Extinct
Commonwealth *Endangered Species Protection Act 1992* - Extinct

Grey-headed albatross – *Thalassarche chrysostoma*

Tasmania's *Threatened Species Protection Act 1995* - Vulnerable
Commonwealth *Endangered Species Protection Act 1992* - Vulnerable

Wandering albatross – *Diomedea exulans*

Tasmania's *Threatened Species Protection Act 1995* - Endangered
Commonwealth *Endangered Species Protection Act 1992* - Vulnerable

Black-browed albatross – *Thalassarche melanophrys*

Tasmania's *Threatened Species Protection Act 1995* - Vulnerable
Commonwealth *Endangered Species Protection Act 1992* - not listed

Light-mantled albatross – *Phoebetria palpebrata*

Tasmania's *Threatened Species Protection Act 1995* - Vulnerable
Commonwealth *Endangered Species Protection Act 1992* - not listed

Blue petrel – *Halobaena caerulea*

Tasmania's *Threatened Species Protection Act 1995* - Vulnerable
Commonwealth *Endangered Species Protection Act 1992* - Vulnerable

Wilsons storm petrel – *Oceanites oceanicus*

Tasmania's *Threatened Species Protection Act 1995* - Rare
Commonwealth *Endangered Species Protection Act 1992* - not listed

Fairy prion (southern subspecies) – *Pachyptila turtur subantarctica*

Tasmania's *Threatened Species Protection Act 1995* - Vulnerable
Commonwealth *Endangered Species Protection Act 1992* - Vulnerable

White-headed petrel – *Pterodroma lessonii*

Tasmania's *Threatened Species Protection Act 1995* - Vulnerable
Commonwealth *Endangered Species Protection Act 1992* - not listed

Antarctic tern – *Sterna vittata bethunei*

Tasmania's *Threatened Species Protection Act 1995* - Endangered
Commonwealth *Endangered Species Protection Act 1992* - Endangered

Macquarie Island shag – *Leucocarbo albiventer purpurascens*

Tasmania's *Threatened Species Protection Act 1995* - Vulnerable
Commonwealth *Endangered Species Protection Act 1992* - Vulnerable

Other Macquarie Island Bird Species

Tasmania's *Threatened Species Protection Act 1995* - not listed but considered of high conservation significance
Commonwealth *Endangered Species Protection Act 1992* - not listed

Royal penguin - *Eudyptes schlegeli*
King penguin - *Aptenodytes patagonicus*
Gentoo penguin - *Pygoscelis papua papua*
Rockhopper penguin - *Eudyptes chrysocome*
Southern giant petrel - *Macronectes giganteus* - nominated as threatened
Northern giant petrel - *Macronectes halli* - nominated as threatened
Great skua - *Stercorarius skua lonnbergi*
Sooty albatross - *Phoebetria fusca* - nominated as threatened
Sooty shearwater - *Puffinus griseus*

Description of Species

Many of the species discussed are pelagic seabirds which are best identified using a field guide such as Harrison (1983) or Simpson and Day (1996). Detailed descriptions of distribution, body characteristics, plumage, social behaviour and breeding cycles is provided in Marchant and Higgins (1990).

The Macquarie Island parakeet, a subspecies of the red-crowned parakeet *Cyanoramphus novaezelandiae*, was about 28 cm in length and coloured bright emerald green on the back, yellow to green underneath with a crimson red forehead and patch behind the eye. The Macquarie Island land rail, a subspecies of the banded rail *Gallirallus philippensis*, measured 21 cm in length. Adults were streaked or strongly banded across the chest and were chestnut, black and white in colour. The under-tail was striped reddish brown and black.

Distribution, Habitat, Biology

Macquarie Island lies 1500 km SSE of mainland Tasmania, midway between Hobart and the Antarctic continent. The region comprises the main island of Macquarie, Judge and Clerk islets (11 km north), Bishop and Clerk islets (37 km south) and several sea stacks and reefs close by. In area Macquarie Island covers over 12 000 ha and is protected under World Heritage Area status.

The landscape is dominated by a massive plateau scattered with lakes, tarns and shallow pools, dropping away to steep, rugged scarps. The slopes are vegetated by tussock grassland, herbfield and lush Macquarie Island cabbage *(Stilbocarpa polaris)*. The more windswept and exposed areas are covered by herbfields and moss cushions. Peat bogs up to six metres deep occur on the raised beach terraces and flatter inland areas. Macquarie Island is a unique breeding platform and refuge for many marine mammals and birds. It contains a range of endemic species like the royal penguin but also boasts significant assemblages like the giant petrels, albatrosses and small burrowing petrels.

The wildlife on Macquarie Island has had a long history of disturbance and decimation, as reviewed by Cumpston (1968). Today, the European rabbit *Oryctolagus cuniculus*, feral cat *Felis catus* and ship (black) rat *Rattus rattus* continue to have an enormous impact on the breeding avifauna. Rabbits overgraze sensitive vegetation and expose seabird burrows to predators (natural and introduced). Cats kill the chicks of many medium to small sized seabirds while rats infest the tussock grassland, often digging tunnels adjacent to seabird burrows.

The Macquarie Island parakeet was endemic to Macquarie Island. It was a subspecies of the red-crowned parakeet *Cyanoramphus novaezelandiae* which is found throughout New Zealand with other subspecies occurring on Norfolk Island, New Caledonia and Lord Howe Island (now extinct). The Macquarie Island parakeet was reported as being plentiful and abundant over the island up until 1880. It was still present in 1891 but by 1894 historical notes suggest that the parakeet had become very rare. A search conducted in 1900 failed to find any specimens. The extinction of the Macquarie Island parakeet during this ten year period was due to increased predation of adults, chicks and eggs by feral cats and introduced weka (aggressive maori hen). These introduced feral species had dramatically increased in number over this ten year period in response to the significant increase in feral rabbit numbers. Macquarie Island parakeets were reported to have nested underground or in vegetation covering rocks on the beach or along the shore, which is typical of the species. They probably fed on seeds, berries, fruits and buds but were also observed picking among seaweed for crustacea and other small invertebrates.

The Macquarie Island land rail is now also extinct on Macquarie Island although the species generally remains distributed throughout the southwestern Pacific region including New Zealand. This endemic sub-species had become extinct by 1894 due to the same combination of events as for the Macquarie Island parakeet. It was commonly called the tussock fowl as it lived among the tussocks and did not (or seldom) fly. This shy and cryptic bird was probably highly territorial with pairs foraging in grassy areas for snails, worms, insects and seeds.

Of the six species of burrowing seabird breeding on Macquarie Island all have seriously declined, some to near extinction. Populations of the Antarctic prion, sooty shearwater and white-headed petrel are significantly diminished while the fairy prion, blue petrel and diving petrel have reached critically low numbers. Fairy prions number less than 40 pairs and are limited to breeding on rock slopes or in crevices prone to flooding. Species like the thin-billed prion, fulmar prion, soft-plumaged petrel, grey petrel, short-tailed shearwater, Wilsons storm petrel and grey-backed storm petrel have also been recorded on Macquarie Island but attempts at breeding have almost certainly failed due to predation pressure.

Albatrosses and giant petrels face significant threats while at sea, especially from longline fishery bycatch and the trawl fishery operating nearby. Death on long line hooks, entanglement, plastic ingestion and a change in foraging patterns caused by trawling discards have brought several species to near extinction. On land these species are easily disturbed while nesting and impacts by humans undertaking scientific research, general staff and visitors to the island are a potential threat. The wandering albatross breeds only on Macquarie Island and has declined to just 10 pairs. Strict viewing guidelines have been developed. The endemic Macquarie Island shag colonies are prone to flooding from unusually high seas or any induced rise in sea level from the greenhouse effect.

Key Sites

- Macquarie Island including all off shore islets, reefs and rock stacks.
- The surrounding waters which are used for foraging.

Key Threats

- Fishing practices resulting in bycatch of seabirds on longlines and alteration of foraging patterns due to trawl fishery practices of dumping offal at sea.
- Feral cat and rat predation of eggs, chicks and small adult seabirds.
- Overgrazing by the European rabbit exposing nesting burrows to predation and rabbits as a food source leading to an increase in cat numbers.
- Inadequate legislative protection of the marine environment and fish stocks from trawl fishery.
- Further introductions of exotic pests, disease or weeds by expansion of human activities.
- Greenhouse effect resulting in the loss of nest sites, e.g. Macquarie Island shag.

Management Recommendations

- An urgent change in commercial trawling practices by the adoption of more ecologically responsible operations in the Macquarie Island zone.
- Adoption of the state and national management recommendations relating to the Macquarie Island Marine Park, including increasing the zone of protection.
- Strict enforcement of the national threat abatement plan for longlining in the Southern Ocean.
- Systematic eradication of the feral pests. Eradication of the feral cat is currently being undertaken under a national feral pests program, while management of the rabbit and rat are ongoing.
- Increased quarantine measures to prevent the introduction of pests, and investigation and monitoring of the impact of exotic fauna.
- Guidelines for movement of personnel around the island, especially during breeding seasons.
- Continued monitoring to assess fluctuations in populations of seabirds and marine mammals, including monitoring the impacts of scientific research on fauna.
- Enforcement of minimal impact guidelines, including 'No Go' zones around sensitive nest sites. The guidelines must apply to all personnel and state clearly that:
  - Never approach a wandering albatross (adult, juvenile, chick or nest) closer than 25 metres. Active nest sites will be clearly marked.
  - No access to albatross nesting slopes as this disturbs nesting and displaying birds and damages fragile nesting habitat.
  - Caroline Cove will be a restricted area to all personnel without a permit.

Other Ways to Help

- Be aware that Macquarie Island is an important part of Tasmania and support policies and activities that help protect its land and marine zones.

More Information

Anon. (1987). Birds, Marine Mammals and Introduced Mammals on Macquarie Island. Macquarie Island Nature Reserve - Visitor's Handbook. National Parks and Wildlife Service, Tasmania.

Cumpston. J. S. (1968). Macquarie Island. Australian National Antarctic Research Expedition Scientific Reports. Antarctic Division, Department of External Affairs, Melbourne.

Gales, R. (1993). Co-operative Mechanisms for the Conservation of Albatross. Australian Nature Conservation Agency, Canberra.

Harrison, P (1983). Seabirds: An Identification Guide. Croom and Helm, Beckenham, Kent.

Marchant, S. and Higgins, P. J. (1990). Handbook of Australian, New Zealand and Antarctic Birds. Vol. 1 Part A Ratites to Petrels. Oxford University Press, Melbourne.

Macquarie Island Nature Reserve Management Plan (1991). Department of Parks, Wildlife and Heritage, Tasmania. 57pp.

Selkirk, P. M.; Seppelt, R. D. and Selkirk, D. R. (1990). Subantarctic Macquarie Island: Environment and Biology. Studies in Polar Research. Cambridge University Press, UK.

Simpson, K. and Day, N. (1996). Field Guide to the Birds of Australia: A book of identification. 5th edition. Penguin Books Australia Ltd, Victoria.

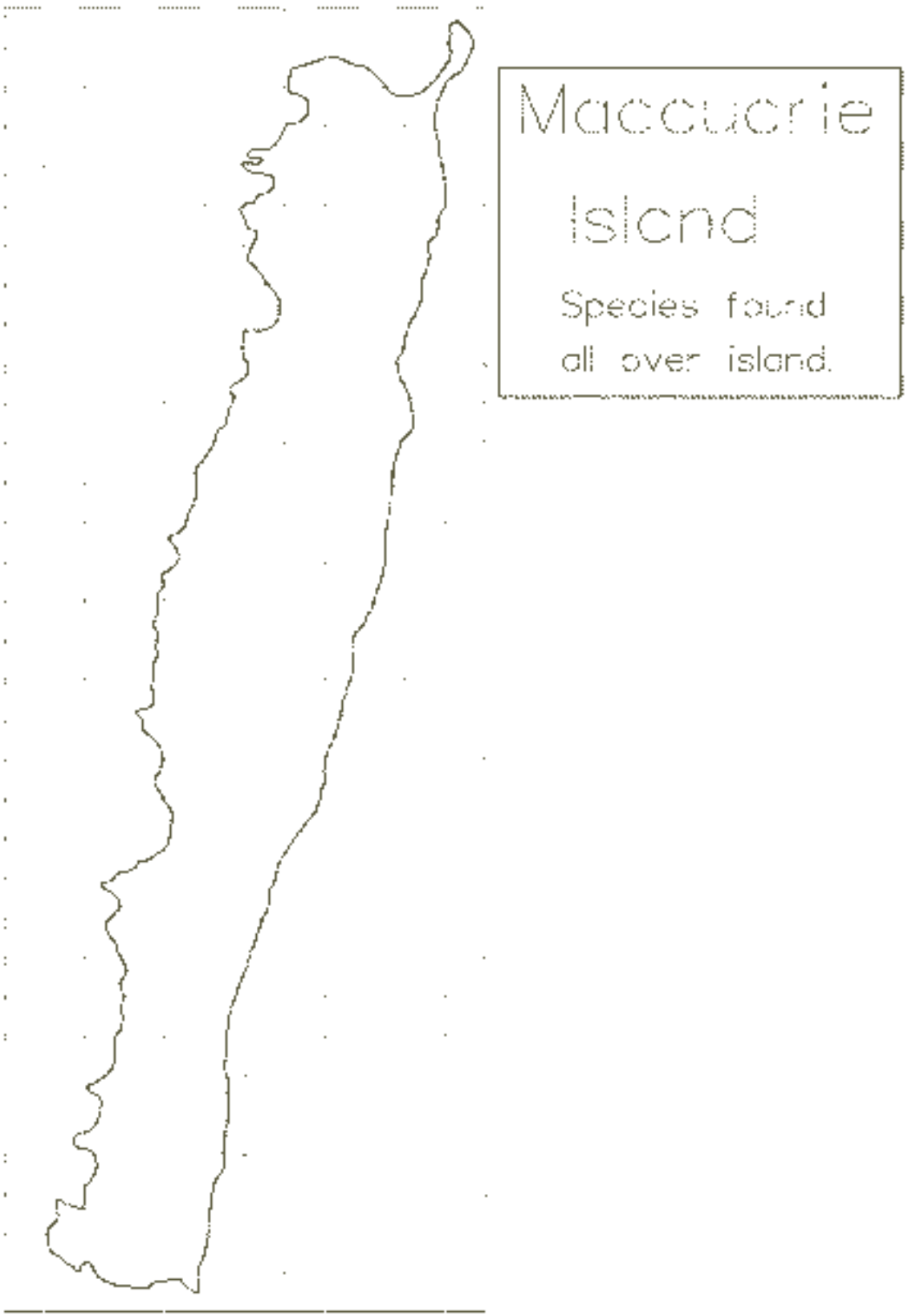
Taylor, R. H. (1979). How the Macquarie Island parakeet became extinct. New Zealand Journal of Ecology 2: 42-45.

1:25 000 TASMAP sheets with known localities

Macquarie Island is included in Section I as a single topographical map.

MACQUARIE ISLAND BIRDS

Approx. 1500km SSE of Hobart.
Length approx 34km.



GREY GOSHAWK

Accipiter novaehollandiae (Accipitridae)

[Photo by Trevor Waite]

Status

Tasmania's *Threatened Species Protection Act 1995* - Rare
Commonwealth *Endangered Species Protection Act 1992* - not listed

Description

A stunning, pure white bird of prey, standing 40 to 55 cm high with a wingspan of 70 and 110 cm. In Tasmania all specimens are pure white (i.e. white morph, common name white goshawk) with yellow legs and black beak. Juveniles have yellow eyes, adults red. Females are much larger being cockatoo-sized while males are recognisably smaller. Talons (claws) are long and can inflict a painful wound if handled incorrectly. A cryptic species, well camouflaged in the forest but occasionally seen perching in the open or heard calling in flight.

Distribution, Habitat and Biology

The grey goshawk hunts and nests in all types of wet forests, including rainforest, mixed forest and blackwood swamps. There are less than 110 breeding pairs in Tasmania. Breeding densities are greatest in blackwood swamps and stream side blackwood forest in the northwest. Birds sighted away from core breeding and foraging areas may be dispersing juveniles. Adults form territories when breeding but during the winter adults and juveniles may wander and forage over large distances.

Potential nesting habitat usually occurs along or near watercourses. Most nests occur in wet forest with old growth or regrowth older than 50 years, particularly areas containing blackwoods *Acacia melanoxylon*. Blackwood is a medium to tall tree with rough bark and spatula-shaped phyllodes (photosynthesising leaf stalks that replace true leaves). Blackwood is widespread in lowland Tasmania except on the most infertile soils. Swamp forest dominated by blackwood has been heavily cleared and drained for grazing and is inadequately represented in the reserve system. While blackwood is the preferred nest tree species, grey goshawks will also nest in paperbark, myrtle, teatree and various eucalypt species. Nests are always in forest, sometimes in patches less than 5 ha, but never in isolated trees. Two to three eggs are laid early in November and incubated for 25 to 30 days. Birds are fledged approximately 35 to 40 days later. Pairs may not necessarily reuse the same nest site.

Grey goshawks hunt from a perch in the forest canopy. The larger female eats mainly rodents, ringtail possums, rabbits and birds, e.g. rosellas and pigeons. The smaller male targets small birds, rodents and insects. Carrion from paddocks and roadsides is sometimes eaten, and birds, particularly juveniles, will harass aviaries and domestic poultry.

Key Sites

- Blackwood swamp forest and stream side blackwood forest in the northwest.
- 'Hot spots' include swampy flats and blackwood forests between Smithton, Woolnorth and Marrawah.
- Wet forest gullies in the Western Tiers.
- Northeast highlands.
- The southeast including wet parts of Bruny Island and Mt Field area.
- Coastal forest south of Macquarie Harbour and between Macquarie Harbour and the Pieman River.

Key Threats

- Clearing, fragmentation and plantation conversion of old growth and wet forest habitat, especially blackwood swamps and stream side forest.
- Deliberate persecution, e.g. shooting, trapping.
- Accidental death from poisoning, electrocution on power lines, collision, etc.

Management Recommendations for Commercial Forestry

- Detailed recommendations are provided to Forest Practices Officers under the Forest Practices Code.

Management Recommendations for Federal and State Agencies

- A National Action Plan (Olsen 1998) has been produced for birds of prey detailing required conservation measures for State and Federal Agencies, including local government. Fifteen actions are identified for Government agencies including developing agricultural codes of practice, financial incentives, reward schemes, and adopting regular survey and monitoring at key sites.

Habitat Management on Private Land

If your property is within the core breeding and foraging range shown on the map and includes any areas of wet forest, then:

- Retain as much undisturbed native wet forest as possible, particularly along gullies and areas containing blackwood. Selectively log rather than clearfell and leave corridors of native forest at least 60 m wide on each side of a watercourse or as a 200 m wide corridor between adjoining logged sites.
- If you manage land containing suitable nesting sites consider some form of long-term protection, e.g. wildlife sanctuary, management agreement, covenant, etc. A number of forest reserves and wildlife priority areas are in place for this species which may be nearby or on the boundary of your property. These could be extended with your help. Consult the 1: 25 000 map sheet section for site details. Linking properties to form large corridors of native bush and establishing Bushcare or Land for Wildlife networks can help reduce habitat fragmentation.
- Clearfelling or conversion of native forest to plantation destroys habitat for this species. Please consider other options.
- If you find an active grey goshawk nest, inform the Parks and Wildlife Service and prevent any disturbance within at least 100 m of the nest until the young are fledged.
- Goshawks require large areas for foraging and territories. Link up corridors of wet forest with adjoining properties, especially targeting watercourses and gullies.

Other Ways to Help

- Domestic poultry should be given cover and ideally penned including roof netting. Penning will also protect poultry from other predators like quoll and devil. Provide bird aviaries with sections of solid cover and two layers of wire or mesh (at least 5 cm apart) to prevent goshawks (or other birds of prey) penetrating the wire with their beak or talons.
- Report dead or injured goshawks to the Parks and Wildlife Service immediately. If you find an injured goshawk (or other bird of prey) extreme care must be taken to ensure your own safety. Cover the bird with a towel, blanket, etc. Do not touch the talons as they can inflict serious injury. If necessary, hold the legs together above the ankle. Injured birds must be kept quiet and safe. Seek advice from Parks and Wildlife as specialist carers and rehabilitation facilities are located around the State.
- Harming goshawks (or any birds of prey) is a finable offence. Report any incidents immediately to the Parks and Wildlife Service. Information can be kept confidential.
- If you find goshawks or any dead native birds including waterfowl, beneath power lines or poles, please report this immediately to Aurora Energy. Special adaptors can be installed to prevent electrocution and collision.
- Learn more about identifying, protecting and enjoying Tasmania's native bird fauna. Contact Birds Tasmania or the Australasian Raptor Association.

More Information

Aurora Energy, Head Office, Collins Street, Hobart, Tasmania, 7000.

Australasian Raptor Association, Birds Australia National Office, 415 Riversdale Road, Hawthorn East, Victoria.

Birds Tasmania, GPO Box 68, Hobart, Tasmania, 7000.

Brereton, R. and Mooney, N. J. (1994). Conservation of the nesting habitat of the grey goshawk *Accipiter novaehollandiae* in Tasmanian State forests. Tasforests 6: 79-91.

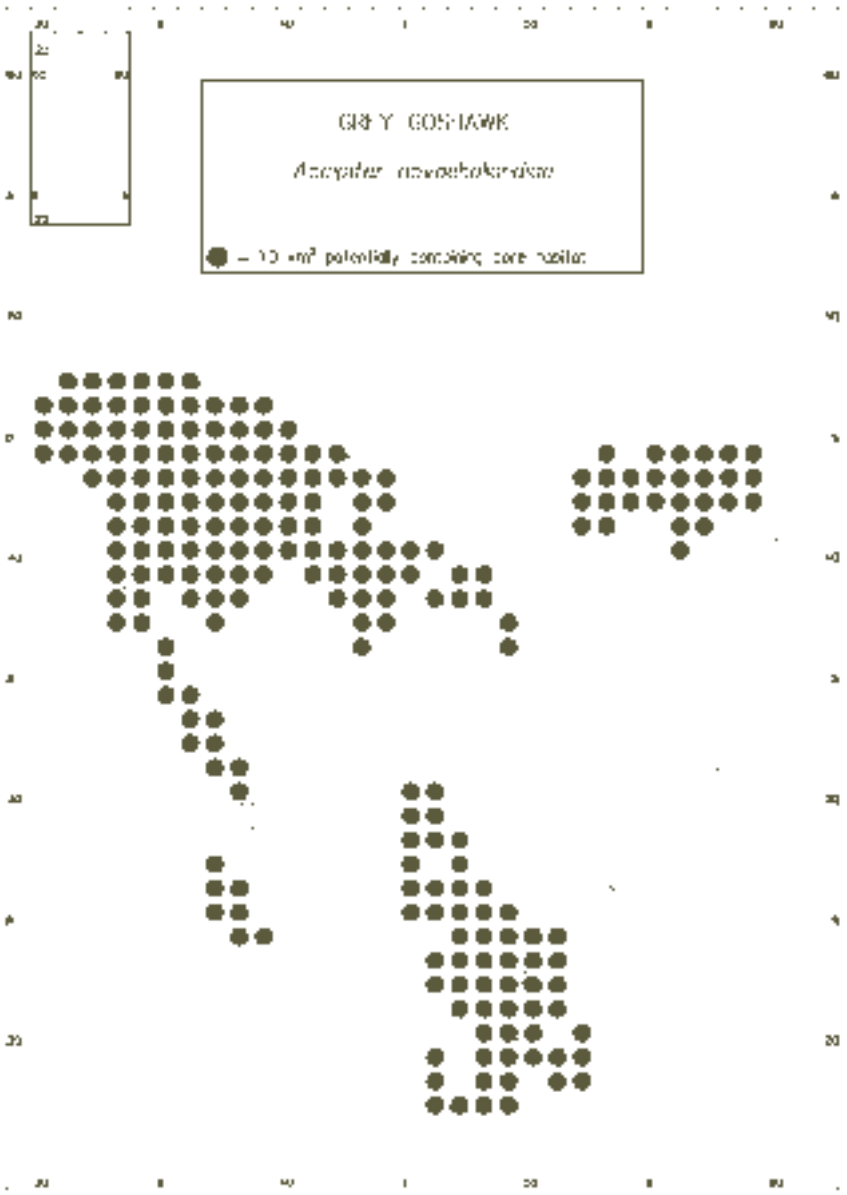
Mooney, N. J. and Holdsworth, M. (1988). Observations on the use of habitat by the grey goshawk in Tasmania. Tasmanian Bird Report 17: 1-12.

Olsen, P. (1998). Australia's raptors: diurnal birds of prey and owls. Conservation Statement No. 2. Birds Australia, Hawthorn East, Victoria.

1: 25 000 TASMAP sheets with known breeding and foraging localities

Adamsfield	Adventure Bay	Ahrberg	Balfour
Baretop	Bertha	Beryl	Block
Bluff	Borradaile	Bowes	Bradys Lookout
Burgess	Burnie	Bushy Park	Calder

Cameron
Castra
Cathedral
Cethana
Charter
Cloudy
Cluan
Collinsvale
Cygnet
Delmont
Deloraine
Dempster
Derby
Dilston
Dobson
Donaldson
Dover
Ellendale
Endeavour
Engineer
Fluted Cape
Folly
Geeveston
Glen Huon
Gog
Gordonvale
Guildford
Hardwicke
Hastings
Heemskirk
Holder
Huonville
Interview
Keith
Kindred
Lagoon
Lake Mackenzie
Latrobe
Lea
Leprena
Lewis
Liena
Liffey
Lileah
Lily
Lilydale
Lisle
Livingstone
Lloyd
Longley
Lonnavale
Loongana
Loyetea
Luina
Lymington
Mainwaring
Mallana
Mangana
Marrawah
Mathinna
Maurice
Mawbanna
Maydena
Mella
Meredith
Milabena
Mole Creek
Montagu
Montana
Montgomery
Moores
Nevada
New Norfolk
Nunamara
O'Connors
Osmund
Ouse
Parrawe
Parsons
Partridge
Patersonia
Pearse
Pencil Pine
Philips
Picton
Poatina
Professor
Quamby Bluff
Railton
Raminea
Ramsay
Recherche
Riana
Ringarooma
Rocky Cape
Roger
Rosebery
Rowallan
Saddleback
Sarah
Savage River
Scottsdale
Sheffield
Skeleton
Smithton
Springfield
Stowport
Strahan
Strickland
Stringer
Studland
Sumac
Sundown
Taroona
Tayatea
Teepookana
Temma
Tewkesbury
Tiger
Togari
Trial
Tullah
Ulverstone
Uxbridge
Veridian
Victoria
Waratah
Waterloo
Wayatinah
Weld
Wilmot
Wylds
Wynyard
Yolla


GREY GOSHAWK

EAGLES (2 species)

Wedge-tailed eagle (Tasmanian sub-species) *Aquila audax fleayi* (Accipitridae)

White-bellied sea-eagle *Haliaeetus leucogaster* (Accipitridae)

[Illustration of wedge-tailed eagle flying by Karen Richards, whole bird from PWS source library]

Wedge-tailed Eagle

Status

Wedge-tailed eagle (Tasmanian sub-species)

Tasmania's *Threatened Species Protection Act 1995* - Vulnerable
Commonwealth *Endangered Species Protection Act 1992* - Endangered

White-bellied sea-eagle

Tasmania's *Threatened Species Protection Act 1995* - not listed but considered of high conservation significance
Commonwealth *Endangered Species Protection Act 1992* - not listed

Description

The wedge-tailed eagle and the white-bellied sea-eagle are large, powerful birds of prey. The juvenile wedge-tailed eagle is tawny brown with a blonde neck which darkens with maturity to become dark brown to almost black by about 20 years of age. Juveniles and adults are similar size. The legs are feathered to the feet and have sharp, powerful talons. Total body length is 100 to 110 cm with wingspan about 2 m and body weight 3.5 to 5.5 kg; adult females being larger and heavier than males. Identifying characteristics which are obvious in flight or when underneath are the wedge-shaped tail, 'fingering' of the outer primary wing feathers and 'window' in the underwing. Pairs or individuals are sometimes seen soaring in high circles. Birds seldom call.

The white-bellied sea-eagle is generally similar in size and shape to the wedge-tailed eagle but adults are black and white underneath with a white belly and grey over the wings. The legs and feet are bare and whitish in colour. Wingspan may exceed 2 m and weight is up to 4.5 kg. Immature birds are mottled pale brown and take five years to reach adult plumage. A juvenile sea-eagle can be confused with a wedge-tailed eagle but the sea-eagle has a short white tail and strongly patterned underwing.

Distribution, Habitat and Biology

This unique subspecies of wedge-tailed eagle occurs only throughout Tasmania, including its large near offshore islands. Densities are highest in areas providing mosaics of forest, farmland, grassland, wetlands and rivers. Wedge-tailed eagles hunt over a wide range of habitats, including open heath, pasture and grassland. They feed mainly on rabbits, hares, wallabies, possums and carrion from paddocks or roadsides. Losses of lambs to eagles are relatively small and much research has indicated that it mainly involves sick stock. Wedge-tailed eagles nest only in old-growth trees in native forest, well away from disturbance. About 80% of eagle nests occur on private land or State forest with few being protected in formal reserves. Huge nests are constructed of sticks, usually in tall eucalypts in large tracts (more than 10 ha) of old-growth eucalypt or mixed forest. Nest trees are usually in sheltered positions on leeward slopes. Wedge-tailed eagle territories can contain up to three nests with one being favoured each year. Active nests in adjacent territories can be 5 to 20 km apart. Eagles are traditional nesters, with some nests having been used continuously for at least 50 years. Eagles are very timid while breeding and are likely to desert a nest if disturbed. They breed from August to January and are particularly sensitive to disturbance early in this period.

Sea-eagles are widely distributed from India to Australia. They nest and forage mainly near the coast but will also live near large rivers and lakes inland, often moving on a seasonal basis. Their nest construction is similar to the wedge-tailed eagle and when resources are limited nests can be interchanged between the two species. Both sea-eagles and wedge-tailed eagles lay one to two eggs every year but usually only one chick is reared to fledging. Sea-eagles hunt by a gliding attack from a prominent perch. Fish, eels or birds are snatched from the water's surface although lizards, small mammals and carrion are also eaten on land.

Nest site information is confidential to ensure protection and privacy of nesting pairs. Please contact the Threatened Species Unit should you require specific locality information. The use of nests changes over time so please always seek the most up-to-date information for any projects involving land change.

Key Sites

Wedge-tailed eagle 'hot spots'

- The east coast around the Swansea and Triabunna area
- Western Tiers around Bothwell
- Sheffield to Mole Creek
- Northern Midlands in the Ross and Nile area

White-bellied sea-eagle 'hot spots'

- Tamar River, estuary and adjoining channels
- Tasman Peninsula
- Furneaux Group
- King Island and Hunter Island Group

Wedge-tailed Eagle

Key Threats

- Loss and disturbance to breeding habitat through clearfelling and conversion to plantation (pine and eucalypt).
- Loss and disturbance to breeding and foraging habitat through continued urban or coastal subdivision.
- Loss or desertion of young due to disturbances to eagles at breeding time (August to January).
- Persecution by shooting and poisoning, etc. Up to 20 wedge-tailed eagles are killed each year in this way. Sea-eagles are shot by commercial and recreational fishers.
- Felling of trees containing active or recently used nests.
- Human-related accidents such as electrocution on power lines, oiling from fish waste, etc.

Management Recommendations for Commercial Forestry

- Detailed recommendations are provided to Forest Practices Officers under the Forest Practices Code.

Management Recommendations for Federal and State Agencies

- A National Action Plan (Olsen 1998) has been produced for birds of prey detailing required conservation measures for State and Federal Agencies, including local government. Fifteen actions are identified for Government agencies including developing agricultural codes of practice, financial incentives, reward schemes, and adopting regular survey and monitoring at key sites.

Habitat Management on Private Land

- Retain large tracts of undisturbed native forest throughout the species' range. Try to find nests before any development such as roading or clearing is planned. Notify Parks and Wildlife of any nests found or suspected in the area and seek advice and assistance with surveying.
- To protect a nest, leave at least 10 ha (a circle about 350 m across or an oval 400 m x 300 m) of relatively undisturbed old eucalypt forest around the nest. More protection on the uphill side is important to shelter the nest from prevailing winds (i.e. the nest need not be in the middle of the reserve but should be at least 100 m from any edge).
- Actively protect nest areas from hot or frequent fires or any disturbances to the trees or canopy.
- Keep mechanical and human activity, even visits on foot, at least 500 m away or 1 km if in line of sight of the nest from the nest site during breeding (August to January). Time nearby activities to occur outside the breeding season.
- Make sure any use of 1080 follows the Code of Practice. Other poisons such as Pindone can have a serious effect on eagles. Seek advice from Parks and Wildlife.
- Be careful about the use of farm chemicals. The use of agricultural chemicals to poison wildlife often kills eagles and other birds of prey as there is little control over which animals take baits or feed on poisoned carcasses.
- If culling on your property ensure that all shooters are aware of the permit conditions and that all other wildlife are wholly protected.
- For ideas on managing stock losses due to any predator, obtain the brochure *Eagles on the Farm* from the Parks and Wildlife Service.
- If you manage land containing eagle nests or potential nest sites consider some form of long-term protection, e.g. wildlife sanctuary, management agreement, covenant, etc. A number of forest reserves and wildlife priority areas are in place for this species which may be nearby or on the boundary of your property. These could be extended with your help. Consult the 1: 25 000 map sheet section for general locality details. Linking properties to form large corridors of native bush and establishing Bushcare or Land for Wildlife networks can help reduce habitat fragmentation.

Other Ways to Help

- Report dead or injured eagles to the Parks and Wildlife Service immediately. If you find an injured eagle (or other bird of prey) extreme care must be taken to ensure your own safety. Cover the bird with a towel, blanket, etc. Do not touch the talons as they can inflict serious injury. If necessary, hold the legs together above the ankle. Injured birds must be kept quiet and safe. Seek advice from Parks and Wildlife as specialist carers and rehabilitation facilities are located around Tasmania.
- Deliberately injuring eagles will incur large fines. If you have any information on persecutions please contact the Parks and Wildlife Service. Information can be kept confidential.
- If eagles regularly nest or forage in your area, keep records so that long-term breeding trends can be understood. Contact the Parks and Wildlife Service for details on collecting information.
- If you find eagles or any dead native birds including waterfowl, beneath power lines or poles, please report this immediately to Aurora Energy. Special adaptors can be installed to prevent electrocution and collision.
- Learn more about identifying, protecting and enjoying Tasmania's native bird fauna. Contact Birds Tasmania or the Australasian Raptor Association.

More Information

Aurora Energy, Head Office, Collins Street, Hobart, Tasmania, 7000.

Australasian Raptor Association, Birds Australia National Office, 415 Riversdale Road, Hawthorn East, Victoria.

Bell, P. and Mooney, N. (1998). Wedge-tailed Eagle Recovery Plan 1998 - 2003 (draft). Parks and Wildlife Service, Tasmania.

Birds Tasmania, GPO Box 68, Hobart, Tasmania, 7000.

Higgins, P. J. and Davies, S. J. J. F. (1990). Handbook of Australian, New Zealand and Antarctic Birds. Vol. 2 Raptors to Lapwings. Oxford University Press, Melbourne.

Mooney, N. J. and Holdsworth, M. (1991). The effects of disturbance on nesting wedge-tailed eagles (*Aquila audax fleayi*) in Tasmania. Tasforests 3: 15-31.

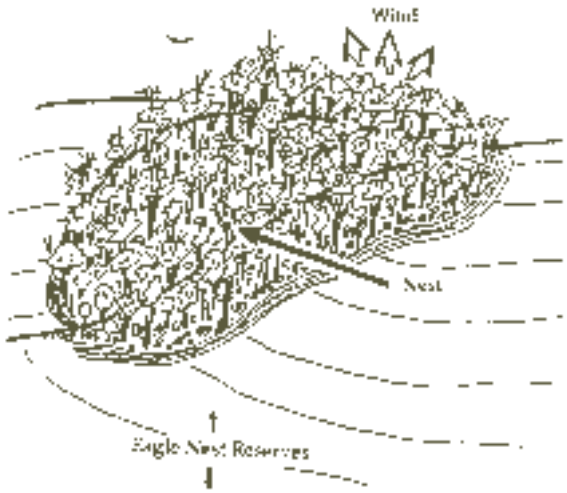
Olsen, P. (1998). Australia's raptors: diurnal birds of prey and owls. Conservation Statement No. 2. Birds Australia, Hawthorn East, Victoria.

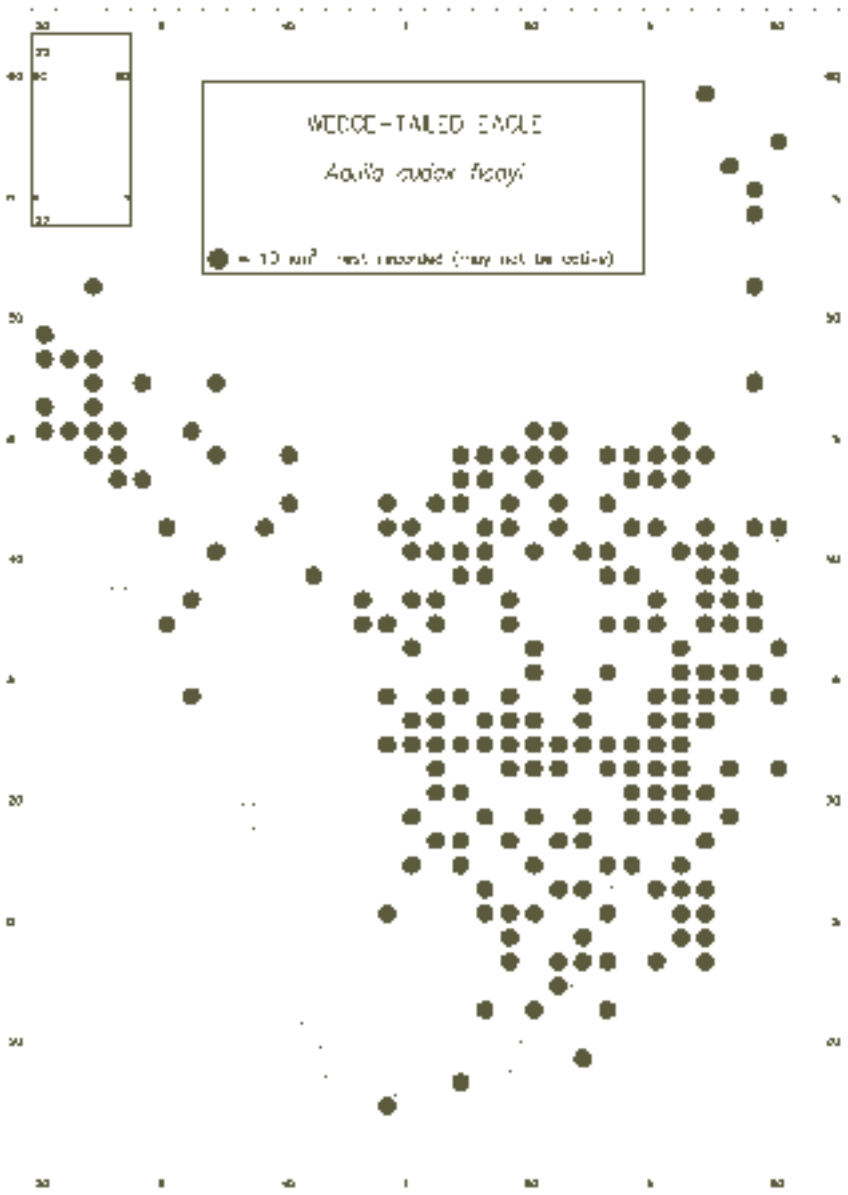
Parks and Wildlife Service (1997). Eagles on the Farm. Brochure available from the Parks and Wildlife Service, Tasmania.

1: 25 000 TASMAP sheets with known nest localities and potential nest habitat

Sites cover the majority of mapsheets and are fully referenced in Section I. Grid references for nest sites are confidential. Please contact the Threatened Species Unit if site information is required.

2 Figures: typical nest site and nest protection reserve (illustrations from Parks and Wildlife Service 1997 notesheet)




WEDGE-TAILED EAGLE
Aquila audax fleayi

COASTAL BIRDS (26 species)

(includes shorebirds and seabirds breeding on the coast and near offshore islands)

[Photos of fairy tern and little tern from Hill et al. 1988, hooded plover and curlew sandpiper from PWS source library]

Status

Little tern Sterna albifrons sinensis

Tasmania's *Threatened Species Protection Act 1995* - Endangered
Commonwealth *Endangered Species Protection Act 1992* - Endangered

Shy albatross Thalassarche cauta

Tasmania's *Threatened Species Protection Act 1995* - Vulnerable
Commonwealth *Endangered Species Protection Act 1992* - Vulnerable

Soft-plumaged petrel Pterodroma mollis

Tasmania's *Threatened Species Protection Act 1995* - Vulnerable
Commonwealth *Endangered Species Protection Act 1992* - Vulnerable

Hooded plover Thinornis rubricollis

Tasmania's *Threatened Species Protection Act 1995* - not listed but considered of high conservation significance
Commonwealth *Endangered Species Protection Act 1992* - Vulnerable

Fairy tern Sterna nereis

Tasmania's *Threatened Species Protection Act 1995* - Rare
Commonwealth *Endangered Species Protection Act 1992* - not listed

White-fronted tern Sterna striata

Tasmania's *Threatened Species Protection Act 1995* - Rare
Commonwealth *Endangered Species Protection Act 1992* - not listed

*Other Species, including Migratory Birds listed on *JAMBA and CAMBA*

Tasmania's *Threatened Species Protection Act 1995* - not listed, but considered of high conservation significance
Commonwealth *Endangered Species Protection Act 1992* - not listed

Little penguin *Eudyptula minor* - colonies under threat
Short-tailed shearwater *Puffinus tenuirostris* - colonies impacted, JAMBA
Bar-tailed godwit *Limosa lapponica* - JAMBA, CAMBA
Caspian tern *Sterna caspia* - JAMBA, CAMBA
Curlew sandpiper *Calidris ferruginea* - JAMBA, CAMBA
Eastern curlew *Numenius madagascariensis* - JAMBA, CAMBA
Fleshy-footed shearwater *Puffinus carneipes* - JAMBA
Great knot *Calidris tenuirostris* - JAMBA, CAMBA
Greenshank *Tringa nebularia* - JAMBA, CAMBA
Grey plover *Pluvialis squatarola* - JAMBA, CAMBA
Grey-tailed tattler *Tringa brevipes* - JAMBA, CAMBA
Lesser golden plover *Pluvialis dominica* - JAMBA, CAMBA
Lesser sand plover (Mongolian) *Charadrius mongolus* - JAMBA, CAMBA
Pectoral sandpiper *Calidris melanotos* - JAMBA
Red knot *Calidris canutus* - JAMBA, CAMBA
Red-necked stint *Calidris ruficollis* - JAMBA, CAMBA
Ruddy turnstone *Arenaria interpres* - JAMBA, CAMBA
Sooty shearwater *Puffinus griseus* - JAMBA, CAMBA
Terek sandpiper *Tringia terek* - JAMBA, CAMBA
Whimbrel *Numenius phaeopus* - JAMBA, CAMBA

*International agreements, JAMBA Japan Australia Migratory Bird Agreement, CAMBA China Australia Migratory Bird Agreement

What, Where and How to Protect Tasmania's Threatened Animals

Description

Terns are long-winged seabirds with a slender and streamlined body shape. Most terns are grey above and white below, with variations of black on the head. They have breeding and non-breeding plumage, with the colouring of feathers, legs and bill changing between seasons. The little tern and fairy tern are very similar in appearance. Both have a distinctive quick, dancing flight and plummet with a straight dive into the water. The little tern is the smallest Australian tern being about 20 cm long. During breeding the little tern has a yellow bill with a black tip, and the area between the eye and bill is black. Outside breeding, the bill is black, forehead and crown are white, the back of the neck is black and the shoulder has a dark bar. The fairy tern in breeding plumage has an orange bill usually without the black tip, and the area between the eye and bill is white. Outside breeding, the bill has a blackish tip, the top of the head is still mainly black and there is no dark shoulder bar. The white-fronted tern is one of a group of five similar species sometimes known as the 'commic' terns (common and Arctic). This species is about 38 cm long, very pale grey above with pure white underparts, a fine black bill and legs red to black in colour.

The hooded plover is about 20 cm long with adults having a very distinctive black head. Adults also have a black throat, white nape and black shoulder patch with red around the eye and a black-tipped red bill. The back is sandy brown and underneath white; legs are red. Juvenile plumage is a mottled brown and quite distinct from the adult. The species is seen on sandy beaches where it will run in front of intruders, taking flight at the last moment and circling back along the beach.

The shy albatross is a pelagic seabird and weighs about 4 kg with a wingspan of 2 to 3 m. The upperwings are black. The underwings are white with a narrow black margin and a distinctive small black patch at the base of the leading edge. The underbody is white, top of the head white, cheeks grey-white, and the bill creamy in adults and greenish-grey in juveniles.

The soft-plumaged petrel is about 35 cm in length, with a rapid, bounding flight pattern. It has a grey back and the wings are dark above and below. As with all petrel species the nostrils are joined into a tube on the top of the bill. The underside of the body is white apart from a grey band across the breast. Other species of petrel have colour phases that may look similar (e.g. Gould's and white-headed petrels in Tasmania). Taxonomy at subspecies level is complicated due to geographical variation.

The flightless little (or fairy) penguin is about 40 to 45 cm long and weighs about 1 kg. The body shape is stout, compact and streamlined for swimming. The feathers are sleek blue to grey on the head and back and silky white on the front. The flippers are 11 to 14 cm long and a similar bluey grey colour. The webbed feet are pinkie-skin toned with dark claws.

A field guide such as Simpson and Day (1996) or Lane (1987) will help with more detailed identification of all these species.

Distribution, Habitat and Biology

Little terns breed along the east coast of mainland Australia from South Australia to eastern Northern Territory. In Tasmania they have been recorded breeding at only a few sites on the northeast and east coasts. Fairy terns breed around the Tasmanian coast (except for the central north) as well as in Victoria, South Australia and Western Australia. A small number of white-fronted terns breed in summer on islands in eastern Bass Strait, but most birds seen in southeastern Australia are non-resident winter visitors from New Zealand.

Breeding habitat for these tern species is sand or shingle beaches, unvegetated sites near estuaries and lakes, and estuarine and offshore islands. Nests are very exposed, being a simple scrape on the ground made in sand, shingle or on rock. Nests on beaches are made between the high tide mark and shore vegetation and are extremely difficult to see. Nesting colonies may be large, small or dispersed. Little terns and fairy terns can sometimes share the same breeding colonies. Terns feed on fish and crustaceans, taken by diving from above the water surface and plummeting straight down. The white-fronted tern will feed offshore as well as in the surf zone.

Hooded plovers are distributed throughout southeast Australia and in Western Australia. In Tasmania they breed between August and March on sandy oceanic beaches, nesting above the high tide mark or in dunes. Adult pairs maintain territories along the beach and can be widely spaced (up to 100 m apart). They lay 2 to 3 tan speckled eggs in a well-camouflaged but simple scrape in the sand or on the ground. Their main food source is small invertebrates living beneath rotting seaweed or driftwood. When chicks are hatched the parent birds feed with them along the tidal line. Chicks will 'freeze' or crouch when danger approaches and they are very susceptible to trampling and predation. Adults make a low repeated piping call.

The shy albatross is native to Australia and in Tasmania breeds only on the outlying islands of the Mewstone and Pedra Branca Island in the far southeast and Albatross Island in western Bass Strait. This species nests on rocky slopes or flat ground and builds a conical nest of mud and other materials which is re-used every year. A single egg is laid in September and the chicks fledge and leave the colony in the following April. Fledglings stay at sea and offshore for at least two years. Those born on Albatross Island will fly mainly in the waters south and southwest of Australia while those born on the Mewstone or Pedra

Branca Island fly in the Indian Ocean near South Africa. Adults attend the colonies for most of year and form pair bonds for life. Shy albatross start to breed at five or more years of age and have been recorded living to greater than 50 years of age. The shy albatross feeds mainly on fish, squid and cuttlefish but also shrimps and tunicates. Food is obtained by surface feeding, sometimes while in flight, or by diving to several metres below the surface. They feed mainly during the day and will often follow fishing vessels that are regular in the area.

The soft-plumaged petrel is suspected to breed on Maatsuyker Island and possibly other nearby islands, although little information is available. In known nesting areas (islands in the New Zealand region, southern Indian and Atlantic Oceans) the species nests in burrows among ferns or grass tussocks on steep slopes, and arrives and departs under the cover of darkness. A single egg is laid. Soft-plumaged petrels feed from the open ocean on squid, fish and invertebrates such as shrimps and sea skaters.

Little penguin breed in colonies around the coastline, returning to burrows only on dusk or dark. They follow regular tracks to access their burrows which are dug into the fore or back dune surrounded by low tussock or other vegetation. Two to five eggs are laid and both parents help to raise the chicks. When at sea for several months a year they feed on small shoaling fish and are agile swimmers and divers. Little penguins also return to the coastline to moult (grow new feathers) which takes two to three weeks.

Key Sites

Terns, hooded plover and migratory birds

All species favour sand and shingle beaches, dunes, estuaries, and islands around Tasmania, especially those containing driftline debris such as seaweed and close to fresh water or estuarine outlets and channels. 'Hot spots' include:

- Boulanger Bay - Robbins Passage and associated islands and headlands in the area - international significance for shorebirds and Palaearctic waders
- Waterhouse, Cape Portland, Musselroe Bay, Ringarooma River mouth, Tomahawk Beach, Bridport River estuary area - rare and threatened species, wading birds
- Flinders Island (especially Camerons Inlet, Long Point, Logans Lagoon) and other Furneaux Islands, including the east coast of Cape Barren Island - threatened species and communities, relictual fauna, important breeding sites, edge of range habitat
- Bakers Beach and Port Sorell area - saltmarsh fauna and waders
- Derwent Estuary, including Derwent marshes - threatened species and migratory waders
- Cremorne, Lauderdale, South Arm area, including Clear Lagoon, Calverts Lagoon - threatened species, mudflats and migratory waders
- Little Swanport area, especially Lisdillon Lagoon, Rheban, Sandspit River
- Carlton River estuary, Marion Bay and Blackmans Bay
- Scamander River mouth, Dianas Basin, Georges Bay
- Eddystone Point, Ansons Bay, Bay of Fires
- Chain of Lagoons, Seymour Inlet
- Friendly Beaches, Nine Mile Beach, Moulting Lagoon, mouth of Meredith River and Swan River
- St Albans Bay, Tamar estuary, George Town, Weymouth (Piper's River mouth)
- Adventure Bay, Cloudy Bay and Neck Beach on Bruny Island
- Fortescue Bay on Tasman Peninsula
- Pittwater and Orielton Lagoon - saltmarsh communities, migratory wading birds, threatened species
- King Island, especially Sea Elephant area and Lavinia Nature Reserve - threatened species and stop-over sites for migratory species

Shy albatross, soft-plumaged petrel, white-fronted petrel

- All Tasmania's offshore islands and rock stacks, including Maatsuyker Island, and especially in eastern and western Bass Strait, including the Hunter Group
- Shy albatross breed on the Mewstone, Pedra Branca Island, and Albatross Island

Little penguin colonies 'hot spots'

- On Bass Strait islands, especially Ninth Island and in Banks Strait, especially Passage and Forsyth Islands
- George Town and Low Head
- King Island around Currie, Cataraqui Point, Grassy and Councillor Island
- North coast at Stanley, Rocky Cape, Low Head and consistently from Wynyard to Port Sorell

- Georges Rocks, Diamond Island and Bicheno
- Sites on Maria Island and Tasman Peninsula
- Marion Bay
- Sites between Clifton Beach, Fort Direction, The Neck on Bruny Island, and Huon Island
- De Witt, Louisa Island and southwest coast
- Strahan and islands in Macquarie Heads

Short-tailed shearwater colonies

- Coastally around the Hunter Group and King Island in northwest Tasmania
- Coastally around most islands in the Furneaux Group, including Flinders Island
- Macquarie Harbour coast with viewing site at Ocean Beach, Strahan
- Islands and coastline between Tasman Island and Port Davey. Public viewing sites include The Neck Beach, Bruny Island and Cape Deslacs, Clifton Beach

Key Threats

- Disturbance and destruction of nests and nesting habitat, especially through trampling by vehicles, including quad bikes, people, dogs, horses, etc. This includes trampling of steep and peaty slopes on islands.
- Destruction of nesting habitat through encroaching development, clearing, grazing by stock or rabbits and frequent firing.
- Introduction and spread of exotic weed species making dunes and coasts unsuitable for nesting - like *Spartina maritima* (rice grass), *Ulex europaeus*, (gorse) *Psoralea pinnata*, *Chrysanthemoides monilifera* (boneseed), *Coprosma repens*, *Lycium ferocissimum* and *Euphorbia paralias* (coastal spurge).
- The extensive use of marram grass *Aminophila arenaria* for dune stabilisation making sites unsuitable for nesting.
- Disturbance to birds on nests causing loss of eggs through predation or cold.
- Continued daily disturbance to chicks while feeding causing chicks to hide for long periods and starve.
- Pollution of waterways, especially tidal estuaries and including oil spills (domestic and industrial).
- Increase in and lack of regulation at viewing sites due to excessive light and beach activity.
- Predation by introduced rats, cats and dogs on adults, chicks and eggs.
- Unregulated harvesting of seaweed and bivalves which depletes key food sources.

Additional threats to shy albatross are:

- Death on longline fishing hooks from commercial and recreational fishers.
- Deliberate persecution (especially shooting) associated with fishing.
- Entanglement in fishing lines and sea debris, including plastics.
- A viral disease which may decrease chick production.
- Human disturbance to breeding colonies, especially when adults are with chicks.

Habitat Management

- Protection and reservation status is required for Tasmania's offshore island network. Islands should be prioritised into high, medium or low conservation requirements with a system of conservation managers established to protect the biodiversity values and undertake regular monitoring, surveying and rehabilitation.
- Rehabilitation of coastal areas requires advice on the appropriate plant species to use. Naturally occurring succulent herbs, pigface, native tussocks and coastal wattles are found in many sites and should be favoured.
- Do not plant marram grass or any exotics that act to stabilise or change the natural configuration of the dunes. Dune systems naturally change over time and shorebirds have adapted their nesting behaviour to this process.
- Do not allow stock access to dunes or the beach. Nests are easily trampled and bird colonies and burrows are on fragile erodible soils. Over grazing also exposes the entrance of burrows to predators.
- Coastal and near shore developments (aquaculture, etc.) require proper environmental impact assessment and planning. High priority sites should be protected either annually or during the breeding season.
- If you manage land containing tidal mudflats and other suitable wader areas, please consider some form of long-term protection, e.g. wildlife sanctuary, management agreement, covenant, etc. Linking coastal properties to form large corridors of native habitat and establishing Coastcare or Land for Wildlife networks can help reduce habitat fragmentation.

Other Ways to Help

Coastal seabirds are sensitive to disturbance, especially during the breeding season (October to March), and care is needed on beaches. You can help by:

- Do not disturb nesting birds by walking, driving or horse-riding in dunes or the upper beach area during the breeding season. Keep below the high water mark and away from nesting areas which are fenced or signposted.
- Always keep dogs on a leash and walk near the water. Adult birds with chicks also feed along the drift line and are easily disturbed and trampled. Respect beach areas specifying 'no dogs'.
- If small birds start dive-bombing, alarm calling or feigning a broken wing, move away quickly because you are near a nest site. If you see a nest, keep away as your presence can easily cause nest failure. Remember that nests are well camouflaged and seldom seen until you are upon them.
- Do not pick up eggs or chicks you find on the beach even if they 'appear' deserted. This is a fineable offence. Just move away quickly. Parent birds will be nearby and will return to the nest. Chicks run about near the water after hatching. Don't get between adults and chicks, stop and wait for birds to move away.
- If you live on the coast, keep pets indoors at night, especially cats. Cats easily predate adults and chicks roosting at night.
- Do not land on offshore islands containing breeding colonies of seabirds. This will minimise any risk of introducing predators, fires and general disturbance to birds, causing nest failure. Birds are especially sensitive to disturbance during the breeding season (October to March). Seek advice before planning your trip.
- Ecotourism ventures focusing on the coast and offshore islands require advice and guidelines to avoid impact to wildlife. This includes 'No Go' breeding periods and how best to minimise impact when watching wildlife.
- Seaweed and other debris provides a major food resource for shorebirds by containing thousands of minute invertebrates. Do not collect large amounts of seaweed as this depletes the food supply. Please be considerate and where allowed please only take small amounts at irregular intervals.
- Penguins return to their burrows at dusk. Please keep well away from burrows and tracks used by penguins to reach their burrows. Do not shine torches or bright lights on birds as this distracts and dazes them while trying to find their burrow. Observe viewing guidelines at established sites and remain off the beach.
- Be responsible while at sea or on the coast with waste, especially fishing netting and plastics. Dispose of all rubbish properly when onshore.
- Report details of birds found with leg or flipper bands to the Australian Bird and Bat Banding Scheme (address below). Bands are used to gather information on bird movements for long-term surveys.
- Contact the Parks and Wildlife Service immediately if entangled, injured or dead birds are found.
- Learn more about identifying, protecting and enjoying Tasmania's native bird fauna. Contact Birds Tasmania.

Additional Management Recommendations for Albatross (and other seabirds following fishing vessels)

Methods to reduce bycatch of albatrosses on longline hooks as described in the national Threat Abatement Plan (Environment Australia 1998) are:

- Night setting of baits and reduction of deck lighting as much as possible during line setting.
- Use of a bird scaring line and streamers.
- Use of a bait-casting machine to consistently land baited hooks under the protection of the bird line, compared to deployment by hand.
- Use of weighted hooks, thawed bait and puncturing of swim bladders to sink the bait quickly.
- Retention of all offal on board when line setting or hauling.
- Do not actively encourage birds to follow vessels by discarding fish waste. This will lead to additional problems such as a change in species' diet and foraging patterns. Enjoy them without interfering.

More Information

Australian Bird and Bat Banding Scheme. GPO Box 8, Canberra, ACT, 2601.

Birds Tasmania, GPO Box 68, Hobart, Tasmania, 7000.

Blackhall, S. A., Lynch, A. J. and Corbett, C. (1996). Tasmania. A Directory of Important Wetlands in Australia. (2nd. ed.). Australian Nature Conservation Agency, Canberra, pp 533-604.

Environment Australia (1998). Threat Abatement Plan for the incidental catch (or by-catch) of seabirds during oceanic longline fishing operations. Marine Section, Environment Australia, GPO Box 626, Canberra.

Gales, R. (1993). Co-operative measures for the Conservation of Albatrosses. Australian Nature Conservation Agency, Canberra.

Higgins, P. J. and Davies, S. J. J. F. (1990). Handbook of Australian, New Zealand and Antarctic Birds. Vol. 2 Raptors to

Lapwings; Oxford University Press, Melbourne.
Higgins, P. J. and Davies, S. J. J. F. (1996). Handbook of Australian, New Zealand and Antarctic Birds. Vol. 3 Snipe to Pigeons. Oxford University Press, Melbourne.
Hill, R., Bamford, M., Rounsevell, D. and Vincent, J. (1988). Little terns and fairy terns in Australia. RAOU Conservation Statement. RAOU Report No 53, Melbourne RAOU.
Lane, B. A. (1987). Shorebirds in Australia. Nelson Publishers, Thomas Nelson Australia, Victoria.
Marchant, S. and Higgins, P.J. (1990). Handbook of Australian, New Zealand and Antarctic Birds. Vol. 1 Part A Ratites to Petrels. Oxford University Press, Melbourne.
Robertson, G. and Gales, R. (eds) (1998). Albatross Biology and Conservation. Surrey Beatty and Sons.
Simpson, K. and Day, N. (1996). Field Guide to the Birds of Australia: A book of identification. 5th edition. Penguin Books Australia Ltd, Victoria.
Skira, I. J. and Davis, G. (1987). The short-tailed shearwater colonies of King Island. The Tasmanian Naturalist 90: 1-6.
Skira, I. J., Brothers, N. and Pemberton, D. (1996). Distribution, abundance and conservation status of short-tailed shearwaters *Puffinus tenuirostris* in Tasmania, Australia. Marine Ornithology 24: 1-14.
Thomas, D. (1979). Tasmanian Bird Atlas. Fauna of Tasmania Handbook No. 2, University of Tasmania, Hobart.
Watkins, D. (1993). A National Plan for Shorebird Conservation in Australia. Australasian Wader Studies Group, Royal Australasian Ornithologists Union and World Wide Fund For Nature. RAOU Report No. 90, Melbourne.

1: 25 000 TASMAP sheets with known localities and potential habitat

fairy tern

Adamson
Ansons Bay
Bird
Coles Bay
Egg Lagoon
Hobart
Keraudren
Lyme Regis
Musselroe
Patriarchs
Rochon
Scamander (Falmouth)
Sister
Taroona
Whitemark
Adventure Bay
Arthurs
Breaksea
Cranbrook
Falmouth
Kellevie
Leventhorpe
Mainwaring
Naturaliste
Preservation
Royalty
Sea Elephant
Smithton
Veridian
Wybalenna
Ahrberg
Badger
Bridport
Cuvier
Friendly
Kelly
Lisdillon
Mayfield
New Year
Richmond
Saltwater
Sellars
St Helens
Walker
Anderson
Bellinger
Carlton
Dunalley
Great Bay
Kenneth Bay
Logan
Montagu
Orford
Robbins
Sandspit
Settlement
Stanley
Waterhouse

little tern

Beaumaris
Grim
Montagu
Piccaninny
Sandspit
Bridport
Kellevie
Moriarty
Richmond
Sellars
Dunalley
Logan
Musselroe
Robbins
St Helens
Falmouth
Lyme Regis
Patriarchs
Royalty
Waterhouse

white-fronted tern

Anderson
Fisher
Passage
Barretts
Keraudren
Robbins
Bicheno
Lyme Regis
Whitemark
Carlton
Moriarty

hooded plover

Adamson
Anderson
Barnes Bay
Bicheno
Bluff
Bridport
Carlton
Cox
Cuvier
Dover
Elliott
Fisher
Adventure Bay
Ansons Bay
Barretts
Binalong
Bougainville
Burnie
Cloudy
Cranbrook
Darlington
Dunalley
Emita
Fluted Cape
Ahrberg
Arthurs
Beaumaris
Bird
Bowood
Calder
Coles Bay
Cremorne
De Witt
Eddystone
Endeavour
Friendly
Albina
Badger
Bellinger
Blackmans Bay
Breaksea
Cameron
Communication
Currie
Devonport
Egg Lagoon
Falmouth
Graham

Grassy
Grindstone
Hibbs
Interview
Kelly
Lagoon
Lisdillon
Loorana
Lymington
Mayfield
Moriarty
Naracoopa
Orford
Passage
Piccaninny
Preservation
Recherche
Rochon
Sandspit
Settlement
Sorell
Studland
Tam O'Shanter
Tasman
Thirsty
Ulverstone
Waterhouse
Wybalenna
Great Bay
Hardwicke
Hilliard
Ironhouse
Kenneth Bay
Leprena
Loccota
Louisa
Mainwaring
Meerim
Mulcahy
Naturaliste
Oxberry
Patriarchs
Port Arthur
Prion
Reekara
Rocky Cape
Schouten
Seymour
St Helens
Sundown
Tanner
Telopea
Tomahawk
Varna
Whitemark
Wynyard
Greens Beach
Hastings
Hippolyte
Johnsons Bay
Keraudren
Leventhorpe
Lodi
Low Head
Mallanna (Henty)
Montagu
Murdunna
New Year
Palana
Pearshape
Port Sorell
Puncheon
Riedle
Royalty
Sea Elephant
Sister
Stanley
Swansea
Tarranna
Temma
Triabunna
Veridian
Wickham
Grim
Heemskirk
Hobart
Kellevie
Kerford
Lewis
Logan
Lyme Regis
Marrawah
Montgomery
Musselroe
Ordnance
Partridge
Peron
Precipitous
Raoul
Robbins
Saltwater
Sellars
Smithton
Stokes
Table Head
Taroona
The Gardens
Trial
Walker
Wingaroo

shy albatross

Keraudren; South Cape (1: 100 000 mapsheet)

soft-plumaged petrel

De Witt (not confirmed)

migratory waders (including JAMBA / CAMBA species)

Blackmans Bay
Cranbrook
Friendly
Leventhorpe
Low Head
Mayfield
Patriarchs
Sandspit
Stanley
Trial
Carlton
Cremorne
Grim
Lisdillon
Lyme Regis
Montagu
Port Sorell
Sellars
Studland
Walker
Cloudy
Dunalley
Hobart
Lodi
Mallanna
Musselroe
Richmond
Sorell
Swansea
Waterhouse
Communication
Fisher
Launceston
Logan
Mawbanna
New Norfolk
Robbins
St Helens
Triabunna

little penguin colonies

Breeding colonies on islands in the Hogan Group and Kent Group are listed against mapsheet SISTER.

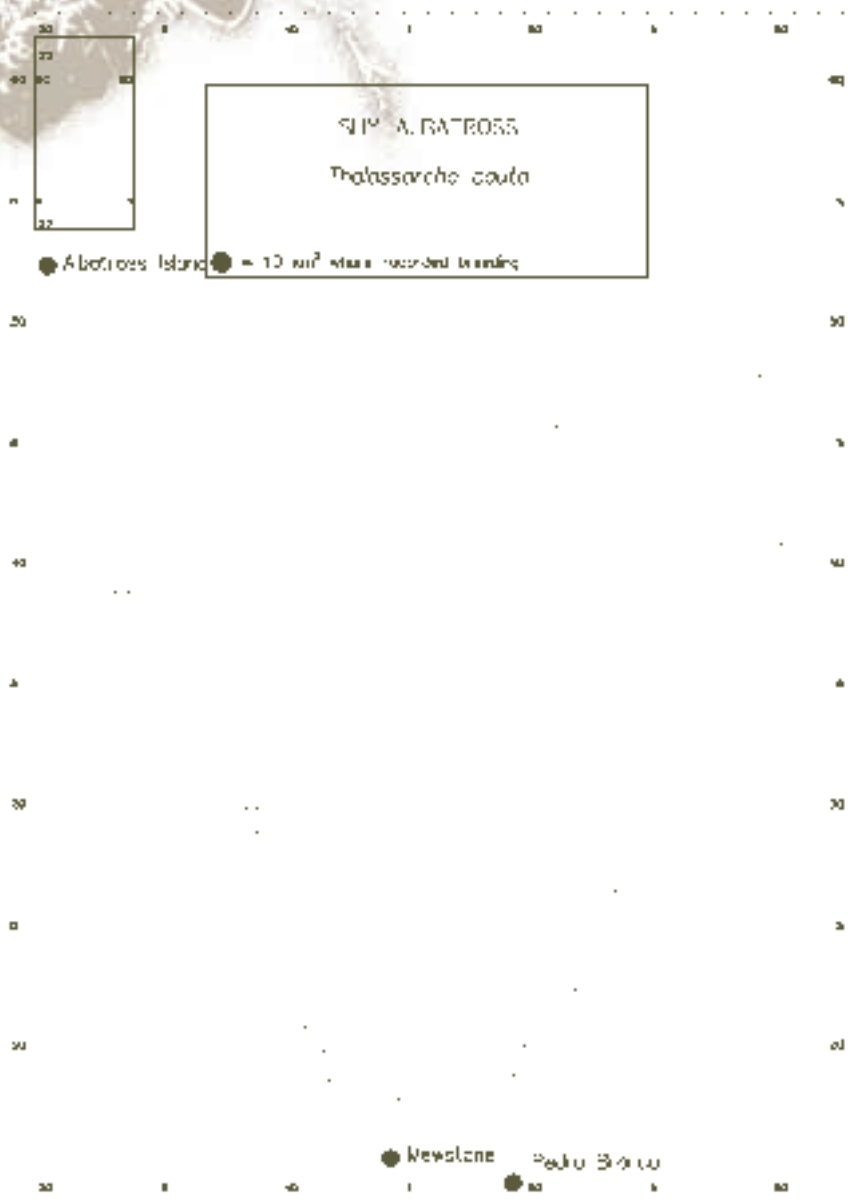
Adventure Bay
Bicheno
Breaksea
Carlton
Currie
Devonport
Emita
Grim
Kelly
Lyme Regis
Patriarchs
Anderson
Bird
Bridport
Cloudy
Cuvier
Dover
Fisher
Hardwicke
Keraudren
Moriarty
Pearshape
Badger
Blackmans Bay
Burnie
Coles Bay
Darlington
Dunalley
Fluted Cape
Hippolyte
Loccota
Palana
Peron
Barretts
Bluff
Calder
Cremorne
De Witt
Eddystone
Great Bay
Kellevie
Low Head
Passage
Port Sorell

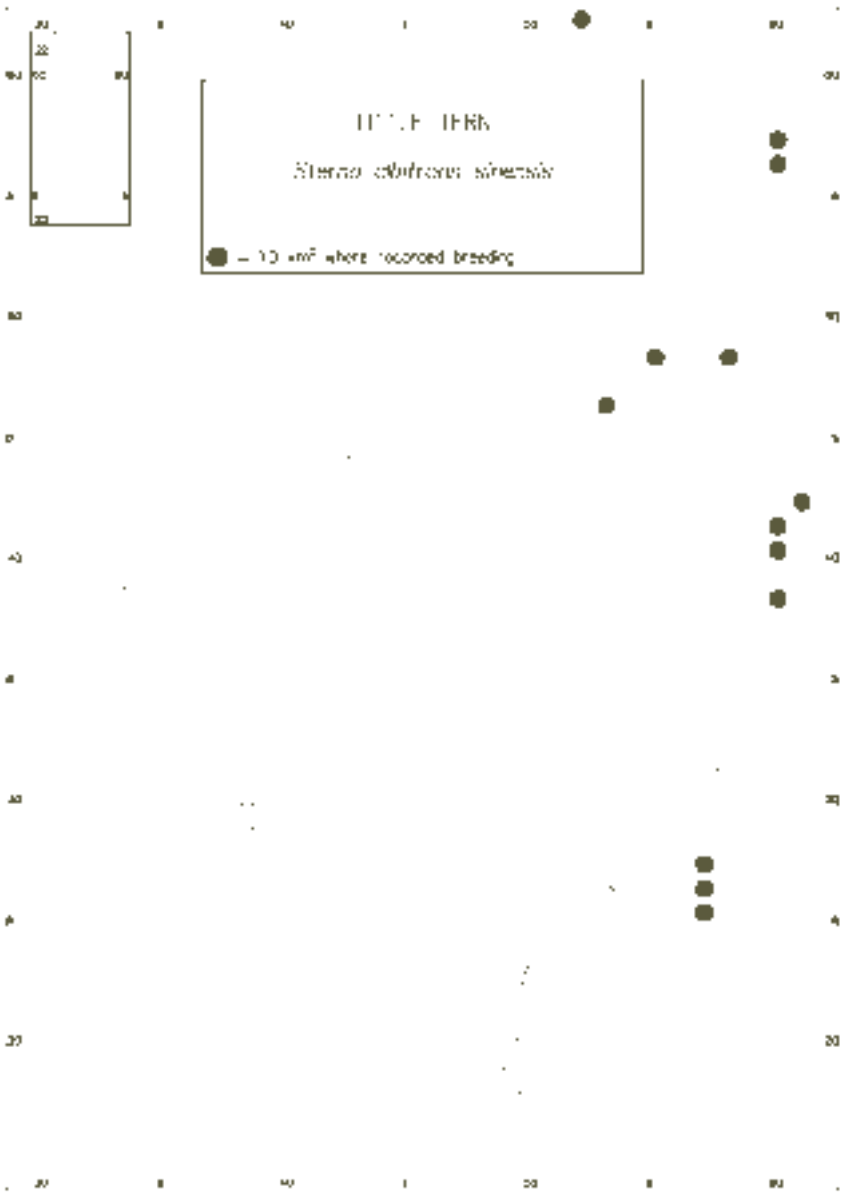
Preservation
Prion
Puncheon
Raoul
Rochon
Rocky Cape
Sea Elephant
Settlement
Sister
St Helens
Stanley
Swansea
Tanner
Tarranna
Taroona
Thirsty
Ulverstone
Walker
Waterhouse
Whitemark
Wybalenna

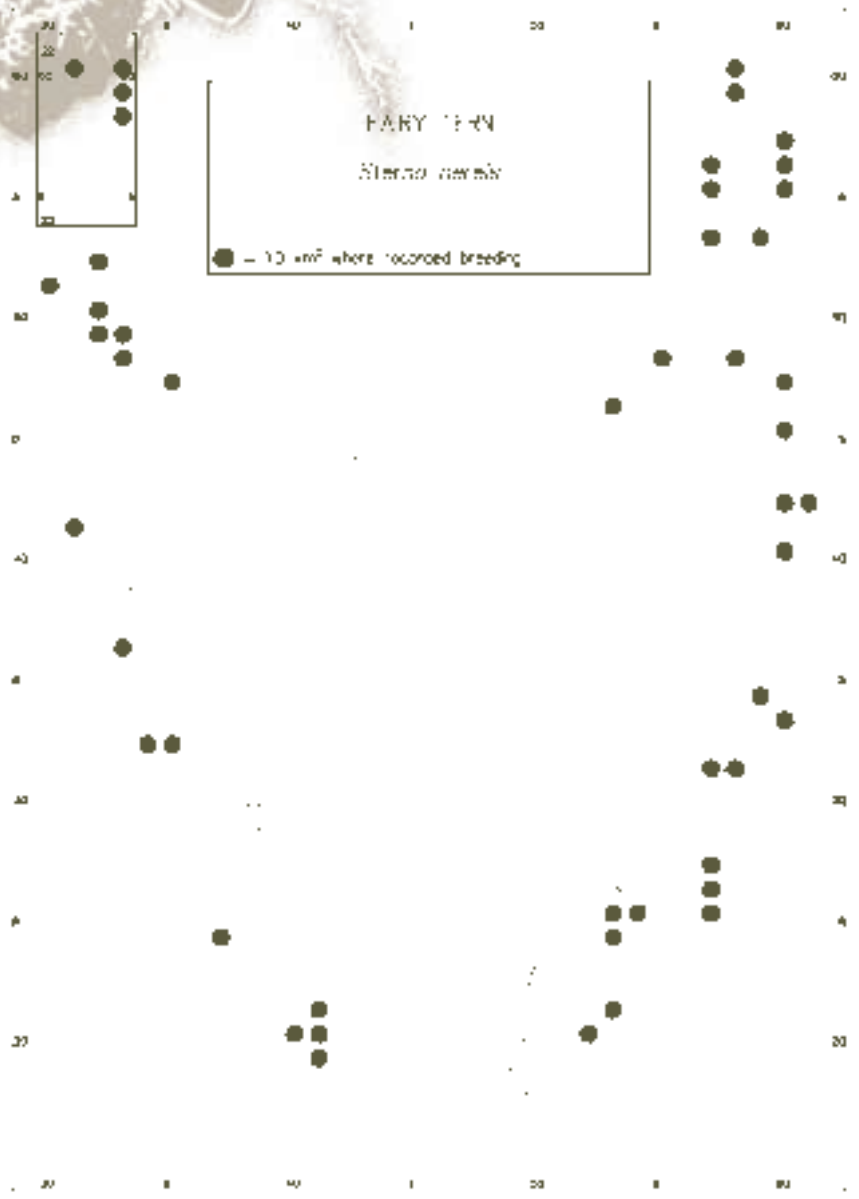
short-tailed shearwater (muttonbird) colonies

Breeding colonies on islands in the Hogan Group, Kent Group, East and West Moncoeur, Rodondo, Curtis, Cone Islet and Devils Tower are listed against mapsheet SISTER.

Adamson
Anderson
Badger
Bellinger
Bird
Blackmans Bay
Breaksea
Bridport
Cameron
Carlton
Cloudy
Coles Bay
Cox
Cremorne
Currie
Cuvier
Darlington
De Witt
Devonport
Dover
Eddystone
Egg Lagoon
Emita
Fisher
Graham
Grassy
Great Bay
Grim
Grindstone
Hilliard
Hippolyte
Kelly
Kenneth Bay
Keraudren
Leprena
Loccota
Lyme Regis
Marrawah
Mayfield
Meerim
Montagu
Montgomery
Murdunna
Naracoopa
New Year
Palana
Partridge
Passage
Patriarchs
Pearshape
Peron
Port Arthur
Port Sorell
Preservation
Prion
Puncheon
Raoul
Recherche
Reekara
Riedle
Robbins
Rochon
Rocky Cape
Schouten
Sea Elephant
Settlement
Seymour
Sister
St Helens
Stanley
Stokes
Swansea
Tanner
Tasman
Thirsty
Trial
Walker
Waterhouse
Whitemark
Wickham
Wybalenna
Wynyard


SHY ALBATROSS
Thalassarche cauta
Albatross Island
Newstone
Pedra Blanca




FAIRY TERN
Sterna nereis
= 10 km² where recorded breeding


WHITE-FRONTED TERN
Sterna striata
= 10 km² where recorded breeding


-OODED PLOVER

SWIFT PARROT

Lathamus discolor (Psittacidae)

[Photo from PWS source library]

Status

Tasmania's *Threatened Species Protection Act 1995* - Vulnerable
Commonwealth *Endangered Species Protection Act 1992* - Endangered

Description

A 'busy', fast-flying green parrot which is seldom still for long. The plumage is bright grass green with red on the forehead, chin, shoulder and under the wings. There is metallic blue on the crown, cheeks and wings. The distinctive alarm call of kik-kik-kik is usually made while flying. Swift parrots can be recognised by their very rapid flight, streamlined body, long tail and flashes of bright red under the wing. They are easily confused, however, with musk lorikeets *Glossopitta concinna* which have very similar plumage and behaviour and overlap in range. The most recognisable difference is the vivid red throat of the swift parrot compared to the red eye band of the musk lorikeet.

Distribution, Habitat and Biology

Swift parrots migrate between Tasmania (breeding range) and the southeast of mainland Australia (wintering range). They arrive in Tasmania in August to September to breed and raise young then return to the mainland around February to March. The migratory route is generally down the east coast of Tasmania with most birds congregating in a narrow coastal band from Binalong Bay in the north to Ida Bay in the south, including Tasman and Forestier Peninsulas, Bruny Island and Maria Island. This narrow coastal band extends no more than five kilometres inland except between Marion Bay and the Sorell area, where it is slightly wider. There are also small northern breeding populations in the Gog Range, possibly at Kelsey Tier near Devonport, and on Mt Montgomery near Penguin.

Swift parrots are unusual in that unlike most other parrots they have a specially adapted tongue to feed on nectar. During the breeding season they target the large flowers and blossom of blue gum *Eucalyptus globulus* although nectar from black gum *E. ovata* is also important. It is this strong link to flowering blue gum which triggers the breeding cycle of the swift parrot and the reason why the species returns each year to Tasmania. Swift parrots feed in forest stands or even single trees in paddocks and often visit urban gardens and parkland during flowering times, sometimes travelling large distances to utilise flowering patches. They are normally seen in pairs or small flocks and chatter noisily while feeding and foraging.

Swift parrots nest in tree hollows, usually on upper slopes and ridges in dry eucalypt forest within 10 km of the coast. Pairs breed once a year and will raise three to four young. At the end of the breeding season the entire population of adult and young begin their migration path travelling up the western half of Tasmania feeding in flowering forest and woodland along the way. The total population of swift parrots is estimated to be approximately 1000 pairs.

Key Sites in Tasmania

All forest and woodland with blue gum *Eucalyptus globulus* and black gum *Eucalyptus ovata* in a 5 to 10 km wide coastal strip between Binalong Bay and Ida Bay, including Tasman and Forestier Peninsulas, Bruny Island and Maria Island.

'Hot spots' include:

- South Bruny Island, especially the Adventure Bay and Cloudy Bay areas
- North Bruny Island, especially the Roberts Hill and Lodge Hill areas
- Kettering to Woodbridge area
- Dunalley, Bangor, Marion Bay
- Rheban, Little Swanport and Kellvedon area
- Port Arthur and Fortescue Bay area
- Port Huon
- Breeding sites in the Gog Range
- Suspected breeding sites at Kelsey Tier near Devonport and on Mt Montgomery near Penguin.

Key Threats in Tasmania

- Clearing of mature blue gum and black gum whether in forest situations or as isolated trees, which reduces the food source and breeding potential of the swift parrot.
- Loss of old growth forest hollows on the east coast needed for breeding.
- Death from collision with windows, fences or other structures in their flight path.

Management Recommendations for Commercial Forestry

- Detailed recommendations are provided to Forest Practices Officers under the Forest Practices Code.

Habitat Management on Private Land

If your property contains blue gum or black gum and is within 10 km of the coast between Binalong Bay and Ida Bay, then:

- Prevent the clearing of mature blue gum or black gum either in large or small stands or even single trees. If clearing is necessary then light selective logging is preferred. If clearing in the core breeding range then aim to protect all grassy blue gum forest and black gum forest (where blue gum or black gum regrowth and mature stems comprise 50% or more of the total stems in the forest patch).
- If clearing is necessary then aim to retain at least 30 to 50% of the blue gum trees in a mixed age structure (including regrowth, mature trees and habitat trees). The trees can be retained as clumps or a combination of individual trees and clumps throughout the area depending on the density of forest cover.
- Retain mature stands as wind-breaks in open paddocks, along fence lines or as habitat clumps across your property.
- Actively manage blue gum and black gum forest and woodland to encourage regeneration by excluding or limiting stock and protecting seedlings.
- If you manage land containing a nest site it is essential to protect known nest trees in undisturbed patches of forest of at least 1 ha in diameter. Where nest trees are close to each other (within 50 m) the site should be protected as a patch with at least a 50 m buffer strip.
- Do not remove old spars or dead trees for firewood as they contain essential nest hollows and refuge sites.
- Reduce fuel loads by cool patchwork burning on an 8 to 14 year interval. It is important to prevent fire destroying the canopy of mature blue gum. Seek advice before burning.
- If blue gum occurs naturally in the area, actively replant blue gum in clumps to provide future habitat.
- Please consider some form of long-term protection of your blue gum habitat, e.g. wildlife sanctuary, management agreement, covenant, etc. Contact the Threatened Species Unit, we may be able to help. A number of forest reserves and wildlife priority areas are in place for this species which may be nearby or on the boundary of your property. These could be extended with your help. Consult the 1: 25 000 map sheet section for site details. Linking properties to form large corridors of native bush and establishing Bushcare or Land for Wildlife networks can help reduce habitat fragmentation.

Ways to Prevent Bird Strikes and Collisions

A set of criteria has been produced to identify ways of preventing birds colliding with man-made structures, such as windows, vehicles, chain-link fences, power lines, power poles, transmission masts, etc. Collisions often result in the immediate death of the bird or the severity of their injuries prevents them being released back into the wild. Collisions are more likely to happen where developments occur across flight paths from roosting or nesting sites to feeding areas. Other high risk collision areas are next to bushland, where birds and problem structures are in close proximity. At least 30 swift parrots per year are killed by collisions with windows, chain-link fences and vehicles. This is a significant number for any species with a low and declining population.

Types of birds at risk from collisions include:

- Waterfowl (e.g. swan, duck, etc.) and seabirds (e.g. shearwaters, petrels, etc.) which fly at night are at greater risk of collision, particularly with towers and power lines.
- Birds of prey like eagles, falcons, hawks, etc. which are fast fliers and use poles and wires for perching.
- Bush birds, especially small passerines like honeyeaters which live in suburbs and the urban fringe, are at risk from collisions with windows, chain-link fences, powerlines and vehicles, etc.

Table: Criteria for reducing bird strikes

Objectives	Acceptable Solutions	Performance Criteria
Developments are not to obstruct flight paths (i.e. between roosting, nesting, feeding or migratory paths), especially if rare and threatened species occur in the area.	*a)* Identify flight paths and movement corridors during the site assessment stage for subdivision and building. *b)* No structures to be sited so they obstruct flight paths and movement corridors.	*a)* The design and operation of any works or structures placed in flight paths or movement corridors are to include measures to prevent bird collisions. *b)* Applicants are to show that bird populations will not be adversely affected.
Developments are to be placed away from all significant habitats.	Buffer development in significant habitats (e.g. threatened species' habitats, bird of prey nest sites, wetlands) to protect wildlife from risks of collisions and disturbance (e.g. pets, lights, noise). The width of the buffer will depend on the species, the habitat and the topography, which will influence the impact of noise and light. Expert advice* should be sought on appropriate buffer designs.	*a)* Design and operation of any works or structures adjacent to significant habitats are to include measures to prevent bird collisions. *b)* Applicants are to show that bird populations will not be adversely affected.
Design of grounds, e.g. parks, ovals, etc. are not to include structures which are transparent to birds.	All types of fencing should be visible to birds. Do not use chain-link fences or horizontal silver wires which are invisible.	If chain-link fencing is used it needs to made visible by using colour coated wire, or covered with shade cloth or similar materials.
Utilities should be sited to prevent bird collisions.	*a)* Roads should be sited away from wetlands or bushland to reduce the risk of collision with vehicles. *b)* Power (and telegraph) lines should be placed underground to prevent bird strikes and electrocution. This also reduces the risk of bushfires, the need for tree trimming and improves the visual amenity. No overhead powerlines to cross bodies of water (dams, ponds, lagoons, rivers, etc.). *c)* Use street lights that spill primarily downwards. Street lights can attract or disorientate birds that move at night (e.g. waterfowl, seabirds) so that they collide with poles or wires.	*a)* If roads do pass through or close to habitats, then use, e.g. speed humps, speed signs, etc. to reduce vehicle speed and the risk of collisions. *b)* If powerlines are erected in high risk areas (e.g. near raptor nests, waterfowl flight paths, threatened species habitats, etc.) aerial bundled cabling (ABC) should be used to reduce the risk from electrocution and collision *c)* If either a) and/or b) are adopted, applicants for use or development are to show that bird populations will not be adversely affected. *d)* Street lighting in developments in coastal areas or near wetlands may cause problems. Applicants for use or development are to show that bird populations will not be adversely affected.
Buildings are to be designed to prevent bird collisions.	No corner windows or sightlines through buildings from window to window. In large glassed areas use low-reflectance glass or install glass at an angle to reflect the ground and not habitat or sky.	If corner windows or windows which have sightlines through the building exist then frosted and low reflectance glass is to be used to make the windows visible to birds.

**Seek advice on critical habitats and buffer zones from Parks and Wildlife Service.*

Other Ways to Help

- If you find any injured or dead swift parrots, please contact the Parks and Wildlife Service immediately. Injured swift parrots can provide important biological information and can be rehabilitated.
- Report dead birds under power lines to the Environment Section of Aurora Energy. Power lines can be redesigned or provided with adaptors to minimise bird strike.
- If you identify a nesting area please inform the Parks and Wildlife Service, as these sites should be protected and more information is always needed.
- Become familiar with the swift parrot and its life history. Information is available from the Threatened Species Unit, Parks and Wildlife Service.
- Learn more about identifying, protecting and enjoying Tasmania's native bird fauna. Contact Birds Tasmania.

More Information

Birds Tasmania, GPO Box 68, Hobart, Tasmania, 7000.

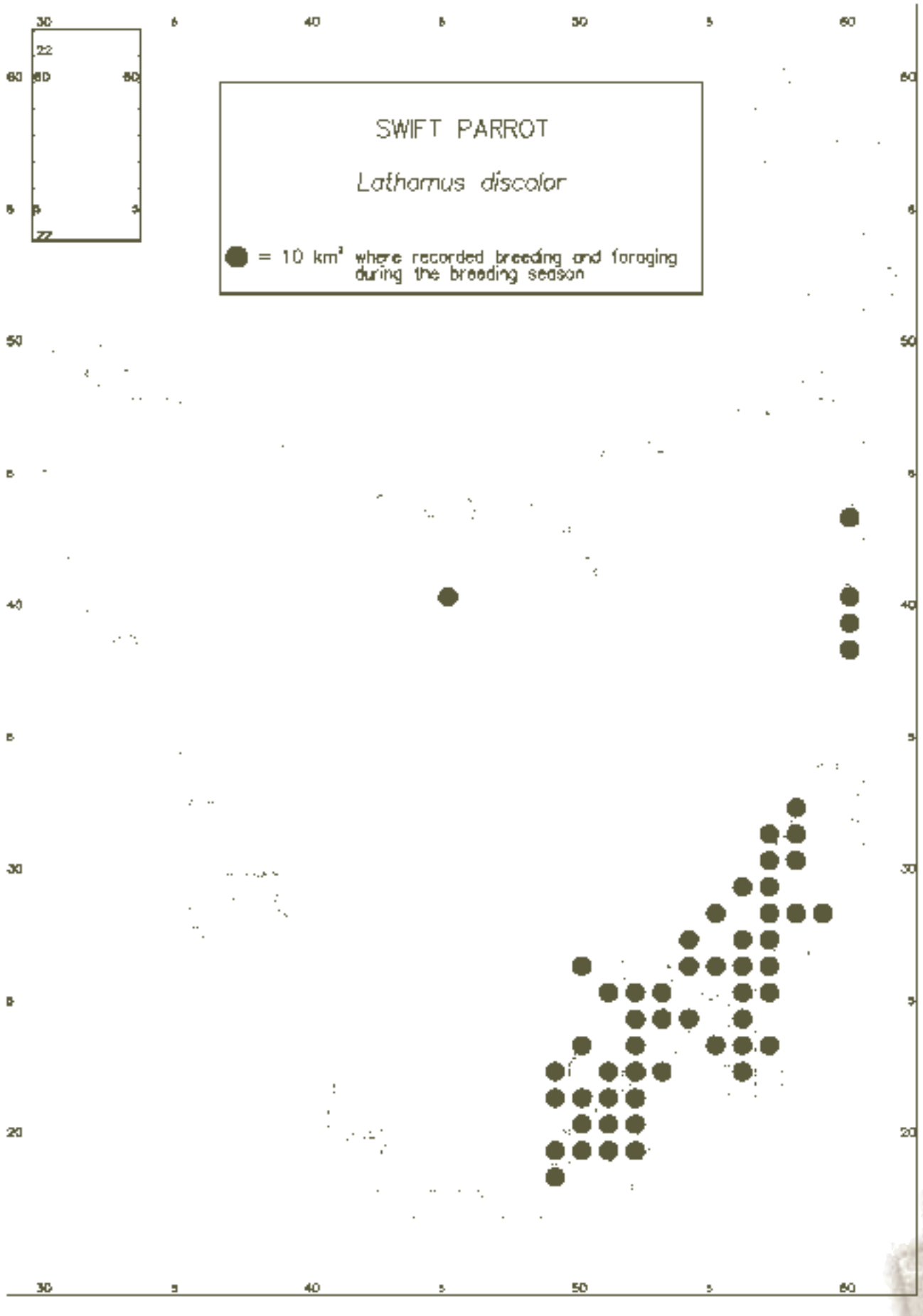
Brereton, R. (1996). The Swift Parrot Recovery Plan 1997-1999. Australian Nature Conservation Agency, Canberra.

Brereton, R. (1997). Management Prescriptions for the Swift Parrot in Production Forests. Report to the Tasmanian RFA Environment and Heritage Technical Committee.

Brown, P. B. (1989). The Swift Parrot *Lathamus discolor*: a report on its ecology, distribution and status, including management considerations. Dept of Lands, Parks and Wildlife, Tasmania.

1: 25 000 TASMAP sheets with known breeding and foraging sites

Adventure Bay
Apslawn
Barnes Bay
Bicheno
Binalong
Blackmans Bay
Boltons (Bougainville)
Boltons (Grindstone)
Broadmarsh
Buckland
Carlton
Cloudy
Collinsvale
Communication
Cranbrook
Cremorne
Cygnet
Darlington
Dover
Dunalley
Fluted Cape
Geeveston
Glen Huon
Gog
Gray (Ironhouse)
Gray (Piccaninny)
Great Bay
Hastings
Henry
Hippolyte
Hobart
Huonville
Kellevie
Leprena
Lisdillon
Lodi
Longley
Lymington
Mayfield
Murdunna
New Norfolk
Orford
Partridge
Port Arthur
Raminea
Raoul
Ravensdale
Recherche
Richmond
Royalty
Runnymede
Sandspit
Scamander (Beaumaris)
Scamander (Falmouth)
Seymour
Sorell
St Helens
Swansea
Taranna
Taroona
Tasman
Tea Tree
Tooms
Triabunna
Waterloo


SWIFT PARROT
Lathamus discolor
= 10 km² where recorded breeding and foraging during the breeding season

ORANGE-BELLIED PARROT

Neophema chrysogaster (Psittacidae)

[Illustration by Kevin Stead]

Status

Tasmania's *Threatened Species Protection Act 1995* - Endangered
Commonwealth *Endangered Species Protection Act 1992* - Endangered

Description

A small grass parrot about 20 cm long including a long tail. Adults have bright green on the back with a pale greenish-yellow face and yellow below. There is a bright orange patch on the lower belly. Wings are duller green to blue but with a vibrant blue edge. Beak and legs are grey black or brown in the juvenile. Females and juveniles are generally duller than adult males and lack the dual blue band on the forehead. When disturbed the bird makes a harsh, rapidly repeated buzzing call. The flight call is a single *tseet* given each time the bird reaches the top of the undulating flight wave.

Adult males of the closely related but more common blue-winged parrot *Neophema chrysostoma* are similar in appearance and are often confused with the orange-bellied parrot. The blue-winged parrot has more olive green upper parts and a larger blue patch on the leading edge of the wing which covers almost half its width. The blue-winged parrot also has an orange-yellow area on its stomach. Its alarm call has a softer tinkling quality compared to the harsh buzzing of the orange-bellied parrot. Occasionally orange-bellied parrots and blue-winged parrots flock together, particularly during migration.

Key distinguishing features of the orange-bellied parrot are its vivid green plumage, which is the brightest and most intense green of all species, the alarm 'buzz' call, and the face and wing pattern.

Distribution, Habitat and Biology

The orange-bellied parrot migrates each year between Tasmania (breeding range) and southeast Australia (wintering range). During the winter months they feed on mainland Australia in coastal areas extending from southeast Victoria to the Coorong in South Australia. Around October each year they begin returning to the southwest of Tasmania in preparation for breeding. They are known to breed only in coastal southwest Tasmania, between Louisa Bay and Macquarie Harbour; this entire breeding range being protected in the Tasmanian World Heritage Area and Southwest Conservation Area.

The orange-bellied parrot nests in tree hollows occurring only on the edge of forests. This breeding habitat can be a mosaic of eucalypt forest and rainforest which occurs in either large or small stands in gullies, along coastal ridges, or scattered copses throughout the buttongrass plains. Orange-bellied parrots tend to pair for life and re-use traditional nest sites. In November up to six eggs are laid and incubated by the female. During this time the male parrot diligently feeds the female and remains close by. After hatching, both parents share feeding of the nestlings until they are fledged about four weeks later. Average life-span in the wild is estimated to be about four years with the highest mortality occurring in first year birds either as they undergo migration or when on the mainland.

During the day, orange-bellied parrots feed in the extensive sedgeland (buttongrass) plains, fossicking on the ground for seeds, buds and fruits of heath and sedge species. They prefer to feed in areas that are burnt regularly (every 3 to 12 years) as this maintains a more open structure and a diverse supply of seed and fruits. They are a social species and are often seen in pairs or small flocks. They may best be identified calling as they travel between the forests and feeding plains at regular intervals. However, they have also been observed on the high dunes and marsupial lawns surrounding beaches fossicking for seed.

By February, adult orange-bellied parrots begin their migration back to the mainland and travel north following the west coast. During migration, birds may stop to feed anywhere along the west and northwest coasts, including the Hunter Island group and on King Island. They forage on saltmarshes, beaches, coastal dunes, heathland and pasture, eating a range of native and exotic seeds, e.g. sea rocket and grasses. On King Island they feed on the extensive saltmarshes, particularly in and near Lavinia Nature Reserve. Juvenile birds also migrate along the same route but leave approximately two to three weeks later than adults.

During the 1830s to early 1900s numerous historical accounts record flocks of orange-bellied parrots numbering many thousands in size. However, today the total population is estimated to be less than 200 birds.

Conservation management for this species includes a range of actions such as the provision of nest boxes, supplementary feeding, controlled burning to maintain habitat and food diversity, and control of cats and starlings. Captive breeding programs

with facilities in Hobart and near Melbourne are used to generate surplus birds for release into the wild population. Each breeding season, an intense monitoring program is conducted at Melaleuca which includes banding newly hatched chicks and daily counts of birds visiting artificial feed tables at the observation facility.

Key Sites in Tasmania

Breeding

- Within a 10 km radius of Melaleuca and Towterer Beach in the southwest.
- Around Birchs Inlet, south of Macquarie Harbour.

Migratory

- King Island, especially Sea Elephant Lagoon and Lavinia Nature Reserve.
- Coastline around Woolnorth, Bluff Hill Point and West Point near Marrawah.
- All the Hunter group, including Perkins Island.

Key Threats in Tasmania

- Loss of west coast migration habitat and food supply through development or damage to saltmarshes and dunes (e.g. by off-road vehicles or stock grazing).
- Change in fire regime in the breeding habitat leading to a loss of food plants.
- Decline in nest hollows through over-firing of forests in the southwest.
- Competition with introduced birds such starlings for nest sites and sparrows and goldfinches for food.
- Predation by cats while feeding.
- Disease outbreaks, particularly psittacosis and psittacine circoviral disease.
- Any changes to or impacts in the Melaleuca vicinity which contains the majority of wild breeding birds.

Habitat Management

- Continued support for recovery actions undertaken in the southwest are required, including control of cats and starlings, provision of nest boxes, supplementary feeding, and controlled regular patchwork burning to maintain habitat diversity.
- Stock should be excluded (fencing or de-stocking) from west coast areas of saltmarsh and dune, particularly from October to March. Stock eat food plants, introduce weeds and degrade sensitive coastal habitats. Community grants assistance may be available to help with costs.
- Vehicles (cars, quad bikes, etc.) should not access saltmarshes, dunes or the upper beach area along the western coastline during October to March. This will also protect coastal nesting birds such as terns and hooded plover.
- Invasive coastal plants such as marram grass *Aminophila arenaria* should be eradicated as they reduce native food plants.
- Burning regimes described in the Melaleuca Fire Management Plan (1997) should be used as a guide to managing sedgeland plains to maximise suitability for the species, particularly in the Macquarie Harbour area. This will also favour ground dwelling sedgeland birds like the ground parrot, southern emu wren, etc.
- Any developments planned for the western coastline or on islands used as foraging sites require detailed environmental impact assessment before proceeding.
- If you manage land along the migration route of the orange-bellied parrot consider some form of long-term protection, e.g. wildlife sanctuary, management agreement, covenant, etc. Linking properties to form large coastal corridors of native habitat and establishing Bushcare or Land for Wildlife networks can help reduce habitat fragmentation.

Other Ways to Help

- Report any sightings of orange-bellied parrots or large flocks of blue-winged parrots (in the west and northwest) to the Parks and Wildlife Service. This is a vast area and new sightings are always possible. Learn how to distinguish between the two closely related species by sight and call.
- There is some possibility that orange-bellied parrots breed north of Macquarie Harbour. If you are travelling in this area, take particular note of this species and its exact location during late November to late January. More information is always needed.
- The Orange-bellied Parrot Recovery Program is ongoing and there may be extra actions you can do to help. Contact the Threatened Species Unit for more information.
- Learn more about identifying, protecting and enjoying Tasmania's native bird fauna. Contact Birds Tasmania.

More Information

Birds Tasmania, GPO Box 68, Hobart, Tasmania, 7000.

Melaleuca-South West Cape Fire Management Plan July 1997. Parks and Wildlife Service, Department of Environment and Land Management.

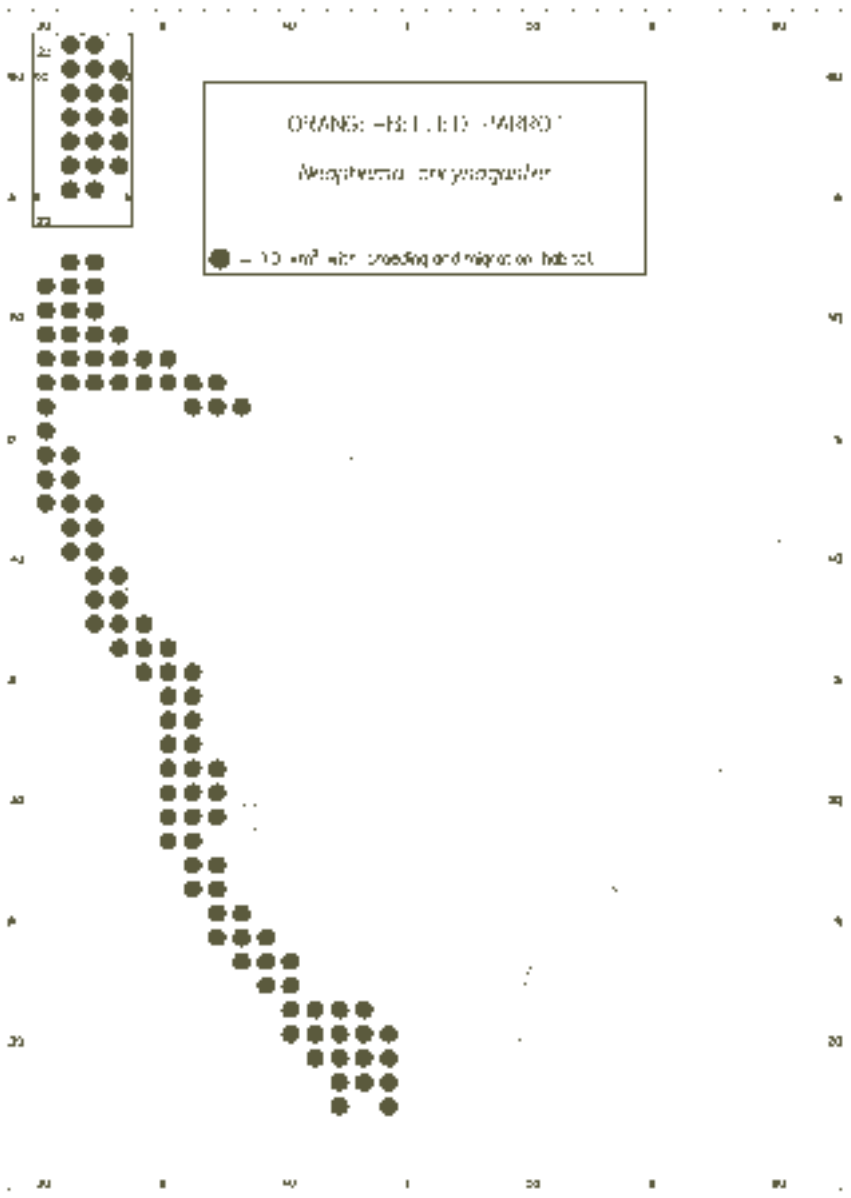
Orange-bellied Parrot Recovery Team (1998). Orange-bellied Parrot Recovery Plan 1998-2002. Parks and Wildlife Service, Hobart.

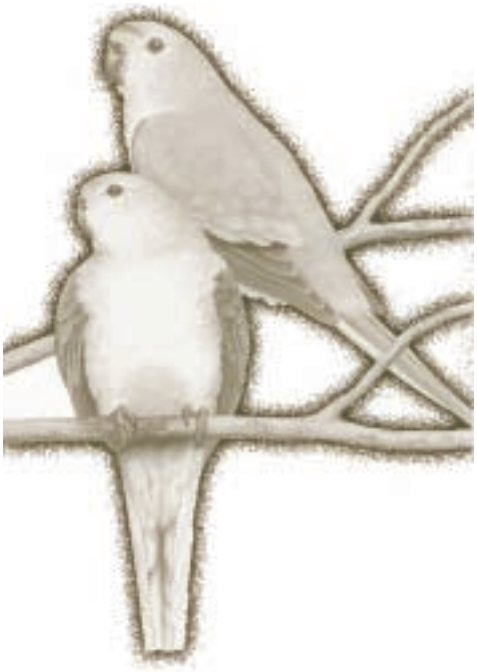
Parks and Wildlife (1994). The orange-bellied parrot. Identification Guide Brochure. Parks and Wildlife Service, Tasmania.

Parks and Wildlife (1997). The orange-bellied parrot. Endangered Species Brochure. Parks and Wildlife Service, Tasmania.

1: 25 000 TASMAP sheets with known breeding and migratory habitat

Adamson	Ahrberg	Albina	Balfour
Birchs	Bird	Bluff	Breaksea
Cameron	Cloudy	Cox	Currie
Cuvier	Davey	De Witt	Egg Lagoon
Elliot	Endeavour	Engineer	Federation
Grassy	Grim	Hardwicke	Heemskirk
Henty (Bellinger)	Henty (Mallanna)	Hibbs	Hilliard
Interview	Kelly	Keraudren	Lagoon
Legge	Lewis	Lily	Limekiln
Loorana	Louisa	Mainwaring	Marrawah
Mawbanna	McCall	Meerim	Melaleuca
Mella	Montagu	Montgomery	Mulcahy
Naracoopa	New Year	Oceana	Olegas
Ordnance	Osmund	Pearshape	Philips
Professor	Propsting	Ray	Reekara
Robbins	Rochon	Rocky Cape	Rugby
Saltwater	Sarah	Sea Elephant	Settlement
Smithton	Stanley	Stokes	Strahan
Stringer	Studland	Sundown	Table Head
Teepookana	Telopea	Temma	Trial
Varna	Venables (Johnsons Bay)	Venables (Kenneth Bay)	Veridian
Walker	Wickham	Wynyard	





KING ISLAND BROWN THORNBILL

Acanthiza pusilla archibaldi (Pardalotidae)

[Illustration of brown thornbill (not KI thornbill) from Wingspan 1994]

Status

Tasmania's *Threatened Species Protection Act 1995* - not listed but considered of high conservation significance
Commonwealth *Endangered Species Protection Act 1992* - Endangered

Description

Little information is available on the physical, morphological and behavioural characteristics of this species as it has seldom been observed. A small bird (typical of thornbills) about 11.7 cm in length and weighing 7.7 grams. Adults have red eyes, a chestnut rump, streaked throat and scalloped pattern on the forehead. The back is olive brown in colour, forehead russet and the tail has a narrow dark band. The King Island subspecies differs from all other members of the brown thornbill *Acanthiza pusilla* group by having a significantly longer bill, i.e. 16.2 mm compared to 11 to 13 mm for other species. It differs from the closely related Tasmanian thornbill *Acanthiza ewingii* by not having a white rump. Probably very difficult to distinguish in the field.

Distribution, Habitat and Biology

The King Island brown thornbill is endemic to King Island. It is a subspecies of the brown thornbill which is common and widespread throughout Tasmania and mainland Australia. The brown thornbill does not occur on King Island but has been replaced by this subspecies. The Tasmanian thornbill, however, a very closely related and similar thornbill species, is endemic to Tasmania and is widespread including on offshore islands. The Tasmanian thornbill is also common across King Island and it is likely that there is much confusion between identifying the Tasmanian thornbill and King Island brown thornbill.

Only a few specimens of the King Island brown thornbill have ever been collected. Four specimens were collected by A. G. Campbell in 1902 and lodged with the National Museum of Victoria. In 1968 Bob Green collected a single specimen from the Pegarah Forest Reserve which he netted in dense mixed dry scrub in association with a large population of Tasmanian thornbill. In 1971 two birds were mist netted in a garden at Loorana. The species is likely to occupy dry eucalypt forest, woodland and teatree thickets on King Island, moving about in the lower and middle levels of woodland and forest feeding on insects or occasionally on the ground. Breeding is thought to occur from September to December. A small dome-shaped nest is made of dry grass and shredded bark in low shrubs, grass tussocks or hanging foliage. Three to four white eggs finely spotted with reddish-brown are laid.

Key Sites

- Endemic to forest, woodland and teatree thickets on King Island.
- Known collecting sites in recent times include Pegarah Forest Reserve and Loorana.

Key Threats

- Degradation, including clearing, over burning or draining of native vegetation, especially teatree thickets and scrub.
- Insufficient information to identify appropriate management needs.

Habitat Management

- Retain existing native vegetation on King Island, especially woodland and teatree thickets. If you manage land containing suitable habitat consider some form of long-term protection, e.g. wildlife sanctuary, management agreement, covenant, etc. Linking properties to form large corridors of native bush and establishing Bushcare or Land for Wildlife networks can help reduce habitat fragmentation.
- Prevent the draining of swamp thickets or degradation through trampling by livestock or over-firing.
- Rehabilitate cleared areas with locally native trees and understorey species, especially to link existing areas to form large corridors.

Other Ways to Help

- More information is urgently required on this species, including current distribution and life history. If you can help in any way please contact the Threatened Species Unit.

- Domestic and feral cats will prey on adults and chicks in nests near the ground. Restrain domestic cats and actively trap and humanely destroy any feral cats in your area to prevent them killing thornbills and other native wildlife.
- Learn more about identifying, protecting and enjoying Tasmania's native bird fauna. Contact Birds Tasmania.

More Information

Birds Tasmania, GPO Box 68, Hobart, Tasmania, 7000.

Blakers, M., Davies. S. J. J. F. and Reilly, P. N. (1984). The Atlas of Australian Birds. RAOU. Melbourne University Press, Melbourne.

Boles, W. E. (1983). A taxonomic revision of the brown thornbill *Acanthiza pusilla* (Shaw) 1790 with description of a new sub-species. EMU 83: 51-58.

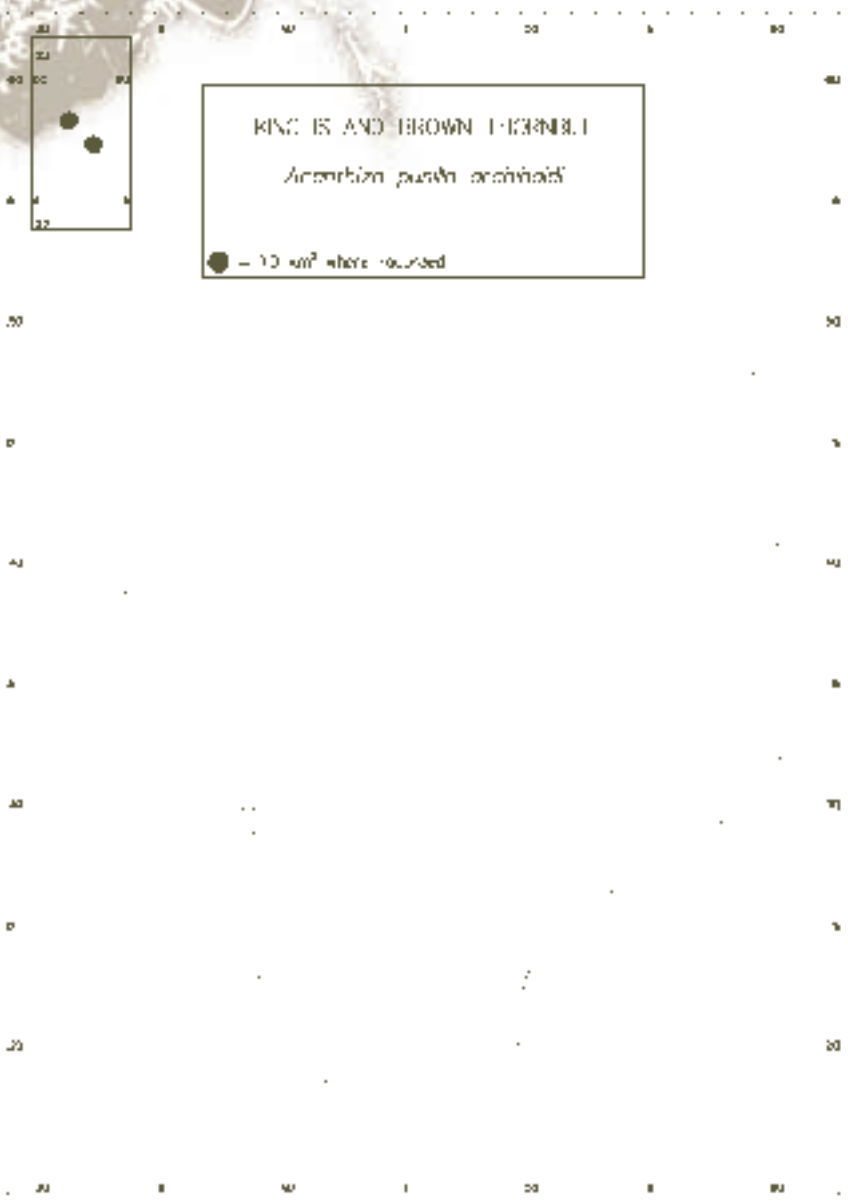
Green, R. H. (1995). The Fauna of Tasmania: Birds. Potoroo Publishing, Launceston.

Green, R. H. and McGarvie, A. M. (1971). The Birds of King Island with reference to other western Bass Strait islands with annotated lists of the vertebrate fauna. Records Queen Victoria Museum 40: 1-35.

McCarvie, A. M and Templeton, M. T. (1974). Additions to the birds of King Island, Bass Strait. EMU 74:91-96.

1: 25 000 TASMAP sheets with known localities and potential habitat

Currie	Egg Lagoon	Grassy	Loorana	Naracoopa
New Year	Pearshape	Reekara	Saltwater	
Sea Elephant	Stokes	Wickham		


KING ISLAND BROWN THORNBILL
Acanthiza pusilla archibaldi

FORTY-SPOTTED PARDALOTE

Pardalotus quadragintus (Pardalotidae)

[Photo by Bill Wakefield, maps of colonies from Bryant 1992]

Status

Tasmania's *Threatened Species Protection Act 1995* - Endangered
Commonwealth *Endangered Species Protection Act 1992* - Endangered

Description

A tiny, compact bird up to 10 cm long with a stout beak and short, square tail. Colouring is dull olive-green on the back, grey on the front with pale yellow on the cheek and rump. There are no bright or dull tones of red, brown or chestnut anywhere on the body. The wings are jet black with distinctive rows of white dots and the head has no distinct markings other than a very faint olive scalloping. Forty-spotted pardalotes have a soft *where...where...* call and are active either singly or in pairs high in the canopy of white gums. This species is very easily confused with two more common and widespread species of pardalote, the spotted pardalote and striated pardalote. Juvenile spotted and striated pardalotes also lack any head markings and spotted pardalotes have almost identical rows of spots along the wing.

Distribution, Habitat and Biology

The forty-spotted pardalote is endemic to Tasmania and intrinsically linked to one type of eucalypt, white gum *Eucalyptus viminalis*. The population is naturally restricted to dry grassy forest and woodland along the east coast of Tasmania, occurring on headlands, peninsulas and nearby islands. Main breeding areas are Flinders Island, Maria Island, Bruny Island, Howden and Tinderbox Peninsula with small colonies also on the Taroona Hills and at Coningham. A colony also existed at Lime Bay on the Tasman Peninsula but this has not been sighted since the late 1980s.

Forty-spotted pardalotes are found only in forests and woodland containing white gum. White gum is best identified by its rough bark collar at the base, smooth white and grey streaked trunk extending to the branches, and slender 10 to 20 cm long tapering leaves. The flowers and gum nuts are found in groups of three and the capsules have strongly defined valves. White gum woodland is one of the most extensive vegetation types in the drier parts of the State and is usually found on well-drained dolerite slopes. It usually has a grassy understorey and often occurs upslope from cabbage gum woodland on relatively fertile soils in dry areas. More than half of the original area of white gum woodland and forest has been cleared or severely degraded and only a small part of its existing area is in secure reserves. White gum has suffered most from the recent tree dieback phenomenon, possibly because they occur on some of the driest sites occupied by eucalypts in the State.

Forty-spotted pardalotes feed among eucalypt foliage on small insects and manna (a sugary substance produced on branches and twigs). Over time colonies form around the white gum and pairs become sedentary and territorial. Forty-spotted pardalotes can be identified in the same territory at any time of the year. Pairs construct a bark nest in tree hollows or cavities in branches, tree trunks, dead stumps, fence posts or other fallen wood. The breeding season starts around September and four to five chicks are raised each year. Pairs are strongly territorial around the nest site.

Tasmania has two other very similar species of pardalote, the spotted pardalote *P. punctatus* and striated pardalote *P. striatus*. Both these species are common and widespread across the State and are found breeding in many habitat types in rural areas and around towns and cities. They have a similar behaviour pattern to the forty-spotted pardalote though are not linked to white gum. The striated pardalote nests in cavities in trees, wall crevices or banks, etc. while the spotted pardalote, sometimes called the 'bank diamond', excavates holes in banks or soft soil to rear its young. The spotted and striated pardalote have brighter markings, including vivid yellows, browns and reds, and are often seen in the open or heard calling loudly and repeatedly.

Key Sites

Site locations for the midpoint of all colonies are listed in Section 1 (see also TASMAP cross reference below). Boundary maps of colonies are available from the Threatened Species Unit.

- All known colonies on Maria Island, Bruny Island, Tinderbox Peninsula, Howden (Peter Murrell Reserve), Coningham and Taroona.
- Known colonies on Flinders Island are at Broughams Sugarloaf and Walkers Gully but potential sites occur in other grassy dry forest and woodland containing mature white gum surrounding these areas. Historical site at Bob Smiths Gully.

- Dennes Hill State Reserve on Bruny Island contains the largest breeding colony. Other priority colonies on Bruny Island include Roberts Hill, Waterview Hill, Lodge Hill, McCrackens Gully, Pybus Hill, 'Inala' at Cloudy Bay.
- All potential habitat surrounding any of the above sites for up to a 3 km radius from the coast.

Table: Location and number of forty-spotted pardalote colonies in 1997

Location	No. of Colonies	Total Area (ha)	1997 Pop. Estimate (no of birds)
Maria Island - north, south and isthmus	23	2030 ha	1687
Bruny Island - north, south and neck	76	1622 ha	1920
Tinderbox - tip and gullies on peninsula	12	108 ha	137
Coningham - reserve and coastline	2	8 ha	0 (not found)
Flinders Island - Broughams and Walkers Gully	3	300 ha	70
Taroona Hills - specific to a few gullies	1	2 ha	6
Coffee Creek line - Peter Murrell Reserve	2 or more	10 ha or more	20
Lime Bay - reserve head and coastline	4	27 ha	0 (not found)
Total	*~ 122*	*~ 4107 ha*	*~ 3840 birds*

Key Threats

- Any removal of mature white gum (large or small stands and even single trees) or disturbance to other trees in or near colonies.
- Loss of mature white gum throughout the species range, particularly in areas close to known colonies.
- Loss of nest hollows through felling mature timber and firewood collection.
- The misconception that felling mature white gums in key areas can be compensated for by planting seedlings.
- Potential competition and displacement by aggressive birds like kookaburra and noisy miner moving into disturbed areas.

Management Recommendations for Commercial Forestry

- Detailed recommendations are provided to Forest Practices Officers under the Forest Practices Code.

Management In and Near Known Colonies

If your property contains forty-spotted pardalotes or is near a known colony then:

- Prevent the clearance of any mature white gum, either in stands, windbreaks or even single trees. Mature habitat is limited in all known colonies and its loss will cause local extinction of this species.
- Retain mature white gum wherever it occurs, e.g. as wind-breaks, along fence lines, or as habitat clumps across your property.
- Actively manage white gum woodland to encourage regeneration by limiting stock and protecting seedlings.
- Reduce fuel loads by cool, winter, patchwork burning on an 10 to 14 year rotation interval. It is essential to prevent fire reaching the canopy of mature white gum. Likewise prevent firing more frequently than 10 to 14 years as this will lead to habitat degradation favouring more aggressive birds (e.g. noisy miners). Seek advice before burning.
- Control the collection and cutting of firewood in or near colonies. Fallen limbs and logs with cavities are essential for nesting and take many years (50 to 80 yrs) to form.
- If you manage land containing a colony of forty-spotted pardalotes, please consider establishing a wildlife sanctuary or placing a covenant on the white gum in and around colonies for its long-term protection. This could increase the value of your property for conservation purposes. A number of forestry wildlife priority areas are in place for this species which may be nearby or on the boundary of your property. These could be extended with your help. Consult the 1: 25 000 map sheets Adventure Bay and Fluted Cape. Linking properties to form large corridors of native bush and establishing Bushcare or Land for Wildlife networks can help reduce habitat fragmentation.
- If white gum occurs naturally in the area, actively replant white gum in clumps wherever possible to provide future habitat. Seedlings are provided free for this purpose (contact the Threatened Species Unit for details).
- All grassy dry forest and woodland containing white gum within a 3 km radius of a known colony should not be cleared prior to advice from the Threatened Species Unit. It may require a survey as this habitat represents the most likely for future expansion of the species.
- All grassy dry forest containing white gum on Flinders Island potentially contains forty-spotted pardalotes and should be surveyed prior to any clearing. Please contact the Threatened Species Unit for advice.

Other Ways to Help

- Cats will prey on adults and chicks in nests near the ground. Prohibit or restrain cats from all areas in or near pardalote colonies. This will help protect other native wildlife as well.
- If you manage land with white gum in key areas, using binoculars and a field guide identify the pardalotes in your trees. Three species could be present. Care is needed to distinguish between adult and juvenile spotted and striated pardalotes. The best time is early in the breeding season from August to October before chicks emerge.
- Learn more about identifying, protecting and enjoying Tasmania's native bird fauna. Contact Birds Tasmania.

More Information

Birds Tasmania, GPO Box 68, Hobart, Tasmania, 7000.

Brereton, R., Bryant, S. L. and Rowell, M. (1997). Habitat modelling of the forty-spotted pardalote and recommendations for management. Report to the Tasmanian RFA Environment and Heritage Technical Committee.

Bryant, S. L. (1992). Longterm survival of the Forty-spotted Pardalote on Bruny Island. WWF Final Report. Project No. 157. Parks, Wildlife and Heritage, Tasmania.

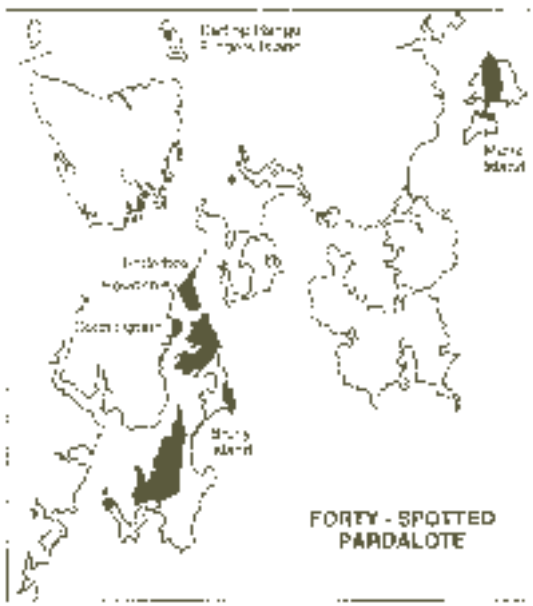
Bryant, S. L. (1997). Status of colonies of the forty-spotted pardalote. Tasmanian Bird Report 26: 45-51.

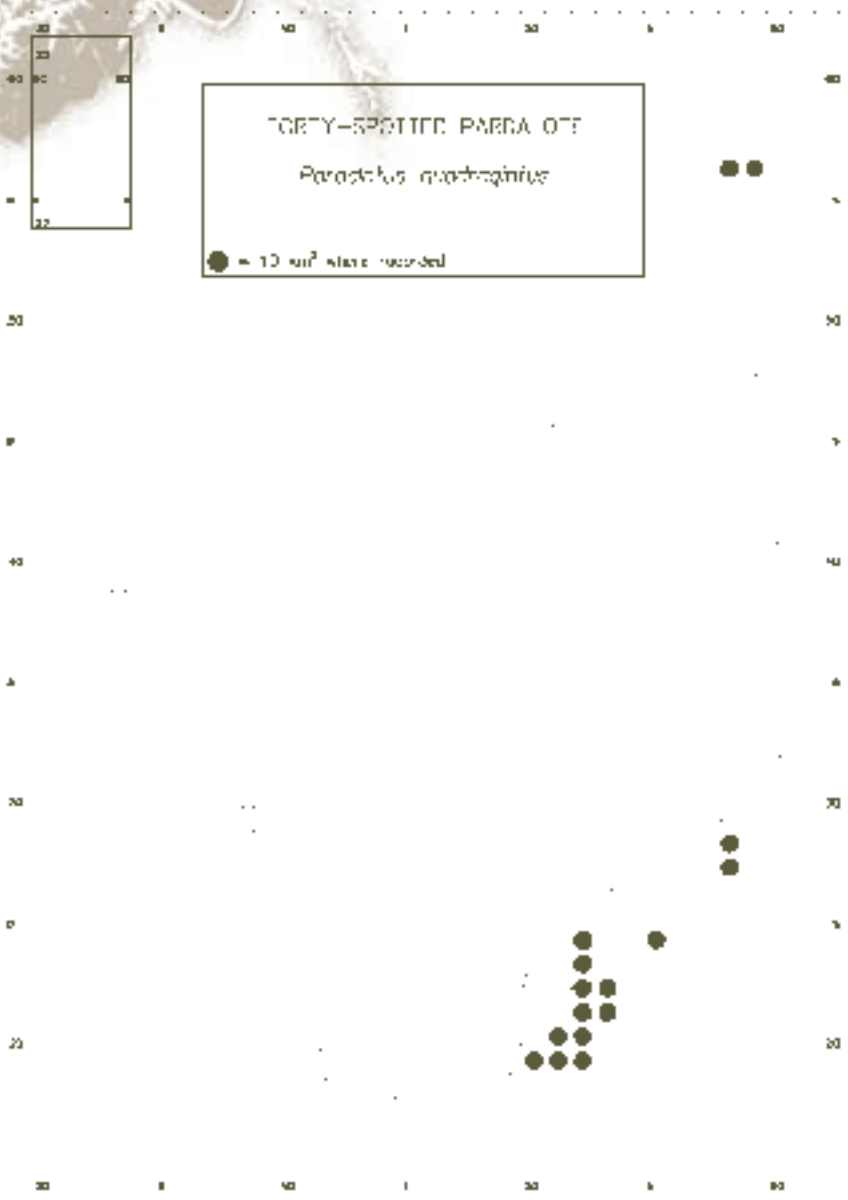
Bryant, S. L. (1998). Little Bird in a Big Package. Wingspan 8(3): 12 - 15.

Threatened Species Unit (1999). Listing Statement: Forty-spotted pardalote *Pardalotus quadragintus*. Parks and Wildlife Service, Tasmania.

1: 25 000 TASMAP sheets with known colonies and potential habitat

Adventure Bay	Arthurs	Barnes Bay	Bicheno
Blackmans Bay	Boltons (Bougainville)	Boltons (Grindstone)	Carlton
Cloudy	Coles Bay	Communication	Cranbrook
Cremorne	Cygnet	Darlington	Dover
Dunalley	Fisher	Fluted Cape	Friendly
Great Bay	Hastings	Hippolyte	Hobart
Kellevie	Leventhorpe	Lisdillon	Loccota
Lodi	Logan	Lymington	Mayfield
Murdunna	New Norfolk	Orford	Partridge
Peron	Port Arthur	Raminea	Raoul
Ravensdale	Riedle	Sandspit	Sorell
Swansea	Taranna	Taroona	Tasman
Triabunna	Waterloo	Whitemark	




FORTY-SPOTTED PARDALOTE
Pardalotus quadragintus

MARINE TURTLES (4 species)

Loggerhead turtle - *Caretta caretta* (Cheloniidae)
Green turtle - *Chelonia mydas* (Cheloniidae)
Hawksbill turtle - *Eretmochelys imbricata* (Cheloniidae)
Leatherback turtle - *Dermochelys coriacea* (Dermochelyidae)

[Illustrations from ESU 1995]

Status

Loggerhead turtle

Tasmania's *Threatened Species Protection Act 1995* - Endangered
Commonwealth *Endangered Species Protection Act 1992* - Endangered

Green turtle

Tasmania's *Threatened Species Protection Act 1995* - Vulnerable
Commonwealth *Endangered Species Protection Act 1992* - Vulnerable

Hawksbill turtle

Tasmania's *Threatened Species Protection Act 1995* - Vulnerable
Commonwealth *Endangered Species Protection Act 1992* - Vulnerable

Leatherback turtle

Tasmania's *Threatened Species Protection Act 1995* - Vulnerable
Commonwealth *Endangered Species Protection Act 1992* - Vulnerable

Description

Marine turtles are characterised by their large, ovoid horny shell covering most of the body. They have paddle-like flippers adapted for swimming and beak-like mouths used to crush or spear food. They can dive for long periods of time but must come to the surface to breathe air. Loggerhead turtles grow to an average of one metre in length and reach sexual maturity around 30 years of age. Their shells are red-brown to brown in colour. Green turtles are mottled dark brown, olive and black dorsally, and cream ventrally. They grow to about a metre in size and reach sexual maturity at age 50 years. Hawksbill turtle shells have a series of amber overlapping plates with dark streaks and reach an average length of 80 cm. Leatherback turtles are the largest of the marine turtles with shells averaging 160 cm in length and weighing up to 500 or even 1000 kg. Leatherback turtles are easily identified by their humped leathery shell containing five distinct parallel longitudinal ridges. The shell is black with white-blue spotting or blotches over the body and flippers.

Distribution, Habitat and Biology

Marine turtles, like whales and pelagic seabirds, are species of international significance due to their large ranges. These four species have large Indo-Pacific ranges with some like the loggerhead and green turtles migrating up to 3000 kilometres between feeding and breeding areas. Loggerhead turtles occur world-wide inhabiting tropical and temperate waters such as coral reefs, bays and estuaries. They migrate from their feeding grounds in Indonesia, the Northern Territory, New South Wales and Queensland to nest along eastern and western Australian coastlines. Green turtles occur world-wide in tropical and sub-tropical waters where they inhabit seagrass beds and seaweed rich coral reefs. Feeding waters are mainly throughout Indonesia, Papua New Guinea, Fiji, New Caledonia and parts of northern Australia. Green turtles breed in southern and northern Great Barrier Reef, Gulf of Carpentaria, Western Australia, Coral Sea and Ashmore Reef. Hawksbill turtles occur world-wide in tropical and warm temperate waters. Movement is between the feeding grounds in Indonesia, Papua New Guinea, New South Wales, Northern Territory, Queensland and Western Australia to the breeding grounds along the coastline of Western Australia, Northern Territory and north Queensland. Leathery turtles have a global distribution, nesting in tropical areas and feeding in temperate seas. They are not known to have major nest sites in Australia but regularly feed in our waters.

Marine turtles are only occasional visitors to Tasmanian waters and they do not breed here. Of the four species, the leatherback is by far the most frequently and regularly occurring with several sightings each year. Leatherback turtles have been recorded on all Tasmanian coastlines with the most sightings being in February and March each year.

Loggerhead turtles feed mostly on benthic gastropods and bivalve molluscs, crabs and echinoderms but will also eat jellyfish and some other microplankton. Hawksbill turtles use their parrot-like beak to feed on sponges, seagrasses, algae, soft coral, shellfish, sea squirts and molluscs in coral and rocky reefs. Adult green turtles feed on seaweeds and seagrasses but when immature eat jellyfish, small molluscs, crustaceans and sponges. Leatherback turtles feed mainly on jellyfish and soft bodied invertebrates.

Marine turtle courtship and mating take place in shallow waters near the nesting beaches with males returning to the feeding grounds soon afterwards. During the breeding season, female turtles come onto traditional beaches to lay and bury their eggs in a chamber carefully dug in the sand. Most species can lay over 100 eggs per clutch and up to six or seven clutches in a breeding season. Hatchlings resemble miniature adults and emerge seven to eight weeks later. They immediately enter the sea to drift with oceanic currents and only a small proportion survive to ever reach maturity. Hawksbill turtles breed annually whereas females of other species may only breed every five to six years.

The decline of marine turtles world-wide has been attributed to them being harvesting for food (meat and eggs) (culturally and commercially) and the trade in turtle shells. Within Australian waters disturbances to nesting beaches and entanglement are also key threats. Loggerhead turtles, for example, have declined by 50 to 80% of their annual nesting population in ten years. Ingestion of plastics and entanglement in ropes (e.g. plastic bags or net buoys resembling jelly fish) are a prime source of mortality. In Tasmania the main cause of leatherback turtle mortality is entanglement in rock lobster pot float lines. Entanglements have been recorded in Bass Strait around King Island and Flinders Island and on the east coast as far south as Maatsuyker Island. Entanglements are most common in February and March but may occur at any time. Details of sighting and entanglement locations are provided in Section I.

Key Sites (do not breed on Tasmanian beaches)

- Periodically around the Tasmanian coastline.
- Leatherback turtles are most frequently reported swimming and entangled.
  - around King Island, especially west of Currie.
  - east and northeast of St Helens to Eddystone Pt.
  - off top end of Maria Island.

Key Threats (not related to breeding activities)

- Entanglement in fishing nets, ropes, buoy lines and other marine equipment, especially related to the rock lobster fishery.
- Incidental bycatch from the trawl fishery.
- Ingestion of marine debris, plastics, etc.
- Lack of information, especially on movement and origin.

Management Recommendations and Other Ways to Help

- Check lobster pots, longlines and nets frequently, at least daily. Any freshly entangled live turtles should be released safely and set free. Turtles tend to become entangled at night. Some Australian States use turtle excluder devices (TEDs) for trawling and other fish netting activities which allow large animals such as turtles to escape from trawl nets without being drowned.
- Advice can be given on the most effective method of releasing live turtles entangled in nets or lines. Contact the Marine Unit of the Parks and Wildlife Service.
- Satellite tracking of disentangled turtles in Tasmanian waters would help to identify migration routes and origins of non-nesting species within and outside Australia. Any assistance with funding for this action would be of significant conservation benefit.

Reporting Sightings

- Report any sightings of marine turtles (alive or dead) to the Parks and Wildlife Service. Information on occurrence, distribution and mortality is being collated. The information needed is:
  - date, time, location (latitude and longitude if possible)
  - current flow and or direction the animal was swimming
  - condition of the animal, e.g. dead for how long, exhausted or alive
  - species and or any identifying features, e.g. shell type, colour, size, scars, etc. which could help with identifying species if unknown
  - any entanglement details, e.g. entangled in what, where the body was caught and the fate of the animal, e.g. released alive, etc.
  - your name and contact details

- Valuable research material can be collected from any dead turtles, e.g. tissue for genetic studies, gut contents for diet, breeding information, etc. Please report all sightings quickly.

More Information

Bone, C (1998). Preliminary investigation into Leatherback turtle *Dermochelys coriacea* (L.) distribution, abundance and interactions with fisheries in Tasmanian waters. Report to Environment Australia, Parks and Wildlife Service, Tasmania.

Cogger, H., Cameron, E., Sadlier, R. and Eggler, P. 1993. The Action Plan for Australian Reptiles. Australian Nature Conservation Agency, Canberra.

ESU (1995). Marine turtles in Australia. Notesheet. Endangered Species Unit, GPO Box 636, Canberra, ACT.

Wildlife Management Section (1998). Draft recovery plan for marine turtles in Australia. Marine Turtle Recovery Team for Environment Australia, Canberra, ACT.

TASMAP sheet with known localities for leatherback turtle entanglements

Marine turtles are oceanic species and do not breed along the Tasmanian coastline. The locations of leatherback turtle sightings, entanglements and beach-washed specimens recorded between 1889 to 1998 from Bone (1998) are listed in Section I. Most records are well out to sea so they have been associated with the nearest mapsheets:

Ansons	Bicheno	Binalong	Bridport
Burnie	Cloudy	Cremorne	Currie
Davey	De Witt	Eddystone	Falmouth
Friendly	Greens Beach	Grindstone	Hibbs
Hippolyte	Ironhouse	Kelly	Kenneth
Loorana	Lyme Regis	Marrawah	New Year
Palana	Pearshape	Port Arthur	Riedle
Rochon	Schouten	Stanley	St Helens
Stokes	Taranna	Tasman	Thirsty
Wybalena	Wynyard		

PEDRA BRANCA SKINK

Niveoscincus palfreymani (Scincidae)

[Illustration by Karen Richards]

Status

Tasmania's *Threatened Species Protection Act 1995* - Vulnerable
Commonwealth *Endangered Species Protection Act 1992* - Vulnerable

Description

The Pedra Branca skinks appears typical of most skinks, having long slender toes and a tail slightly longer than the body length. Adults measure about 6 to 10 cm in body length and weigh about 14 g. Gravid females can weigh up to 22 g with a mean snout-vent length of 98 mm. Adult colour is charcoal grey or glossy black with gold to pale pink flecks and a pale stripe on the back. Juveniles are lighter in colour but darken when mature.

Distribution, Habitat and Biology

Pedra Branca skink live only on the rocky island of Pedra Branca which is situated 26 km off the southeast coast of Tasmania within the Tasmanian Wilderness World Heritage Area. The island has been separated from mainland Tasmania for at least 15000 years, possibly much longer. The island of Pedra Branca rises 55 m above sea level and is 2.5 ha in area, of which approximately only 0.2 ha contains suitable habitat for the skink. Pedra Branca skinks live in six separate colonies where deep crevices and cracks in the weathering rock provide essential shelter from wind, salt spray and waves. The colonies differ in size and formation but all provide a maze of crevices and burrows. Adult skinks fiercely defend their burrows against intruders.

The environment of Pedra Branca is hostile and therefore the skinks only emerge to bask and feed when it is warm and temperatures have risen above 15 degrees celcius. The species is termed a 'shuttling heliotherm' because when basking they constantly shift their body position to maximise the sun's rays. Their diet consists mainly of small invertebrates like insects, spiders and isopods but interestingly they have also evolved to scavenge fish scraps, mainly jack mackerel *Trachurus declivis*, from around albatross and gannet colonies. This latter food source is available on a seasonal basis when the seabirds are feeding young.

Pedra Branca skink breed around February to April. They, like most Tasmanian reptiles, bear live young rather than laying eggs, which is an adaptation to cold climatic conditions that are not suitable for egg incubation. Pedra Branca skink mature at around 6 to 8 years of age and can live for at least 10 and possibly up to 15 years.

In 1985 the population was estimated at 564 but in 1996 it had decreased to around 290 individuals. This dramatic and significant decrease was due to the influx and shift of silver gulls on to the island and their predation of skinks as they emerged to bask.

Key Site

- Only known to be on Pedra Branca Island.

Key Threats

- Influx of silver gulls nesting on the island which predate on skink. This has possibly resulted from a change to tip (council refuse areas) activities in southern Tasmania.
- Loss of food source through a decline in seabird colonies.
- Loss of habitat due to unseasonal increases in wind and sea erosion.
- Potential introduction of predators such as rats from visiting boats.
- Climatic change resulting in sea level rise or unnaturally prolonged bad weather.

Management Recommendations and Other Ways to Help

- An impact assessment of the change in management of the southern Tasmanian refuse site is required to determine the future relocation potential of silver gulls onto Pedra Branca. Local councils should be consulted.
- Determine whether manipulation of silver gulls around burrows is required and how best this could be achieved.

- Consideration and planning for development and installation of artificial habitat on Pedra Branca and ongoing monitoring (first option), removal and husbandry of specimens until threats are alleviated (second option), translocation and monitoring in new sites on Pedra Branca (third option), translocation to new sites previously identified and found suitable (fourth option).
- A full biological survey of Pedra Branca is required and any suitable translocation sites identified.
- Please do not enter or access Pedra Branca without permission as precautions are needed to ensure that equipment is free from rats and disease. Other wildlife breed on the island and are prone to disturbance.
- Any activities supporting silver gulls (rubbish tips, fish farms, fishing, etc.) should be managed so as not to artificially increase gull populations or their movement.

More Information

Brothers, N. P. and Pemberton, D. (1997). Population changes and current status of the Pedra Branca skink. Internal Report to Parks and Wildlife Service, Tasmania.

Cogger, H., Cameron, E., Sadlier, R. and Eggler, P. 1993. The Action Plan for Australian Reptiles. Australian Nature Conservation Agency, Canberra.

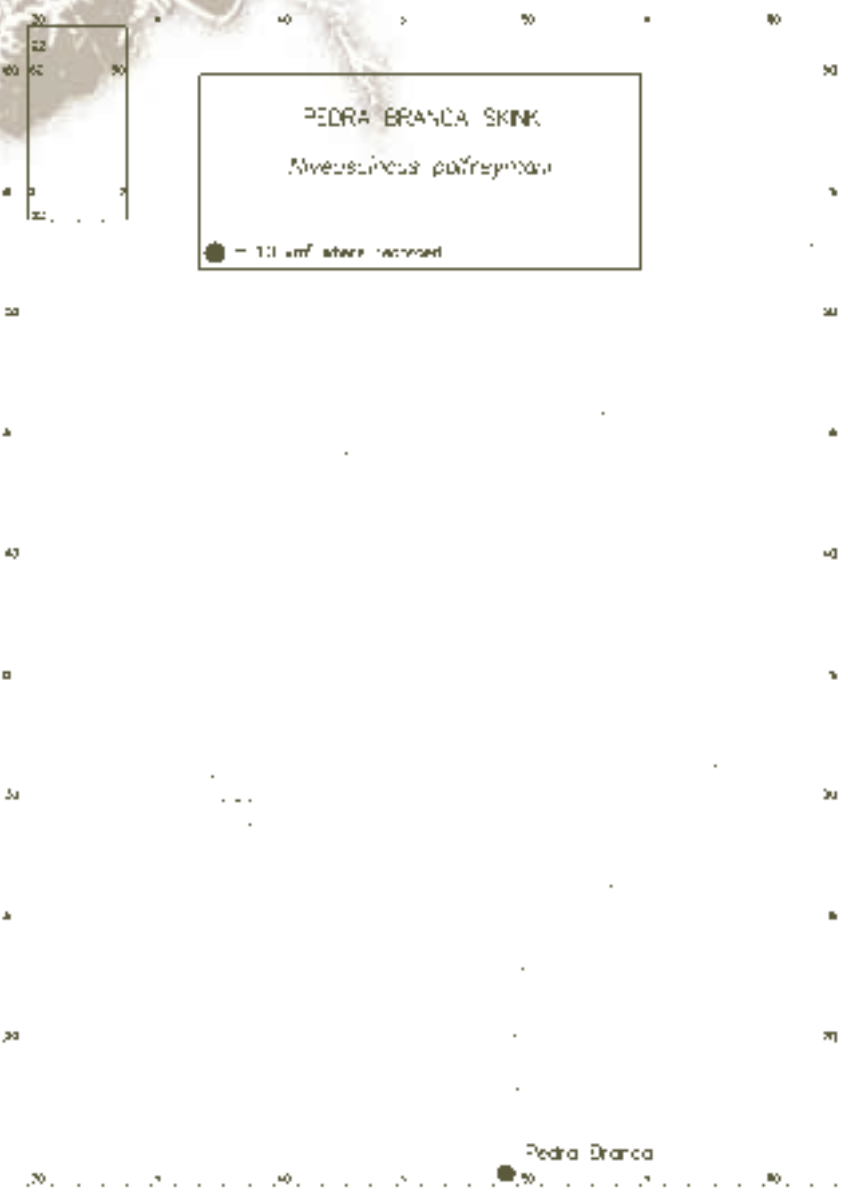
Pemberton, D. (1999). Draft Pedra Branca skink Recovery Plan. Parks and Wildlife Service, Hobart, Tasmania.

Rounsevell, D., Brothers, N. and Holdsworth, M. (1985). The status and ecology of the Pedra Branca skink *Pseudomoia palfreymani*. pp 477-480 in G. Grigg, R. Shine and H. Ehmann (eds) The Biology of Australasian Frogs and Reptiles. Royal Zoological Society of NSW, Sydney.

Threatened Species Unit (1999). Listing Statement: Pedra Branca Skink. Parks and Wildlife Service, Department of Environment and Land Management.

1:25 000 TASMAP sheet with known localities

Pedra Branca is not covered by a 1:25 000 mapsheet. It is listed in Section I on the South Cape 1:100 000 map.


PEDRA BRANCA SKINK
Pedra Branca

GREEN AND GOLD FROG

Litoria raniformis (Hylidae)

[Illustration by Rick Crossland]

Status

Tasmania's *Threatened Species Protection Act 1995* - Vulnerable
Commonwealth *Endangered Species Protection Act 1992* - not listed

Description

The green and gold frog is the largest, most robust and brightly coloured frog in Tasmania. It can grow 80 to 100 mm in body length and weigh up to 40 g. Although the colour is variable it is usually green to brown on the back with scattered brown or golden blotches. The groin and back of the thighs are often a turquoise blue to green. A pale green dorsal stripe runs down the middle of the back with pale golden folds along the sides. The skin below the folds is warty while the underside is white and grainy. The toes are well webbed. In breeding condition, males develop a 'beard' of black mottling and a hard nuptial pad on the outside of the thumb. The male has a distinctive low growling call which is made from September to January.

Distribution, Habitat and Biology

Green and gold frogs occur in southeastern Australia, including localised parts of Tasmania and the Bass Strait islands. In Tasmania they are found in lowland areas, predominantly coastal and mainly in the north, northeast (stronghold) and southeast. Their populations have declined throughout Tasmania, especially in the Midlands, northwest and Bass Strait islands, as well as nationally. Although populations vary on a seasonal basis according to rainfall, it is estimated that their range has contracted by over 50% in the last 20 years. The total population may well number about 3000 with the largest breeding site being at Blackmans Lagoon at Waterhouse.

Green and gold frogs live in or near permanent or temporary water bodies such as streams, swamps, vegetated pools and farm dams. The waterbodies are usually dominated by plants such as *Triglochin procera*, or species of *Juncus* and sedge. They spend most of their time on the ground among vegetation within or at the edge of the water body and are rarely seen in open water. They are dependant on permanent fresh water for breeding and ideally prefer sites which are shallow with diverse vegetation. They are active during the day and are the only frog in Tasmania to 'bask' in the sun. They also feed at night on invertebrates and other frogs and tadpoles. The species can become dormant as an adaptive mechanism to survive dry periods. Green and gold frogs become sexually mature at 1 to 2 years of age. Breeding occurs in spring and summer (September to January) and eggs are laid in a mat which sinks to the bottom of the water. The aquatic tadpole stage probably lasts for more than a year. Males are territorial while breeding.

Key Sites (large breeding populations)

- Blackmans Lagoon at Waterhouse State Reserve (largest breeding site)
- Wetlands in the Deloraine-Longford-Launceston region, including Weegena, the Tamar Reserve, Woodstock Lagoon and Bowthorp
- Asbestos Range National Park
- Mt William National Park
- Hazards Lagoon in Freycinet National Park
- Coastal wetland along the northeast coast between the Great Forester River and Ringarooma River
- On the east coast between St Helens and Seymour Point
- Sorell-Richmond area, including Prospect House and Township Lagoon at Lewisham

Key Threats

- Loss of wetland habitat for any reason, e.g. drainage and clearance for pasture.
- Weed invasion.
- Pollution, overgrazing and trampling of water bodies by stock.
- Pollution by pesticides, fertilisers, effluent.
- Collection for use as fish bait.
- Predation by dogs and cats.
- Increased ultra-violet radiation due to ozone layer depletion which is influencing frog populations globally.

Habitat Management

- Please protect all wetlands in the key breeding range of the green and gold frog as this will help to maintain current population levels. Especially do not drain wetlands or draw water during the summer for other purposes, they are fragile ecosystems which naturally dry and fill on the seasons.
- If you manage wetland containing the green and gold frog please consider some form of long-term protection, e.g. wildlife sanctuary, management agreement, covenant, etc. Linking properties to form large corridors of native bush and establishing Bushcare or Land for Wildlife networks can help reduce habitat fragmentation.

If You Want to Construct a Wetland

- If you are considering constructing a wetland seek advice on key features. Variety is important. The edges of the wetland should be irregular in shape to provide varying aspect and slope to alter water depth. Ideally water levels should vary in depth from shallow zones to areas of deep open water. Areas of shallow water provide most food for frogs and other species, e.g. one metre depth allows light and warmth to stimulate abundant growth of water plants.
- Re-establish native vegetation, e.g. rushes, reeds and sedges in and around the wetland edge, to provide nesting material and trap insects and other invertebrate food supplies. Also provide refuge and protection for frogs and fauna generally. Use local native shrubs and trees where appropriate. Do not plant shrubs or trees too thickly as they may obstruct flight paths or species access to the water's edge.

Vegetation Clearing and Buffers

- Avoid clearing any native vegetation from the wetland, stream side zones or stream banks. Vegetation provides shelter, shade (maintains water temperature) and essential food for frogs and other aquatic fauna. It also filters surface runoff (reducing nutrients and sediments), limits light levels, and maintains slope and bank stability.
- Wetlands and stream zones should contain a mix of native understorey and overstorey plants where appropriate, including reeds, grasses, shrubs and trees. Diversity of vegetation along stream banks is important as trees, shrubs and ground cover all play different and important roles in stream bank stability. Establish vegetation as far down the bank as possible. This may require special work to stabilise the toe of the bank or reduce its steepness to enable vegetation to establish.
- The width of vegetation buffers depends on the situation. The greater the buffer width, the greater the protection, the more diverse the buffer vegetation, the better the protection. In any case, for small, seasonally dry water channels buffers should be no less than 10 m wide each side, grading up to at least 60 m wide each side for larger stream zones. Two methods for calculating minimum buffer width are a distance equivalent to the average dominant tree height, or if there are no trees then the amplitude distance between bends.
- Buffers are especially important at points where surface water enters small river channels or landscape depressions, and where flow concentrates.
- An effective buffer zone should also provide for the continuing input of large woody debris and leaf litter into the stream.

Weed and Willow Removal

- Cut and paint weeds, leaving roots (and stumps of willows) intact to aid bank stability. This will also prevent suckers from sprouting.
- Removal of willows or dense weed mats must coincide with a revegetation program so that stream banks are not exposed to excessive erosion, light or loss of foliage. Remember that the green and gold frog seeks refuge and feeds in wetland vegetation and that most aquatic animals like cool, shady places.
- Prevent any large, heavy machinery or structures from entering the wetland or stream bed, e.g. tractors, excavators, bridge supports, etc., even if they are being used for restoration activities. This will not only directly kill localised species and alter habitat for other aquatic animals, but the sedimentation caused by the disturbance will accumulate on the stream bed and smother fragile habitats.
- Use only herbicides which are registered as suitable in watercourses (e.g. Roundup Biactive®). Seek advice from the Parks and Wildlife Service on types of herbicides and preferred alternatives.
- If introduced cumbungi (bullrush) is invading the site it should be destroyed as early as possible, e.g. young or early growth stages. Manual (hand) or mechanical removal must remove the entire plant including the roots and rhizomes. If using Roundup Biactive® only apply during the flowering period (December to March).

Snags or Woody Debris

Woody debris, including snags, are a natural and important part of the river system. Snags are essential for creating a range of flow conditions enabling a diversity of plants and animals to establish. They provide shade and shelter and their gradual decay and trapping of leaf litter provides the food for many aquatic animals (e.g. frogs, crayfish, insects).

- Do not remove woody debris or snags from the river system. If a snag is completely blocking water flow seek advice on how to realign it to a 20 to 40 degree angle to the stream bank.
- Lop selected branches from snags near the water surface if they tend to trap debris and cause log jams.
- If the woody debris requires removal from the main stream channel, try relocating it to a position of low water velocity in the stream or place it on the outside of banks to improve stability.
- In streams which have been modified or degraded consider reintroducing woody debris into the stream system. Seek advice on the best way to undertake this.

Fertilisers, Chemicals, etc.

- Use only chemicals which are registered as suitable in watercourses as frogs and many other animals are extremely sensitive to chemicals, even in light doses (e.g. pyrethrin is lethal to crayfish and lobsters).
- Time any fertiliser or chemical application to avoid periods of intense runoff. Instead of broadcast applications, try direct placement in the soil or place under a blanket of stubble mulching, etc.
- Trial the use of alternative 'environmentally friendly' applications, which may also be safer for stock and human health.

Managing Stock Access

Stock naturally favour wetlands and riversides and if poorly managed will completely degrade crossings, watering points and foul the water. This results in bank erosion, loss of plant species, soil compaction, weed invasion, and a build up of bacteria and viruses in the water. If at all possible 'Keep Stock Out'.

- Fencing and smart planning will enable you to manage the riparian zone and your stock. Hanging fences, electric and electronic fences, drop fences and alternative watering points, including troughs, should be used depending on the situation.
- Timing, intensity and duration of stock in wetlands or sensitive riparian zones can also be regulated to maintain the area.

Culverts, Dams, Weirs, etc.

Many aquatic animals (especially platypus and lobsters) avoid or are unable to go through culverts. Culverts channel the water flow over the smooth concrete surface and increase flow velocity. Poorly designed or poorly embedded culverts prevent upstream movement and natural mixing of aquatic species and also force larger species like lobster onto roadsides or into open situations.

- Wherever possible use bridges instead of culverts. Try alternative inverted 'U' shaped designs or irregular shapes. If round culverts are necessary they should be fully embedded in the stream bed and ideally should have an artificial substrate provided down the mid-line of the pipe (e.g. cemented rocky gravel).
- Do not construct dams, weirs, etc. anywhere in the catchment. Please seek advice. Barriers will significantly alter environmental flow regimes and may make the site totally unsuitable for many plant and animal species.
- Do not remove gravel or large quantities of rock from the wetland or stream bed. This contains aquatic fauna, provides cover and disperses water flow. The removal of shingle from the river can alter the stream hydrology and lead to erosion of the stream bed and channel.

Other Ways to Help

- Prevent dogs, cats or livestock from disturbing frogs or from trampling wetland vegetation which is needed for shelter.
- Report any sightings of the green and gold frog to the Threatened Species Unit as information on this species' distribution, breeding and ecology in Tasmania is limited.
- It is illegal to collect this species or to use any type of frog for fish bait.
- Learn more about frog species and their identification. Information about all of Tasmania's frog species and a tape of their calls is available from the Deloraine Field Naturalists Group or the Queen Victoria Museum. Monitoring the calls of the green and gold frog (once or twice per year) will also provide long-term and seasonal information on population fluctuations.
- Form or join a Landcare group with a specific focus on wetland restoration for this species. Money may be available through the Natural Heritage Trust Grants Program to assist.

More Information

Ashworth, J. M (1998). An appraisal of the conservation status of *Litoria raniformis* (Kefferstein) in Tasmania. Unpublished Masters Thesis, University of Tasmania, Hobart.

Deloraine Field Naturalist Group (1996). Natural History and Calls of Tasmanian Frogs. Cassette tape available from the DFNG. 68 Dynans Bridge Road, Weegena Tas 7304.

LWRRDC (1995). Rivercare. Land and Water Resources R&D Corporation Occasional Paper No. 03/95.

Martin, A. and Littlejohn, M. J. (1982). Tasmanian Amphibians. Fauna of Tasmania Handbook No. 6. University of Tasmania, Hobart.

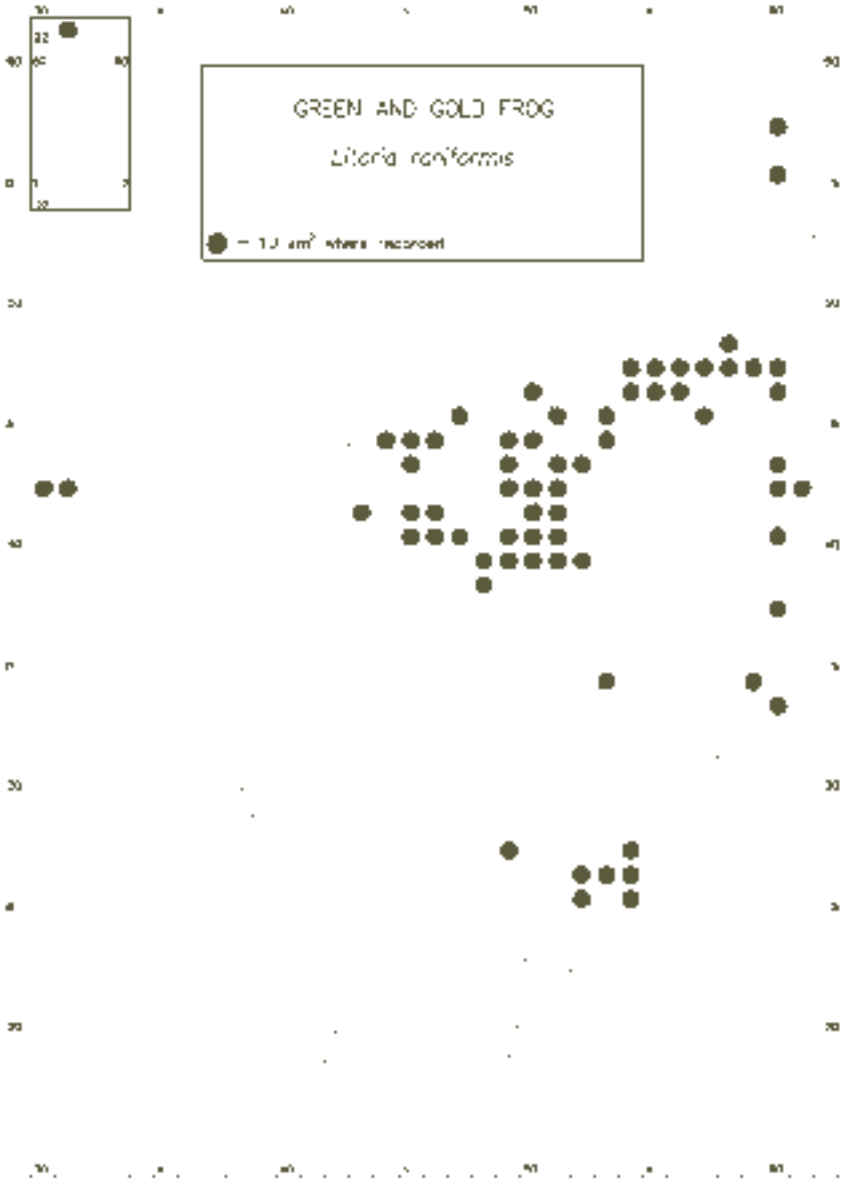
Munks, S. A. (ed) (1996). A Guide to Riparian Vegetation and its Management. Dept of Primary Industries and Fisheries, Tasmania.

Queen Victoria Museum, Wellington Street, Launceston, Tasmania.

1: 25 000 TASMAP sheets with known localities and potential habitat

Apslawn	Bains	Barnes Bay	Barretts
Beaconsfield	Bell Bay	Bicheno	Binalong
Blackmans Bay	Blue Tier	Boltons (Bougainville)	Boltons (Grindstone)
Bowood	Bridport	Broadmarsh	Buckland
Bushy Park	Campbell Town	Carlton	Cleveland
Cloudy	Cluan	Coles Bay	Communication
Conara	Cranbrook	Cremorne	Cressy
Cygnet	Darlington	Delmont	Deloraine
Devonport	Dilston	Eddystone	Ellinthorp
Evandale	Exeter	Geeveston	Gladstone
Glen Huon	Gog	Great Bay	Greens Beach
Grim	Hamilton	Hanleth	Harford
Hastings	Hobart	Jacobs	Kellevie
Kerford	Lanka	Latrobe	Launceston
Leprena	Liffey	Lilydale	Lisdillon
Lisle	Lodi	Logan	Longford
Low Head	Lyme Regis	Mayfield	McCall
Memana	Monarch	Montacute	Montagu
Morriston	Murdunna	Musselroe	Nabowla
Naturaliste	Nile	Ordnance	Orford
Ouse	Oxberry	Parkham	Partridge
Passage	Patriarchs	Pearly Brook	Pioneer
Port Arthur	Port Sorell	Prospect	Pyengana
Railton	Ravensdale	Retreat	Richmond
Robbins	Ross	Royalty	Runnymede
Saltwater	Sandspit	Scamander (Beaumaris)	Scamander (Falmouth)
Scottsdale	Sea Elephant	Seymour	Sheffield
Smithton	Sorell	Spurrs Rivulet	St Helens
Stanley	Strickland	Studland	Swansea
Tam O'Shanter	Taroona	Tea Tree	The Gardens
Tomahawk	Triabunna	Tunbridge	Ulverstone
Waterhouse	West Frankford	Westbury	Weymouth
Whitemark	Wickham	Wilmot	

GREEN AND GOLD FROG



CLARENCE GALAXIAS

Galaxias johnstoni (Galaxiidae)

[Illustration from Fulton 1990]

Status

Tasmania's *Threatened Species Protection Act 1995* - Endangered
Commonwealth *Endangered Species Protection Act 1992* - Endangered

Description

A small native endemic fresh water fish growing to 12 to 14 cm in maximum length. Adults are coloured dark brown on the back and down the sides in irregular bands and patches, usually with a yellowish belly. Juveniles are pale until about 4 cm in length when they start to develop adult coloration. Numerous small dark spots are often present over the body, which are in fact parasites.

Distribution, Habitat and Biology

The Clarence galaxias is known only in a few streams, marshes and lakes in the upper Clarence River catchment and a small part of the Nive River catchment in the Central Highlands of Tasmania. The species was formerly more widespread in nearby rivers, but has seriously declined due to predation and competition from the spread of brown trout *Salmo trutta*. Brown trout actively eliminate the species and are known to be invading its present range. The only surviving populations are in headwater streams where a barrier of some kind has prevented the spread of brown trout. A large population of Clarence galaxias co-exists with the less aggressive brook trout *Salvelinus fontinalis* in Clarence Lagoon.

Spawning takes place in spring, with eggs laid in masses attached to rocks in streams. Eggs take about two months to hatch. Larvae and small juveniles prefer swimming in open water in small schools where they feed on planktonic crustaceans. Adults eat bottom-dwelling crustacea and aquatic insects. Clarence galaxias are estimated to live for about four to five years.

Key Sites

- Lakes and streams in the Upper Clarence River and Nive River catchments.

Key Threats

- Brown trout.
- Changes in water quality or water flows due to forestry or pastoral activities.

Management Recommendations for Commercial Forestry

- Detailed recommendations are provided to Forest Practices Officers under the Forest Practices Code.

Habitat Management

- Avoid clearing native vegetation in the Clarence River or Nive River catchments as this can alter water flows. The present pattern of water flows must be maintained to retain the natural barriers (marshes and cascades) to the movement of brown trout, which protect the surviving Clarence galaxias populations. No higher flows or drying up of small streams must occur.
- Maintain habitat quality of marshes by not altering drainage patterns in any way.
- If you manage habitat containing the Clarence galaxias please consider some form of long-term protection, e.g. wildlife sanctuary, management agreement, covenant, etc. Linking properties to form large corridors of native waterways and establishing Bushcare or Land for Wildlife networks can help reduce habitat fragmentation.
- Avoid any large, heavy machinery or structures entering the stream bed or watercourse, e.g. tractors, excavators, bridge supports, etc., even if its being used for restoration activities. This will not only directly kill localised species (e.g. galaxias) and alter habitat for other aquatic animals, but the sedimentation caused by the disturbance will accumulate on the stream bed and smother fragile habitats.
- Do not remove gravel or large quantities of rock from the stream bed. This contains aquatic fauna including fish eggs, provides cover and disperses water flow.
- Do not construct dams, weirs, etc. anywhere in the catchment, without advice. Barriers will significantly alter environmental flow regimes and may make the site totally unsuitable for the species or allow predators (brown trout) to penetrate.

Vegetation Clearing and Buffers

- Avoid clearing any native vegetation from the wetland, stream side zones or stream banks. Vegetation provides shelter, shade (maintains water temperature) and essential food for galaxias and other aquatic fauna. It also filters surface runoff (reducing nutrients and sediments), limits light levels and maintains slope and bank stability.
- Wetlands and stream zones should contain a mix of native understorey and overstorey plants where appropriate, including reeds, grasses, shrubs and trees. Diversity of vegetation along stream banks is important as trees, shrubs and ground cover all play different and important roles in stream bank stability. Establish vegetation as far down the base of the bank as possible. This may require special work to stabilise the toe of the bank or reduce its steepness to enable vegetation to establish.
- The width of vegetation buffers depends on the situation. The greater the buffer width, the greater the protection, the more diverse the buffer vegetation, the better the protection. In any case, for small, seasonally dry water channels buffers should be no less than 10 m wide each side, grading up to at least 60 m wide each side for larger stream zones. Two methods for calculating minimum buffer width are: a distance equivalent to the average dominant tree height, or if there are no trees, then the amplitude distance between bends.
- Buffers are especially important at points where surface water enters small river channels or landscape depressions, and where flow concentrates.
- An effective buffer zone should also provide for the continuing input of large woody debris and leaf litter into the stream.

Weed and Willow Removal

- Cut and paint weeds, leaving roots (and stumps of willows) intact to aid bank stability. This will also prevent suckers from sprouting.
- Removal of willows or dense weed mats must coincide with a revegetation program so that stream banks are not exposed to excessive erosion, light or loss of foliage. Remember that the green and gold frogs seek refuge and feed in wetland vegetation and that most aquatic animals like cool, shady places.
- Prevent any large, heavy machinery or structures from entering the wetland or stream bed, e.g. tractors, excavators, bridge supports, etc., even if they are being used for restoration activities. This will not only directly kill localised species and alter habitat for other aquatic animals, but the sedimentation caused by the disturbance will accumulate on the stream bed and smother fragile habitats.
- Use only herbicides which are registered as suitable in watercourses (e.g. Roundup Biactive®). Seek advice from the Parks and Wildlife Service on types of herbicides and preferred alternatives.
- If introduced cumbungi (bullrush) is invading the site it should be destroyed as early as possible, e.g. young or early growth stages. Manual (hand) or mechanical removal must remove the entire plant including the roots and rhizomes. If using Roundup Biactive® only apply during the flowering period (December to March).

Snags or Woody Debris

Woody debris, including snags, are a natural and important part of the river system. Snags are essential for creating a range of flow conditions enabling a diversity of plants and animals to establish. They provide shade and shelter and their gradual decay and trapping of leaf litter provides the food for many aquatic animals (e.g. frogs, crayfish, insects).

- Do not remove woody debris or snags from the river system. If a snag is completely blocking water flow seek advice on how to realign it to a 20 to 40 degree angle to the stream bank.
- Lop selected branches from snags near the water surface if they tend to trap debris and cause log jams.
- If the woody debris requires removal from the main stream channel, try relocating it to a position of low water velocity in the stream or place it on the outside of banks to improve stability.
- In streams which have been modified or degraded consider reintroducing woody debris into the stream system. Seek advice on the best way to undertake this.

Fertilisers, Chemicals, etc.

- Use only chemicals which are registered as suitable in watercourses as fish (adults and eggs) and many other animals are extremely sensitive to chemicals, even in light doses (e.g. pyrethrin is lethal to crayfish).
- Time any fertiliser or chemical application to avoid periods of intense runoff. Instead of broadcast applications, try direct placement in the soil or place under a blanket of stubble mulching, etc.
- Trial the use of alternative 'environmentally friendly' applications, which may also be safer for stock and human health.

Managing Stock Access

Stock naturally favour wetlands and riversides and if poorly managed will completely degrade crossings, watering points and foul the water. This results in bank erosion, loss of plant species, soil compaction, weed invasion, and a build up of bacteria and viruses in the water. If at all possible 'Keep Stock Out'.

- Fencing and smart planning will enable you to manage the riparian zone and your stock. Hanging fences, electric and electronic fences, drop fences and alternative watering points, even troughs, should be used depending on the situation.
- Timing, intensity and duration of stock in sensitive riparian zones can also be regulated to maintain the area.

Other Ways to Help

- If you observe brown trout in any of the streams or lakes where the Clarence galaxias occurs, please notify the Inland Fisheries Commission immediately (address below).
- It is illegal to transfer any animals (fish, frogs, crayfish or other invertebrates) between water bodies or into a new water body where they do not naturally occur (including different sections of the same stream).
- It is illegal to use any fish (alive or dead) as bait in any fresh water body.
- Please contact the Inland Fisheries Commission if you are a regular visitor to the Clarence River and Nive River areas. There may be other ways you can help with surveying or recovery actions. The movement of brown trout into the range of the Clarence galaxias requires monitoring.

More Information

Crook, D. A. and Sanger, A. C. (1997). Recovery plan for the Pedder, Swan, Clarence, swamp and saddled galaxias. Inland Fisheries Commission, Hobart.

Fulton, W. (1990). Tasmanian Freshwater Fishes. Fauna of Tasmania Handbook No. 7. University of Tasmania, Hobart.

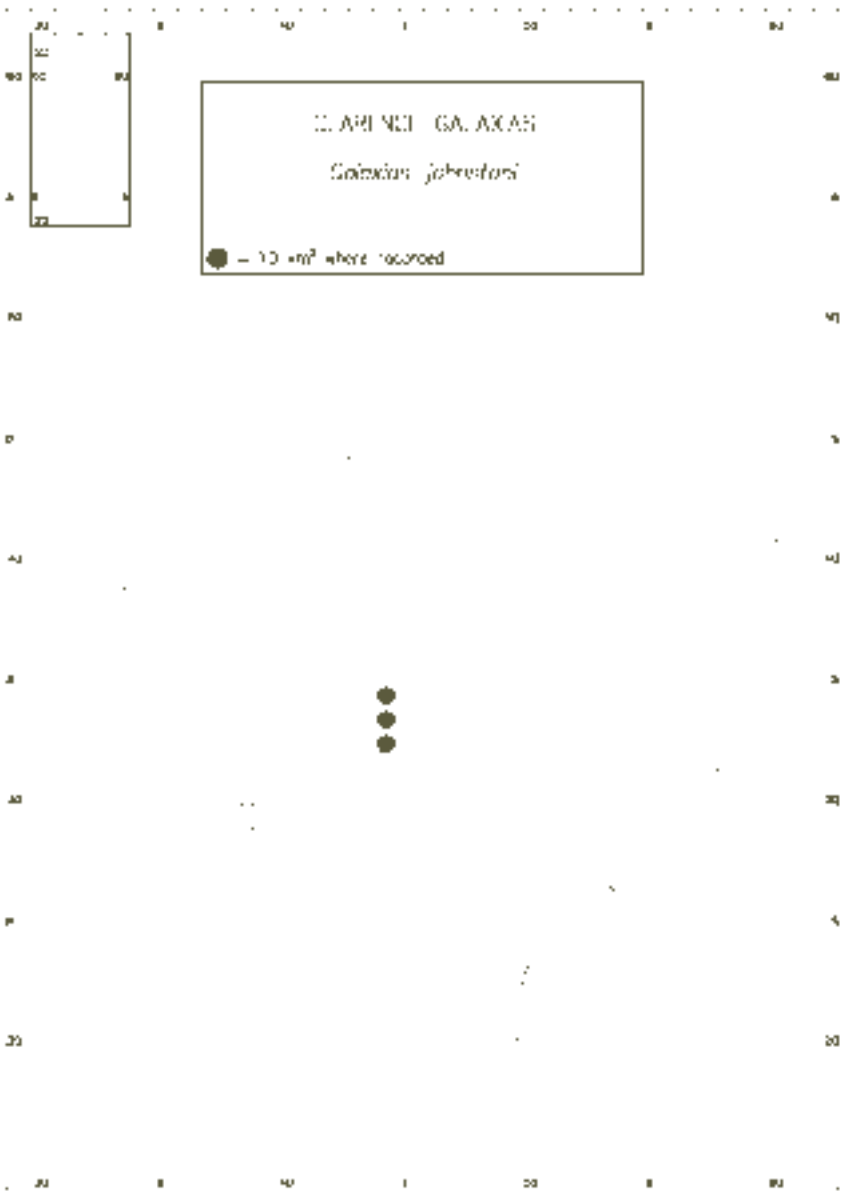
Inland Fisheries Commission, 6B Lampton Avenue, Derwent Park, Tasmania, 7009.

Threatened Species Unit (1998). Listing Statement: Clarence Galaxias *Galaxias johnstoni*. Parks and Wildlife Service, Department of Environment and Land Management, Hobart.

Wager, R. and Jackson, P. (1993). The Action Plan for Australian Freshwater Fishes. Australian Nature Conservation Agency, Canberra.

1: 25 000 TASMAP sheets with known localities (map grids are confidential)

Bronte D'Arcys Ina



DWARF GALAXIID

Galaxiella pusilla (Galaxiidae)

[Illustration from Fulton 1990]

Status

Tasmania's *Threatened Species Protection Act 1995* - Rare
Commonwealth *Endangered Species Protection Act 1992* - Vulnerable

Description

A small native fresh water fish which grows to about 4 cm in length. The body colour is more or less transparent with dark colouring along the back and three longitudinal black stripes. Males have a conspicuous brilliant orange-red stripe between the middle and lower black stripes, but this is absent in the female.

Distribution, Habitat and Biology

The range of the dwarf galaxiid is quite disjunct. The species occurs in lowland swampy areas in the far northwest of Tasmania and in the far northeast of Tasmania, including on Flinders Island. The species also occurs in parts of Victoria and South Australia. They live in slow-flowing fresh water, such as in swamps and drains, or backwaters of streams, where they hide among aquatic vegetation in the shallows. They are sometimes found in temporary waters which dry up in summer but remain connected to a permanent water supply.

Dwarf galaxiids spawn around August each year and eggs are laid singly on aquatic plants. Eggs hatch after about three weeks and probably mature after one year. Dwarf galaxiids are carnivorous and feed on small crustaceans from the water column and also on bottom-dwelling invertebrates.

Key Sites

- Lowland areas in the northeast from near Bridport to Mt William National Park.
- The Marsh Creek environs around Rushy Lagoon.
- Flinders Island wetlands and swamps.
- The northwest around the Welcome River and Mt Cameron area.

Key Threats

- Loss and degradation of habitat for any reason, e.g. due to draining of wetlands, ploughing of temporary wetlands when dry, trampling by stock, clearance of stream side and other vegetation.
- Water extraction for irrigation and stock.
- Siltation due to erosion from surface runoff.

Management Recommendations for Commercial Forestry

- Detailed recommendations are provided to Forest Practices Officers under the Forest Practices Code.

Habitat Management

- If you manage land containing this species consider some form of long-term protection, e.g. wildlife sanctuary, management agreement, covenant, etc. Contact the Threatened Species Unit, we may be able to help.
- Maintain habitat quality in wetlands especially by not altering drainage patterns. The dwarf galaxiid is dependant on swampy areas which may be the less economically productive part of your property. Please do not cultivate temporary wetlands when they are dry or extract water for other purposes.
- Prevent any large, heavy machinery or structures from entering the wetland or stream bed, e.g. tractors, excavators, bridge supports, etc., even if they are being used for restoration activities. This will not only directly kill localised species and alter habitat for other aquatic animals, but the sedimentation caused by the disturbance will accumulate on the stream bed and smother fragile habitats.
- Do not construct dams, weirs, etc. anywhere in the catchment, without advice. Barriers will significantly alter environmental flow regimes and may make the site totally unsuitable for the dwarf galaxiid. Barriers may also impede the natural migration of fish or allow access to predators.

Vegetation Clearing and Buffers

- Avoid clearing native vegetation (including trees, shrubs or rushes) from swampy watercourses. Vegetation provides shelter, shade (maintains water temperature), and essential food for dwarf galaxiids and other aquatic fauna. It also filters surface runoff (reducing nutrients and sediments), limits light levels, and maintains slope and bank stability.
- Buffers are especially important at points where surface water enters small river channels or landscape depressions, and where flow concentrates.

Weed and Willow Removal

- Cut and paint weeds with poison, leaving roots (and stumps of willows) intact to aid bank stability. Painting will also eliminate resprouting from suckers, e.g. willows.
- If the swamp land or watercourse naturally is devoid of cover, please leave it that way. Planting trees and shrubs may be totally inappropriate for the habitat.
- Use only herbicides which are registered as suitable in watercourses (e.g. Roundup Biactive®). Contact the Parks and Wildlife Service for more information on types of herbicides and preferred alternatives.
- If introduced cumbungi (bullrush) is invading the site it should be destroyed as early as possible, e.g. young or early growth stages. Manual (hand) or mechanical removal must remove the entire plant, including the roots and rhizomes. If using Roundup Biactive® only apply during the flowering period (December to March).

Fertilisers, Chemicals, etc.

- Use only chemicals which are registered as suitable in watercourses as native fish (adults and eggs) and many other animals are extremely sensitive to chemicals, even in light doses (e.g. pyrethrin is lethal to crayfish).
- Time any fertiliser or chemical application to avoid periods of intense runoff. Instead of broadcast applications, try direct placement in the soil or place under a blanket of stubble mulching, etc.
- Trial the use of alternative 'environmentally friendly' applications, which may also be safer for stock and human health.

Managing Stock Access

Stock naturally favour wetlands and riversides and if poorly managed will completely degrade crossings, watering points and foul the water. This results in bank erosion, loss of plant species, soil compaction, weed invasion, and a build up of bacteria and viruses in the water.

- Swamps and backwaters are easily degraded by stock, so if at all possible, 'Keep Stock Out'.
- Fencing and smart planning will enable you to manage the riparian zone and your stock. Hanging fences, electric and electronic fences, drop fences and alternative watering points, even troughs, should be used depending on the situation.

Other Ways to Help

- It is illegal to transfer any animals (fish, frogs, crayfish, etc. or other invertebrates) into a water body where they do not naturally occur (including different sections of the same stream) or to use any fish (alive or dead) as bait.
- Our information on the distribution of the dwarf galaxias is limited. It could possibly occur in other swampy areas between the western and eastern extremities of its range. If you identify new populations please contact the Inland Fisheries Commission.

More Information

Chilcott, S. J. and Humphries, P. (1996). Freshwater fish of northeast Tasmania with notes on the dwarf galaxiid. Records Queen Victoria Museum 103: 145-149.

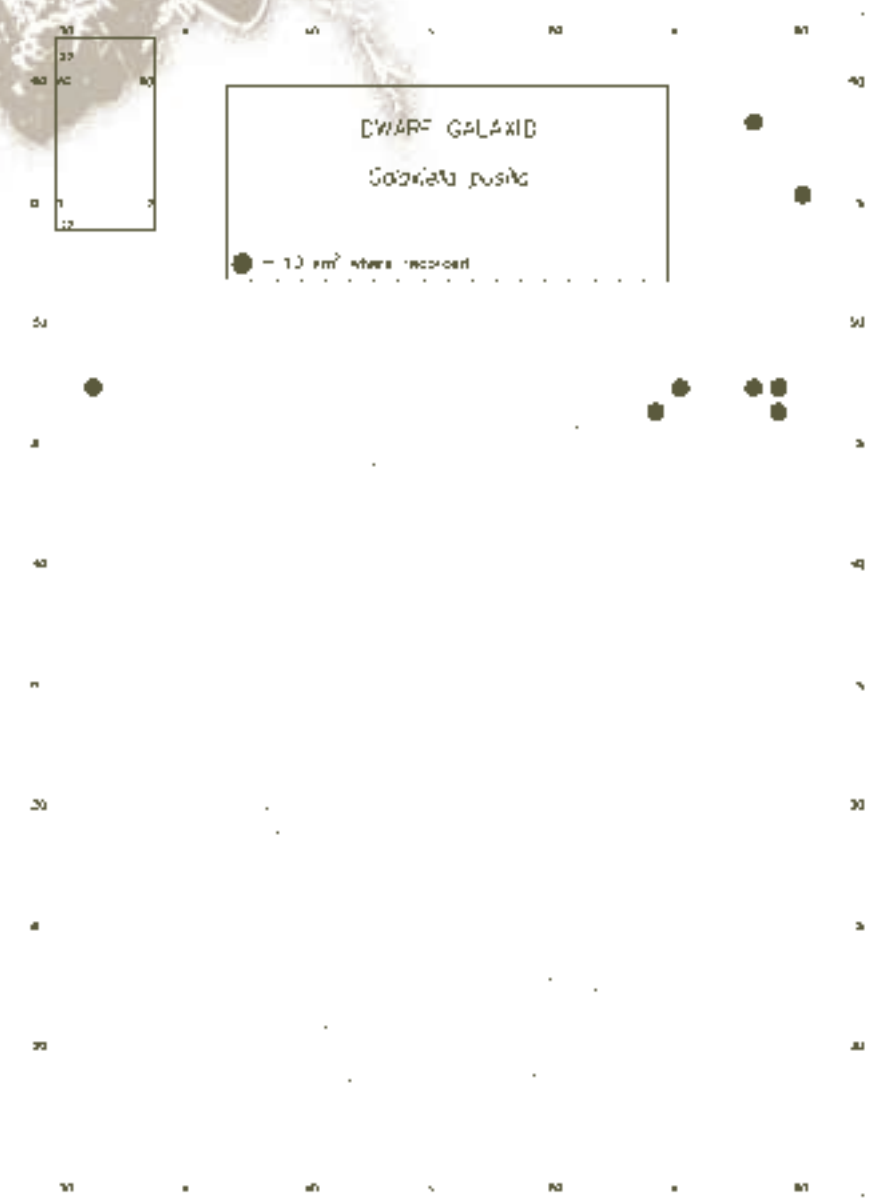
Fulton, W. (1990). Tasmanian Freshwater Fishes. Fauna of Tasmania Handbook No. 7. University of Tasmania, Hobart.

Inland Fisheries Commission, 6B Lampton Avenue, Derwent Park, Tasmania, 7009.

Wager, R. and Jackson, P. (1993). The Action Plan for Australian Freshwater Fishes. Australian Nature Conservation Agency, Canberra.

1: 25 000 TASMAP sheets with known localities and potential habitat

Ansons Bay	Arthurs	Bowood	Cameron
Eddystone	Gladstone	Logan	Lyme Regis
Memana	Monarch	Musselroe	Naturaliste
Oxberry	Patriarchs	Sellars	Tomahawk
Waterhouse	Whitemark	Wingaroo	


DWARF GALAXID
Galaxiella pusilla

PEDDER GALAXIAS

Galaxias pedderensis (Galaxiidae)

[Illustration from Fulton 1990]

Status

Tasmania's *Threatened Species Protection Act 1995* - Endangered
Commonwealth *Endangered Species Protection Act 1992* - Endangered

Description

The Pedder galaxias is a medium size native fresh water fish with adults typically growing 75 to 120 mm. They have a slender elongated body. The species is very attractively marked. The upper body and sides are light grey-brown with irregular large dark blotches containing gold to orange flecks. The underside is grey white and the fins are yellow to brown.

Distribution, Habitat and Biology

Pedder galaxias were naturally found only in the original Lake Pedder and adjoining lakes and streams. Although they were restricted in range they were considered abundant. After the flooding of Lake Pedder for hydro-electricity in the 1970s the species initially increased in abundance but then underwent a dramatic population decline. By the early 1980s they were virtually absent from the new impoundment and could only be found in a few inflowing small streams. These populations have also steadily declined to the point where during the mid 1990s no fish could be found. Pedder galaxias can now no longer be found in the Lake Pedder impoundment and repeated annual surveys have located none to a few individuals in the tributaries.

With the flooding of Lake Pedder almost the entire natural habitat of the Pedder galaxias was destroyed. The area was also exposed to the invasion of two aggressive fish species. Introduced brown trout *Salmo trutta* and the native climbing galaxias *Galaxias brevipinnis* became established and quickly out-competed the Pedder galaxias for food and habitat. Both these fish species are now well established throughout the Pedder catchment and there is no feasible way of removing them or controlling their populations.

With the loss of habitat and invasion of brown trout and climbing galaxias, the Pedder galaxias cannot maintain populations in the Lake Pedder catchment. Survival of the species is therefore totally dependant on the establishment of self-maintaining translocated populations in sites free of competing species. In 1991 a small number of Pedder galaxias were moved to a lake in the Western Arthur Range. Recent surveys have found that a small Pedder galaxias population has established and is now successfully breeding. A second translocation site is being considered.

Little is known of the species' life history in the wild. It is thought that Pedder galaxias mature at three to four years of age and spawn in spring as water temperatures rise. In captivity, a small number of eggs were produced and laid under flat stones, aquatic plants and woody debris. The larvae fed on tiny crustaceans from the water column and adults eat terrestrial and aquatic insects and small crustaceans. The species is very susceptible to stress and efforts to hold it in tanks or undertake captive breeding programs have been largely unsuccessful.

Key Sites

- Small streams flowing into Lake Pedder.
- Western Arthurs lake for translocated population.
- Strathgordon area.

Key Threats

- Any physical or chemical alteration to existing creeks and other small tributaries of the Lake Pedder impoundment.
- The potential for introduction of the aggressive introduced redfin perch *Perca fluviatilis* from Lake Gordon into Lake Pedder, via the McPartlan canal. Water levels of the lakes are being managed by the Hydro Electric Corporation to minimise this threat.

Management Recommendations and Ways to Help

- If any redfin perch are observed in Lake Pedder, please notify the Inland Fisheries Commission immediately.
- It is illegal to transfer any animals (fish, frogs, crayfish, etc. or other invertebrates) between water bodies or into a water body where they do not naturally occur (including different sections of the same stream). This is particularly relevant for the Strathgordon area.
- It is illegal to use any fish (alive or dead) as bait in any fresh water body.

More Information

Crook, D. A. and Sanger, A. C. (1997). Recovery plan for the Pedder, Swan, Clarence, swamp and saddled galaxias. Inland Fisheries Commission, Hobart.

Fulton, W. (1990). Tasmanian Freshwater Fishes. Fauna of Tasmania Handbook No. 7. University of Tasmania, Hobart.

Hamr, P. (1992). Conservation of *Galaxias pedderensis*. Report to the Endangered Species Unit, ANPWS, IFC Occasional Report 92-01, Inland Fisheries Commission, Tasmania.

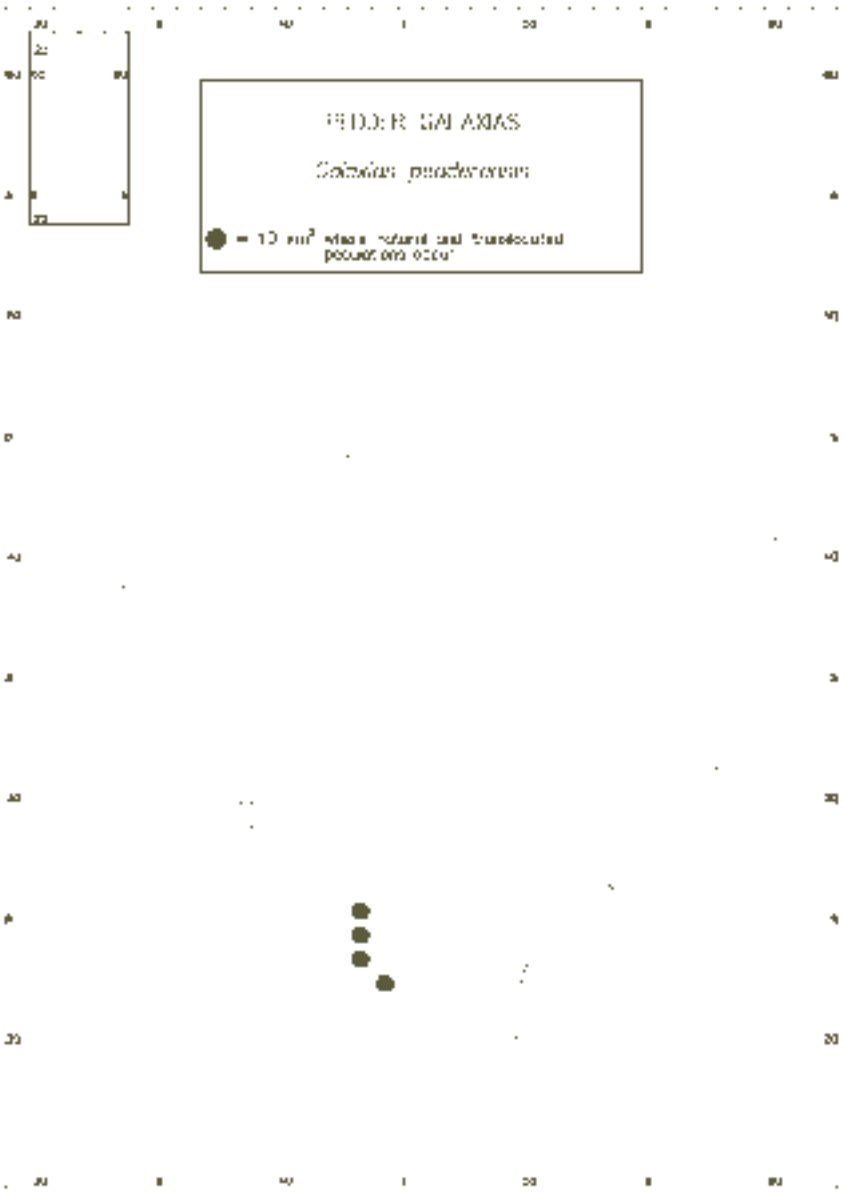
Inland Fisheries Commission, 6B Lampton Avenue, Derwent Park, Tasmania, 7009.

Threatened Species Unit (1999). Listing Statement: Pedder Galaxias *Galaxias pedderensis*. Parks and Wildlife Service, Dept of Environment and Land Management, Hobart.

Wager, R. and Jackson, P. (1993). The Action Plan for Australian Freshwater Fishes. Australian Nature Conservation Agency, Canberra.

1: 25 000 TASMAP sheets with known localities and potential habitat (map grids are confidential)

Anne	Bowes	Maconochie	McPartlan
Razorback	Scotts	Serpentine	Solitary
Strathgordon	View		


PEDDER GALAXIAS
Galaxias pedderensis

SADDLED GALAXIAS

Galaxias tanycephalus (Galaxiidae)

[Illustration from Fulton 1990]

Status

Tasmania's *Threatened Species Protection Act 1995* - Vulnerable
Commonwealth *Endangered Species Protection Act 1992* - Vulnerable

Description

Saddled galaxias are small native fresh water fish which grow to a maximum length of about 15 cm. Body markings appear as a series of dark saddles along the back and down the sides. This pattern sometimes progresses to large oval spots which become confluent towards the back. Smaller fish are dark olive on the back, yellow-green around the markings and have a silver belly. Larger fish may be black on the back and sides with a purple sheen and greyish belly. Sometimes the dorsal and anal fins have black edges.

Distribution, Habitat and Biology

Saddled galaxias are endemic to Tasmania and are found naturally only in Woods Lake and Arthurs Lake on the Central Plateau, including the upper Lake River. They are uncommon in Arthurs Lake but more abundant in Woods Lake. This difference in abundance is possibly due to the lower clarity of the water in Woods Lake which reduces predation levels and results in higher plankton productivity increasing the survival of the young. Brown trout are common in all these areas and while it is likely that trout predation limits the abundance of the saddled galaxias, the two can apparently co-exist. The population of saddled galaxias in the Lake River is thought to be vagrants washed out of the lakes by dam releases and not river residents.

Adult saddled galaxias are usually found among rocks around the margins of the lakes, while larvae and juveniles prefer open water. Adults feed on bottom-dwelling crustaceans and aquatic insects; the larvae feed on crustaceans in the water column (zooplankton). Some aquatic insects are also eaten. Saddled galaxias spawn at one year of age and have both an autumn and spring spawning period.

Arthurs Lake and Woods Lake are natural lakes whose levels have been raised by the Hydro Electric Coorporation dams. Habitat quality depends on water levels and water quality, both being affected by how lake levels are managed. Woods Lake is affected by nutrient-rich inflows from a canal. The saddled galaxias habitat at Woods Lake has at times been de-watered by draw downs for irrigation. Water levels are currently being managed by the Hydro Electric Corporation with consideration given to the requirements of the saddled galaxias.

Key Sites

- Endemic to Arthurs Lake and Woods Lake.
- The population in Woods Lake is critical for the long-term survival of the species.

Key Threats

- Establishment of other introduced fish (such as carp or redfin perch) is a major potential threat.
- Any change in management of water levels of Arthurs Lake and Woods Lake.
- Change in water levels or water quality through clearing in the catchments.

Management Recommendations for Commercial Forestry

- Detailed recommendations are provided to Forest Practices Officers under the Forest Practices Code.

Habitat Management and Other Ways to Help

- If any redfin perch or carp are observed in Woods Lake or Arthurs Lake, please notify the Inland Fisheries Commission immediately.
- Maintenance of at least a 40 to 60 m wide strip of undisturbed native vegetation around the lakes containing saddled galaxias is required to protect water and habitat quality.
- Shack owners and residents in these areas should be aware of this species, its requirements and conservation significance. Shoreline vegetation should be protected around the lake perimeters.

- It is illegal to transfer any animals (fish, frogs, crayfish, etc. or invertebrates) between water bodies or into a water body where they do not naturally occur (including different sections of the same stream).
- It is illegal to use any fish (alive or dead) as bait in any fresh water body.

More Information

Crook, D. A. and Sanger, A. C. (1997). Recovery plan for the Pedder, Swan, Clarence, swamp and saddled galaxias. Inland Fisheries Commission, Hobart.

Fulton, W. (1990). Tasmanian Freshwater Fishes. Fauna of Tasmania Handbook No. 7. University of Tasmania, Hobart.

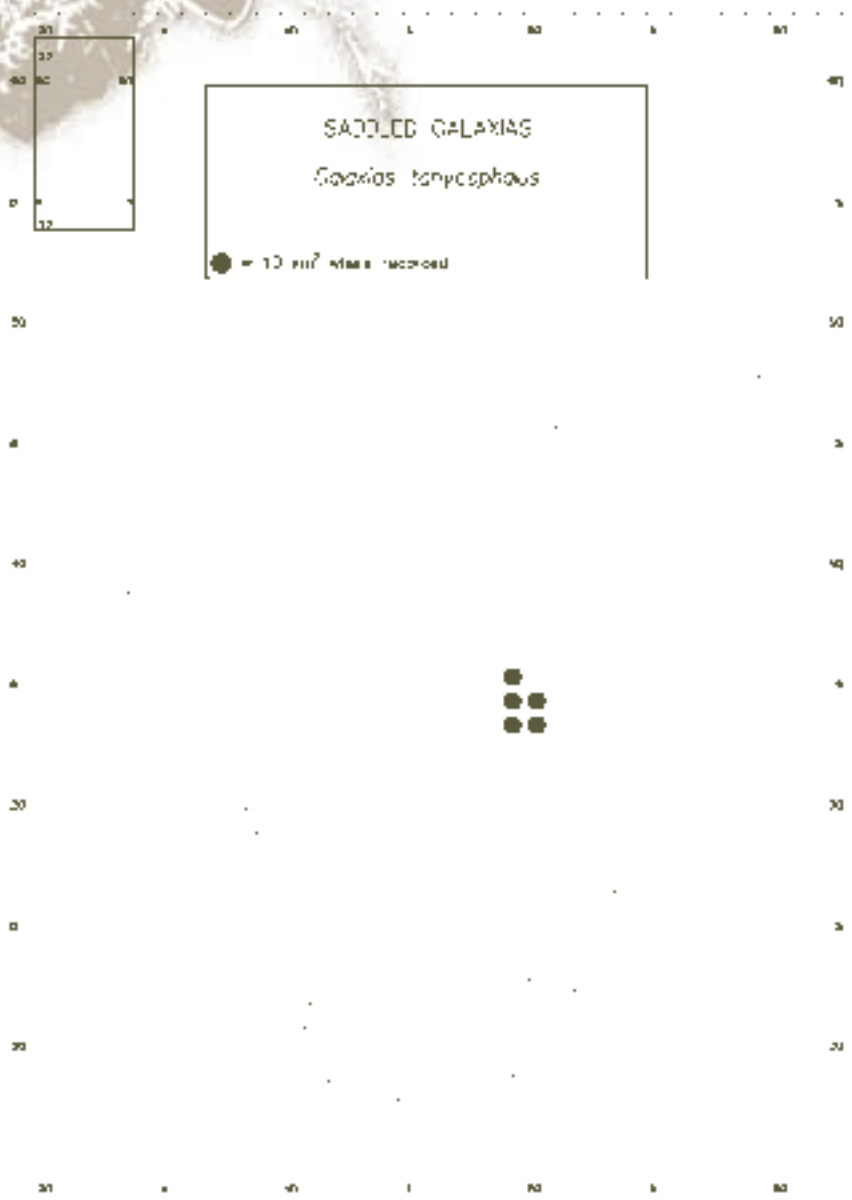
Inland Fisheries Commission, 6B Lampton Avenue, Derwent Park, Tasmania, 7009.

Threatened Species Unit (1998). Listing Statement: Saddled Galaxias *Galaxias tanycephalus.* Parks and Wildlife Service, Department of Environment and Land Management, Hobart.

Wager, R. and Jackson, P. (1993). The Action Plan for Australian Freshwater Fishes. Australian Nature Conservation Agency, Canberra.

1:25 000 TASMAP sheets with known localities

Arthurs Lake Interlaken Penny Steppes
Wihareja


SADDLED GALAXIAS
Galaxias tanycephalus

SWAN GALAXIAS

Galaxias fontanus (Galaxiidae)

[Illustration from Fulton 1990]

Status

Tasmania's *Threatened Species Protection Act 1995* - Endangered
Commonwealth *Endangered Species Protection Act 1992* - Endangered

Description

The Swan galaxias is a small to medium native fresh water fish growing to about 13.5 cm in length. The head is broad and flattened dorsally and the eyes are located at the dorsal profile. The colour on the back is dark olive green which fades to grey-white on the underside. The sides and back have pale brown speckling which may form irregular brown bars or patches. The caudal fin is slightly forked but all fins are unmarked.

Distribution, Habitat and Biology

Swan galaxias are endemic to Tasmania and occur only at a few localities in eastern Tasmania. These are primarily the upper reaches of the Swan River and Macquarie River catchments and headwater streams in the same area. They have also been recently established into sites in the same area, i.e. between upper St Pauls River in the north and Rocka Rivulet in the south. They survive only in streams where natural barriers such as waterfalls and marshes have prevented invasion of trout *Salmo trutta* and redfin perch *Perca fluviatilis*. Both these exotic fish species will eliminate the Swan galaxias. The species was probably once widespread in the Swan and Macquarie catchments before the spread of trout. Swan galaxias live in slow to moderately fast-flowing rocky streams containing abundant shelter within the stream and from stream side vegetation.

The Swan galaxias is the only endemic Tasmanian member of the family Galaxiidae that lives exclusively in fresh water streams. Other galaxiids are land-locked in lakes or have a marine stage as larvae. Swan galaxias spawn for the first time at about two years of age. They spawn in spring with eggs taking about two weeks to hatch and larvae developing over about a five week period. Hatchlings form schools in slow-flowing water until they develop adult colouring at about 35 mm in length. Typically there are three year classes present in each population. Swan galaxias are carnivorous and any insects which fall into the water from surrounding vegetation are an important part of their diet.

Key Sites

- Headwaters of the Swan River and Macquarie River

Key Threats

- Brown trout and redfin perch.
- Habitat alterations such as removal of stream side vegetation causing temperature rises, loss of shelter and decreased food supply.
- Changes to water quality, such as turbidity, nutrient, and pollution from any activities, including road works in the catchment.
- Changes to stream channels through vegetation removal or flood mitigation.

Management Recommendations for Commercial Forestry

- Detailed recommendations are provided to Forest Practices Officers under the Forest Practices Code.

Habitat Management

- If you manage land containing this species consider some form of long-term protection, e.g. wildlife sanctuary, management agreement, covenant, etc. Contact the Threatened Species Unit, we may be able to help. A number of Forestry Tasmania reserves and wildlife priority areas are in place for this species which may be nearby or on the boundary of your property. These could be extended with your help. Contact the Inland Fisheries Commission.
- Maintenance of natural barriers to introduced fish is essential. All populations of Swan galaxias have downstream barriers (waterfalls, steep cascades or marshes) which protect their habitats from the spread of introduced fish. Changes in water flows caused by vegetation clearing could affect these barriers.

- Do not remove gravel or large quantities of rock from the stream bed. This contains aquatic fauna, provides cover and disperses water flow. The removal of shingle from the river can alter the stream hydrology and lead to erosion of the stream bed and channel.

Vegetation Clearing and Buffers

- Avoid clearing native vegetation from stream side zones or stream banks. Vegetation provides shelter, shade (maintains water temperature) and essential food for fish and other aquatic fauna. It also filters surface runoff (reducing nutrients and sediments), limits light levels and maintains slope and bank stability.
- Stream zones should contain a mix of native understorey and overstorey plants where appropriate, including reeds, grasses, shrubs and trees. Diversity of vegetation along stream banks is important as trees, shrubs and ground cover all play different and important roles in stream bank stability. Establish vegetation as far down the base of the bank as possible. This may require special work to stabilise the toe of the bank or reduce its steepness to enable vegetation to establish.
- The width of vegetation buffers depends on the situation. The greater the buffer width, the greater the protection, the more diverse the buffer vegetation, the better the protection. In any case, for small, seasonally dry water channels buffers should be no less than 10 m wide each side, grading up to at least 60 m wide each side for larger stream zones. Two methods for calculating minimum buffer width are: a distance equivalent to the average dominant tree height, or if there are no trees, then the amplitude distance between bends.
- Buffers are especially important at points where surface water enters small river channels or landscape depressions, and where flow concentrates.
- An effective buffer zone should also provide for the continuing input of large woody debris and leaf litter into the stream.

Weed and Willow Removal

- Cut and paint weeds with poison, leaving roots (and stumps of willows) intact to aid bank stability. Painting will also eliminate resprouting from suckers, e.g. willows.
- Removal of willows or dense weed mats must coincide with a revegetation program so that stream banks are not exposed to excessive erosion, light or loss of foliage. Remember that most aquatic animals like cool, shady places.
- Prevent any large, heavy machinery or structures from entering the wetland or stream bed, e.g. tractors, excavators, bridge supports, etc., even if they are being used for restoration activities. This will not only directly kill localised species and alter habitat for other aquatic animals, but the sedimentation caused by the disturbance will accumulate on the stream bed and smother fragile habitats.
- Use only herbicides which are registered as suitable in watercourses (e.g. Roundup Biactive®). Seek advice from the Parks and Wildlife Service on types of herbicides and preferred alternatives.

Snags or Woody Debris

Woody debris, including snags, are a natural and important part of the river system. Snags are essential for creating a range of flow conditions enabling a diversity of plants and animals to establish. They provide shade and shelter and their gradual decay and trapping of leaf litter provides food for the Swan galaxias and many other aquatic animals (e.g. frogs, crayfish, insects).

- Do not remove woody debris or snags from the river system. If a snag is completely blocking water flow seek advice on how to realign it to a 20 to 40 degree angle to the stream bank.
- Lop selected branches from snags near the water surface if they tend to trap debris and cause log jams.
- If the woody debris requires removal from the main stream channel, try relocating it to a position of low water velocity in the stream or place it on the outside of banks to improve stability.
- In streams which have been modified or degraded consider reintroducing woody debris into the stream system. Seek advice on the best way to undertake this.

Fertilisers, Chemicals, etc.

- Use only chemicals which are registered as suitable in watercourses as fish (adults and eggs) and many other animals are extremely sensitive to chemicals, even in light doses (e.g. pyrethrin is lethal to lobsters).
- Time any fertiliser or chemical application to avoid periods of intense runoff. Instead of broadcast applications, try direct placement in the soil or place under a blanket of stubble mulching, etc.
- Trial the use of alternative 'environmentally friendly' applications, which may also be safer for stock and human health.

Managing Stock Access

Stock naturally favour wetlands and riversides and if poorly managed will completely degrade crossings, watering points and foul the water. This results in bank erosion, loss of plant species, soil compaction, weed invasion, and a build up of bacteria and viruses in the water. If at all possible 'Keep Stock Out'.

- Fencing and smart planning will enable you to manage the riparian zone and your stock. Hanging fences, electric and electronic fences, drop fences and alternative watering points, even troughs, should be used depending on the situation.
- Timing, intensity and duration of stock in sensitive riparian zones can also be regulated to maintain the area.

Culverts, Dams, Weirs, etc.

Many aquatic animals (especially platypus and lobsters) avoid or are unable to go through culverts. Culverts channel the water flow over the smooth concrete surface and increase flow velocity. Poorly designed or poorly embedded culverts prevent upstream movement and natural mixing of aquatic species and also force larger species like lobster onto roadsides or into open situations.

- Wherever possible use bridges instead of culverts. Try alternative inverted 'U' shaped designs or irregular shapes. If round culverts are necessary they should be fully embedded in the stream bed and ideally should have an artificial substrate provided down the mid-line of the pipe (e.g. cemented rocky gravel).
- Do not construct dams, weirs, etc. anywhere in the catchment. Please seek advice. Barriers will significantly alter environmental flow regimes and may make the site totally unsuitable for many plant and animal species.
- Please seek advice from the Inland Fisheries Commission prior to any work involving stream water flow and barriers as this species is dependant on maintaining existing river sections free from predatory fish.

Other Ways to Help

- If brown trout or redfin perch are observed in any of the sites where Swan galaxias occur, please notify the Inland Fisheries Commission immediately (address below).
- It is illegal to transfer any animals (fish, frogs, crayfish, etc. or other invertebrates) between water bodies or into a water body in which they do not naturally occur (including different sections of the same stream).
- It is illegal to use any fish (alive or dead) as bait in any fresh water body.
- If you are interested in protecting or restoring habitat for this species (e.g. land manager, Landcare group, etc.) please contact the Inland Fisheries Commission as there may be projects urgently waiting.

More Information

Crook, D. A. and Sanger, A. C. (1997). Recovery plan for the Pedder, Swan, Clarence, swamp and saddled galaxias. Inland Fisheries Commission, Hobart.

Fulton, W. (1990). Tasmanian Freshwater Fishes. Fauna of Tasmania Handbook No. 7. University of Tasmania, Hobart.

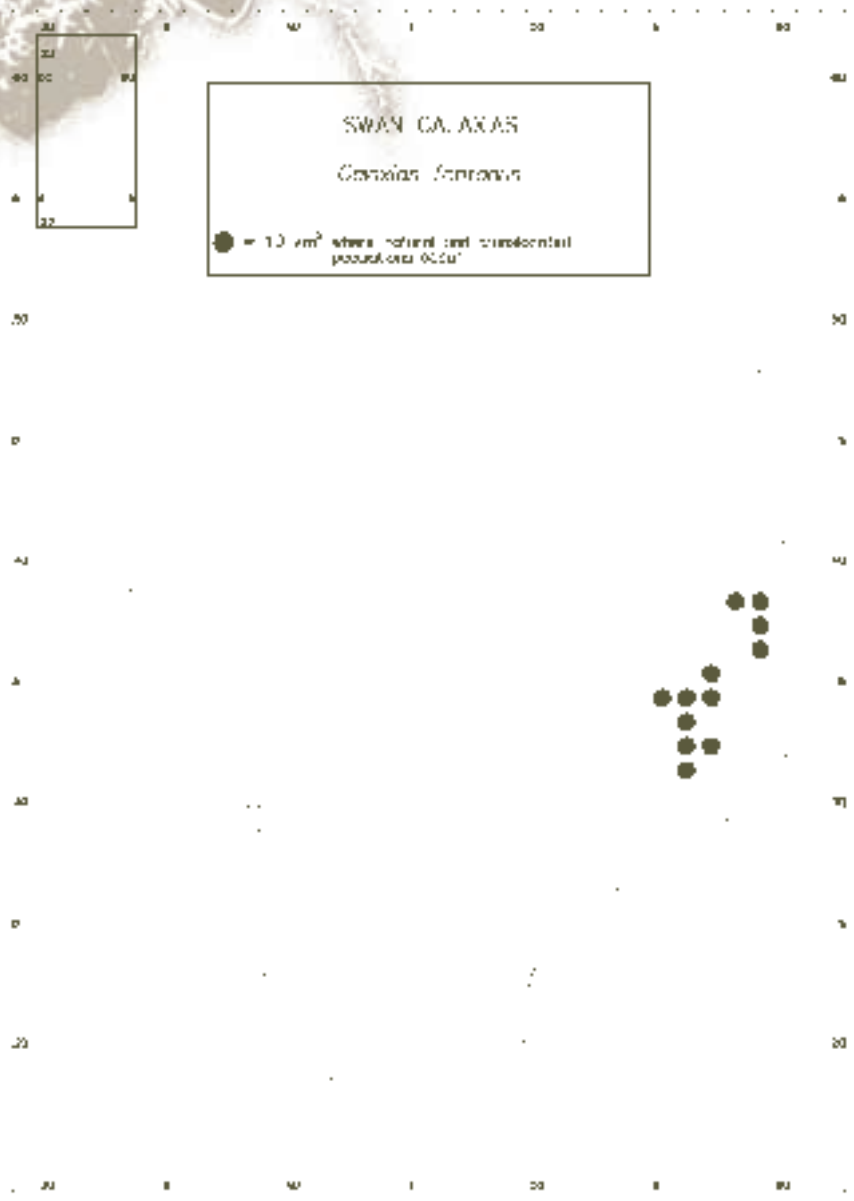
Inland Fisheries Commission, 6B Lampton Avenue, Derwent Park, Tasmania, 7009.

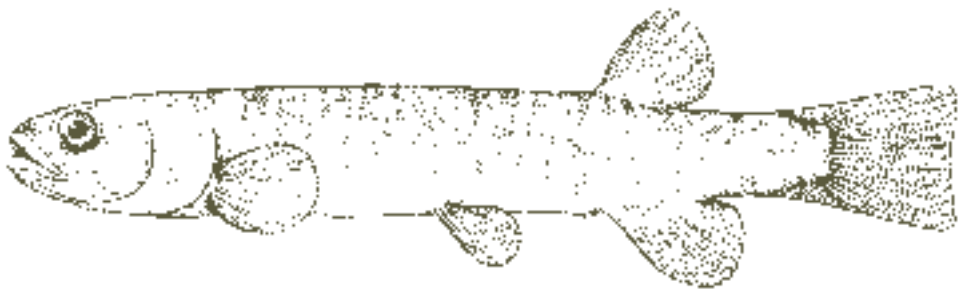
Threatened Species Unit (1999). Listing Statement: Swan Galaxias *Galaxias fontanus*. Parks and Wildlife Service, Dept of Environment and Land Management, Hobart.

Wager, R. and Jackson, P. (1993). The Action Plan for Australian Freshwater Fishes. Australian Nature Conservation Agency, Canberra.

1: 25 000 TASMAP sheets with known localities and potential habitat (map grids are confidential)

Colonels	Faddens	Fingal	Henry
Leake	Ross	Royalty	Snow
St John	Tooms		


SWAN CATCHMENT
Galaxias fontanus



AUSTRALIAN GRAYLING

Prototroctes maraena (Prototroctidae)

[Illustration from Fulton 1990]

Status

Tasmania's *Threatened Species Protection Act 1995* - Vulnerable
Commonwealth *Endangered Species Protection Act 1992* - Vulnerable

Description

A silver streamlined native fish which grows to about 30 cm in length and up to 350 g in weight. They are dark greenish to greyish olive along the back, lighter and silvery on the sides with a whitish belly. A dark mid-lateral streak is evident. Mostly fresh water and estuarine but with a marine stage in its life cycle. They have a distinctive cucumber smell.

Distribution, Habitat and Biology

Australian grayling are native to Tasmania and southeast mainland Australia. In Tasmania they live in the middle and lower reaches of rivers and streams that open to the sea. Much of their basic biology, including distribution and migratory behaviour, is unknown. Spawning takes place in moderately flowing fresh water in late spring to early summer with a large number of eggs laid on gravelly stream beds. The larvae are probably swept to sea and return as whitebait after four to six months. Their diet includes fresh water insects and aquatic plants. They live to approximately three years of age.

Key Sites

- Lower and middle reaches of rivers that enter the sea around the Tasmanian coastline.

Key Threats

- Habitat loss and disturbance, especially to the lower reaches of rivers.
- Dams and weirs preventing upstream movement and migration.
- Pollution of waterways by agriculture, forestry and urban development.
- Changes in flow patterns caused by dams and water extraction for irrigation.
- Habitat alterations such as wood removal and channel realignment for flood mitigation.

Management Recommendations for Commercial Forestry

- Detailed recommendations are provided to Forest Practices Officers under the Forest Practices Code.

Habitat Management

- The Australian grayling requires free movement between fresh water and marine habitats. Therefore construction of dams, weirs or culverts on rivers and streams should be avoided. Seek advice.
- Do not remove gravel or large quantities of rock from the stream bed. This contains aquatic fauna, provides cover and disperses water flow. The removal of shingle from the river can alter the stream hydrology and lead to erosion of the stream bed and channel.

Vegetation Clearing and Buffers

- Avoid clearing native vegetation from stream side zones or stream banks. Vegetation provides shelter, shade (maintains water temperature) and essential food for grayling other aquatic fauna. It also filters surface runoff (reducing nutrients and sediments), limits light levels and maintains slope and bank stability.
- Stream zones should contain a mix of native understorey and overstorey plants, including reeds, grasses, shrubs and trees. Diversity of vegetation along stream banks is important as trees, shrubs and ground cover all play different and important roles in stream bank stability. Establish vegetation as far down the base of the bank as possible. This may require special work to stabilise the toe of the bank or reduce its steepness to enable vegetation to establish.
- The width of vegetation buffers depends on the situation. The greater the buffer width, the greater the protection, the more diverse the buffer vegetation, the better the protection. In any case, for small, seasonally dry water channels buffers should be no less than 10 m wide each side, grading up to at least 60 m wide each side for larger stream zones. Two

methods for calculating minimum buffer width are: a distance equivalent to the average dominant tree height, or if there are no trees, then the amplitude distance between bends.
- Buffers are especially important at points where surface water enters small river channels or landscape depressions, and where flow concentrates.
- An effective buffer zone should also provide for the continuing input of large woody debris and leaf litter into the stream.

Weed and Willow Removal

- Cut and paint weeds with poison, leaving roots (and stumps of willows) intact to aid bank stability. Painting will also eliminate resprouting from suckers, e.g. willows.
- Removal of willows or dense weed mats must coincide with a revegetation program so that stream banks are not exposed to excessive erosion, light or loss of foliage. Remember that most aquatic animals like cool, shady places.
- Prevent any large, heavy machinery or structures from entering the wetland or stream bed, e.g. tractors, excavators, bridge supports, etc., even if they are being used for restoration activities. This will not only directly kill localised species and alter habitat for other aquatic animals, but the sedimentation caused by the disturbance will accumulate on the stream bed and smother fragile habitats.
- Use only herbicides which are registered as suitable in watercourses (e.g. Roundup Biactive®). Seek advice from the Parks and Wildlife Service on types of herbicides and preferred alternatives.
- If introduced cumbungi (bullrush) is invading the site it should be destroyed as early as possible, e.g. young or early growth stages. Manual (hand) or mechanical removal must remove the entire plant including the roots and rhizomes. If using Roundup Biactive® only apply during the flowering period (December to March).

Snags or Woody Debris

Woody debris, including snags, are a natural and important part of the river system. Snags are essential for creating a range of flow conditions enabling a diversity of plants and animals to establish. They provide shade and shelter and their gradual decay and trapping of leaf litter provides the food for Australian grayling and many other aquatic animals (e.g. frogs, crayfish, insects).

- Do not remove woody debris or snags from the river system. If a snag is completely blocking water flow seek advice on how to realign it to a 20 to 40 degree angle to the stream bank.
- Lop selected branches from snags near the water surface if they tend to trap debris and cause log jams.
- If the woody debris requires removal from the main stream channel, try relocating it to a position of low water velocity in the stream or place it on the outside of banks to improve stability.
- In streams which have been modified or degraded consider reintroducing woody debris into the stream system. Seek advice on the best way to undertake this.

Fertilisers, Chemicals, etc.

- Use only chemicals which are registered as suitable in watercourses as Australian grayling (adults and eggs) and many other animals are extremely sensitive to chemicals, even in light doses (e.g. pyrethrin is lethal to crayfish and lobster).
- Time any fertiliser or chemical application to avoid periods of intense runoff. Instead of broadcast applications, try direct placement in the soil or place under a blanket of stubble mulching, etc.
- Trial the use of alternative 'environmentally friendly' applications, which may also be safer for stock and human health.

Managing Stock Access

Stock naturally favour wetlands and riversides and if poorly managed will completely degrade crossings, watering points and foul the water. This results in bank erosion, loss of plant species, soil compaction, weed invasion, and a build up of bacteria and viruses in the water. If at all possible 'Keep Stock Out'.

- Fencing and smart planning will enable you to manage the riparian zone and your stock. Hanging fences, electric and electronic fences, drop fences and alternative watering points, e.g. troughs should be used depending on the situation.
- Timing, intensity and duration of stock in sensitive riparian zones can also be regulated to maintain the area.

Culverts, Dams and Weirs

Many aquatic animals (especially platypus and lobster) avoid or are unable to go through culverts. Culverts channel the water flow over the smooth concrete surface and increase flow velocity. Poorly designed or poorly embedded culverts prevent upstream movement and natural mixing of aquatic species, e.g. Australian grayling from spawning, and also force larger species

like lobster onto roadsides or into open situations.

- Wherever possible use bridges instead of culverts. Try alternative inverted 'U' shaped designs or irregular shapes. If round culverts are necessary they should be fully embedded in the stream bed and ideally should have an artificial substrate provided down the mid-line of the pipe (e.g. cemented rocky gravel).
- Do not construct dams, weirs, etc. anywhere in the catchment. Please seek advice. Barriers will significantly alter environmental flow regimes and may make the site totally unsuitable for many plant and animal species.

Other Ways to Help

- It is illegal to transfer any animals (fish, frogs, crayfish, etc. or other invertebrates) between water bodies or into a water body where they do not naturally occur (including different sections of the same stream).
- It is illegal to use any fish (alive or dead) as bait in any fresh water body.
- Fishing for the Australian grayling is illegal. Please do not take adult fish or whitebait.
- More information on the distribution of the Australian grayling is needed. If you identify this species please contact the Inland Fisheries Commission, it could assist with management.

More Information

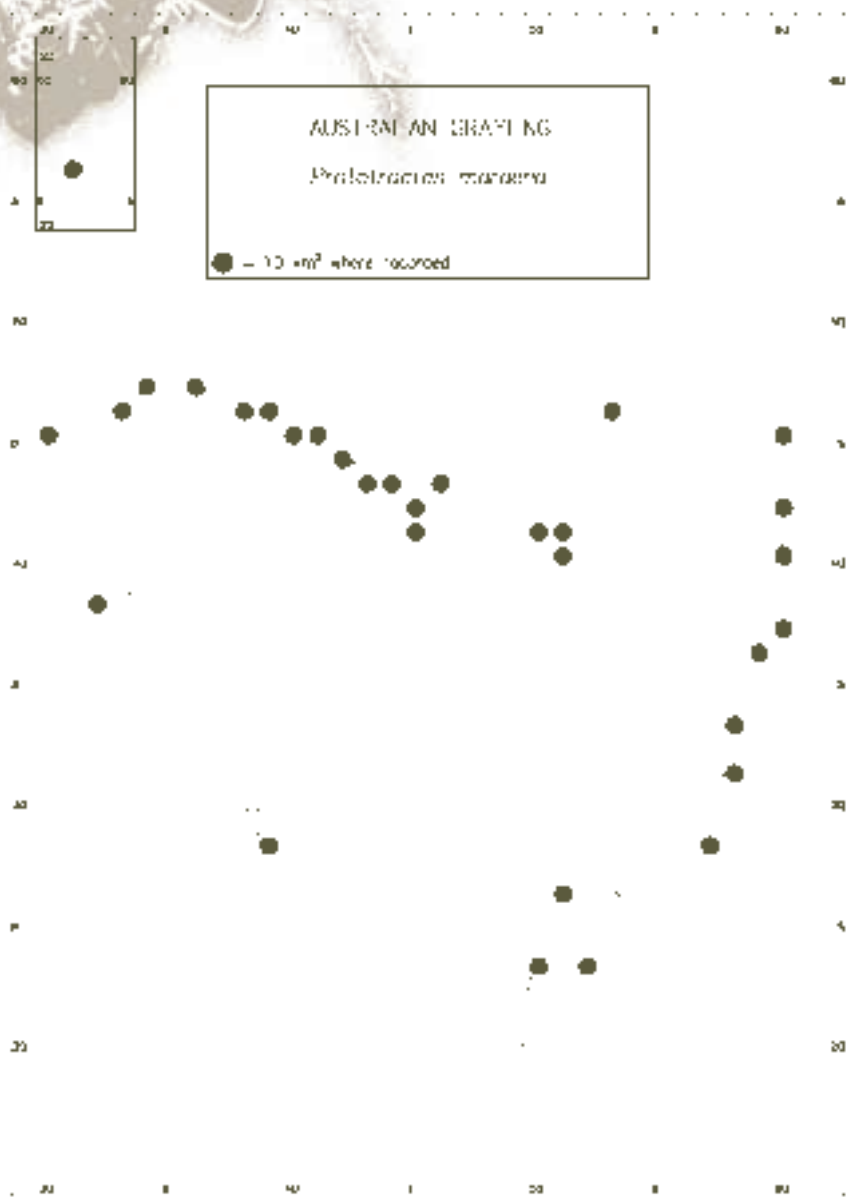
Fulton, W. (1990). Tasmanian Freshwater Fishes. Fauna of Tasmania Handbook No. 7. University of Tasmania, Hobart.

Inland Fisheries Commission, 6B Lampton Avenue, Derwent Park, Tasmania, 7009.

Wager, R. and Jackson, P. (1993). The Action Plan for Australian Freshwater Fishes. Australian Nature Conservation Agency, Canberra.

1: 25 000 TASMAP sheets with known localities and potential habitat

Ansons Bay	Apslawn	Bicheno	Binalong Bay
Blackmans Bay	Bluff	Bridport	Brilliant
Burnie	Bushy Park	Calder	D'Aguilar
Devonport	Glen Huon	Hardwicke	Harford
Harford	Henry	Huonville	Interview
Kindred	Latrobe	Launceston	Lisdillon
Livingstone	Lodi	Longley	Lonnavale
Loyetea	Mawbanna	Mayfield	New Norfolk
Orford	Oxberry	Pearly Brook	Pearshape
Prospect	Pyengana	Railton	Riana
Rocky Cape	Roger	Scamander (Falmouth)	Seymour
Sheffield	Smithton	St Helens	St John
Stowport	Sumac	Sundown	Swansea
Togari	Ulverstone	Uxbridge	West Frankford
Wynyard	Wynyard	Yolla	


AUSTRALIAN GRAYLING
= 10 km² where recorded

SPOTTED HANDFISH

Brachionichthys hirsutus (Brachionichthyidae)

[Photo from Bruce and Green 1998]

Status

Tasmania's *Threatened Species Protection Act 1995* - nominated
Commonwealth *Endangered Species Protection Act 1992* - Endangered

Description

The spotted handfish is a small, slow-moving marine fish growing to about 13 cm maximum adult length. It is an unusual fish species in that the pectoral (side) fins are modified into hands with 'finger-like' extremities that are used for walking across the sea bottom rather than swimming. The head appears large and rounded, tapering to a long slender body and tail. The body is pale and covered with small brown or orange spots and stripes. Pore-like gill openings are situated behind the pectoral fins. Handfish are closely related to anglerfish and have a spine on top of the head which bears a small lure used to attract food.

Distribution, Habitat and Biology

Members of the handfish family are restricted to the waters off southeastern Australia with five of the eight currently recognised species being endemic to Tasmanian waters. They were discovered by the French explorer Peron and formally described in 1804, making them one of the earliest described fishes in Australia. The species was once known to be relatively common in southeastern Tasmania but by the late 1980s only three small colonies could be identified in the lower Derwent River estuary and adjoining bays and channels. In 1998 a possible fourth small restricted colony was located in the same water channels. The preferred habitat of the spotted handfish is soft substrate (mud and sand), often in shell-filled depressions or near rocks, at depths between 2 to 30 m but most commonly at 5 to 10 m. Spotted handfish eat mainly shrimps and other small crustacea and polychaete worms.

Spotted handfish spawn in September to October. Unlike most marine fish, which lay thousands of tiny eggs that float freely in ocean currents, handfish lay only 80 to 250 very large eggs which are clustered in masses and wrapped around isolated vertical objects like stalked ascidians (sea-squirts) on the sea floor. This association between egg masses and a suitable laying structure is a very important survival link for the species. The eggs are held together by fine threads and guarded by the female until hatching 7 to 8 weeks later. Unlike most other marine fish which have a dispersing larval stage, handfish hatch as juveniles resembling small adults and move straight to the sea bottom. Adults and juveniles are largely sedentary and are slow to expand their range and colonise new areas. Spotted handfish grow 35 to 50 mm by the end of their first year and 70 to 80 mm in their second. Captive breeding being conducted as part of a national recovery program is successfully producing juveniles for release into the wild. Other recovery actions include providing the use of artificial spawning substrate in areas where the sea bottom has been degraded.

Key Sites

- Derwent River estuary and adjoining bays and channels.

Key Threats

- Habitat modification through siltation affecting the substrate, particularly where it causes the loss of egg attachment structures.
- Habitat disturbance by dredge or net fishing and boat anchors, especially where it destroys egg attachment structures.
- Water and sediment pollution, especially by heavy metal contamination and urban effluent.
- Predation on eggs and or disturbance of bottom-dwelling communities by introduced species, especially the Northern Pacific seastar.
- Illegal collecting for aquaria (home or commercial trade).

Management Recommendations and Other Ways to Help

- Take particular care when boating or fishing in the Derwent River estuary. Don't let anchors or nets drag along the sea bed as this destroys the fragile benthic communities required for handfish breeding.
- Dispose of all waste and boating rubbish appropriately on shore. This not only pollutes the seabed but is a direct threat to marine life.

- Stormwater from gutters and drains in Hobart flows into the Derwent and affects water quality. Ensure that no pollutants such as detergents, oil, pesticides or fertilisers reach stormwater drains or are washed into gutters.
- Assist with eliminating exotic pests like the Northern Pacific seastar which compete and displace handfish and other native marine life. Lend a hand on field days or notify authorities if new outbreaks are observed. Contact the CSIRO or Tasmanian Museum and Art Gallery for times and places.
- Do not collect native creatures from the sea floor when snorkelling or diving. These are fragile and sensitive habitats where creatures such as sea squirts are vital to the survival of the handfish.
- All handfish are protected under the Tasmanian *Threatened Species Protection Act 1995* and the *Living Marine Resources Act 1997*, which prohibit the collection or keeping of handfish from Tasmanian waters without a permit. If you have any information on handfish in captivity please inform the CSIRO.

More Information

Bruce, B. D. and Green, M. A. (1998). Spotted Handfish Recovery Plan. CSIRO Marine Research for Environment Australia.

Bruce, B. D., Green, M. A. and Last, P. R. (1998). Threatened fishes of the world: *Brachionichthys hirsutus* (Lacepede, 1804) (Brachionichthyidae). Environmental Biology of Fishes 52: 418.

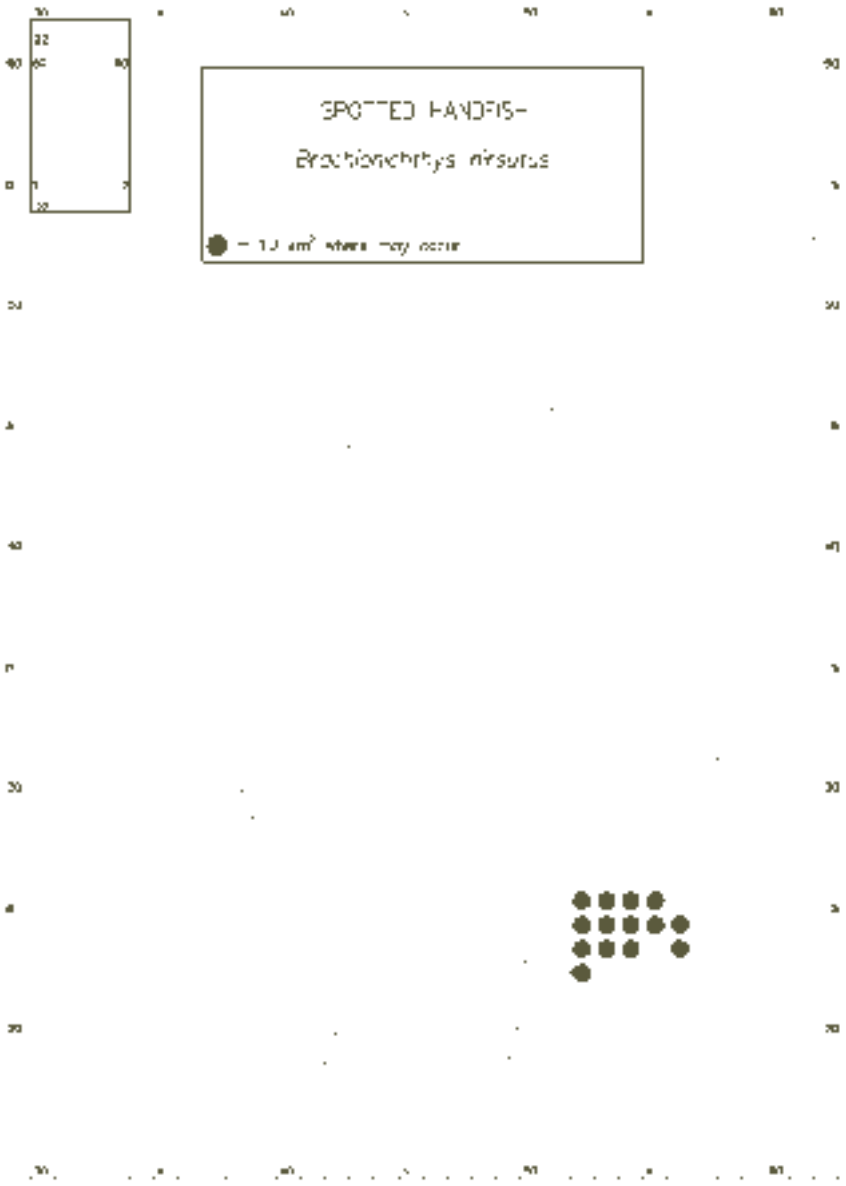
CSIRO Marine Research Fact Sheet (1997). Recovering Australia's first endangered marine fish. Castray Esplanade, Hobart Tasmania.

Last, P. R. and Bruce, B. D.(1996). Spotted handfish. Rare and Endangered. Nature of Australia Summer Edition 1996-97, p20.

1: 25 000 TASMAP sheets with known localities and potential habitat (map grids are confidential)

Barnes Bay	Blackmans Bay	Carlton	Communication
Cremorne	Hobart	Murdunna	Taranna
Taroona			

SPOTTED HANDFISH



LAKE PEDDER EARTHWORM

Diporochaeta pedderensis (Megascolecidae)

[Illustration by Craig Williams]

Status

Tasmania's *Threatened Species Protection Act 1995* - Endangered
Commonwealth *Endangered Species Protection Act 1992* - not listed

Description

A segmented or annelid earthworm species, described from a single specimen. The specimen is about 50 mm long and 1.5 mm wide with faint brown colouring on the back and at the front end. A distinctive internal feature of the species is that it has multiple gizzards, occurring in the fifth, sixth and seventh segments. The Lake Pedder earthworm has a total of 129 body segments.

Distribution, Habitat and Biology

The Lake Pedder earthworm was first described in 1974 from a single specimen collected from the main beach of Lake Pedder near where Maria Creek entered the lake. This site is now under several metres of water and the species has not been found since flooding of the lake, despite active searching historically and more recently (Dyne 1991, Blakemore 1996). The species may well be extinct due to complete destruction of the original site. From the locality of the original specimen it is inferred that the Lake Pedder earthworm prefers sandy, waterlogged sediments.

Nothing is known about the biology or life history of the Lake Pedder earthworm, except that the specimen's gut contained sand. This would suggest that the species probably feeds on microbes or algae on sand grains, or organic matter distributed in the sand. Generally, earthworms are all hermaphrodites (contain both sexes in the one individual). Eggs are laid into the egg cocoon and secreted directly into the soil.

Key Site

- Only known from the original Lake Pedder beach area within 100 m of the shoreline.

Key Threats

- Lack of information on distribution, life history and status of the species.
- The only known location of the Lake Pedder earthworm was inundated when the original lake was flooded.

Management Recommendations

- Where possible facilitate further surveys in any likely habitat around the Lake Pedder shoreline.

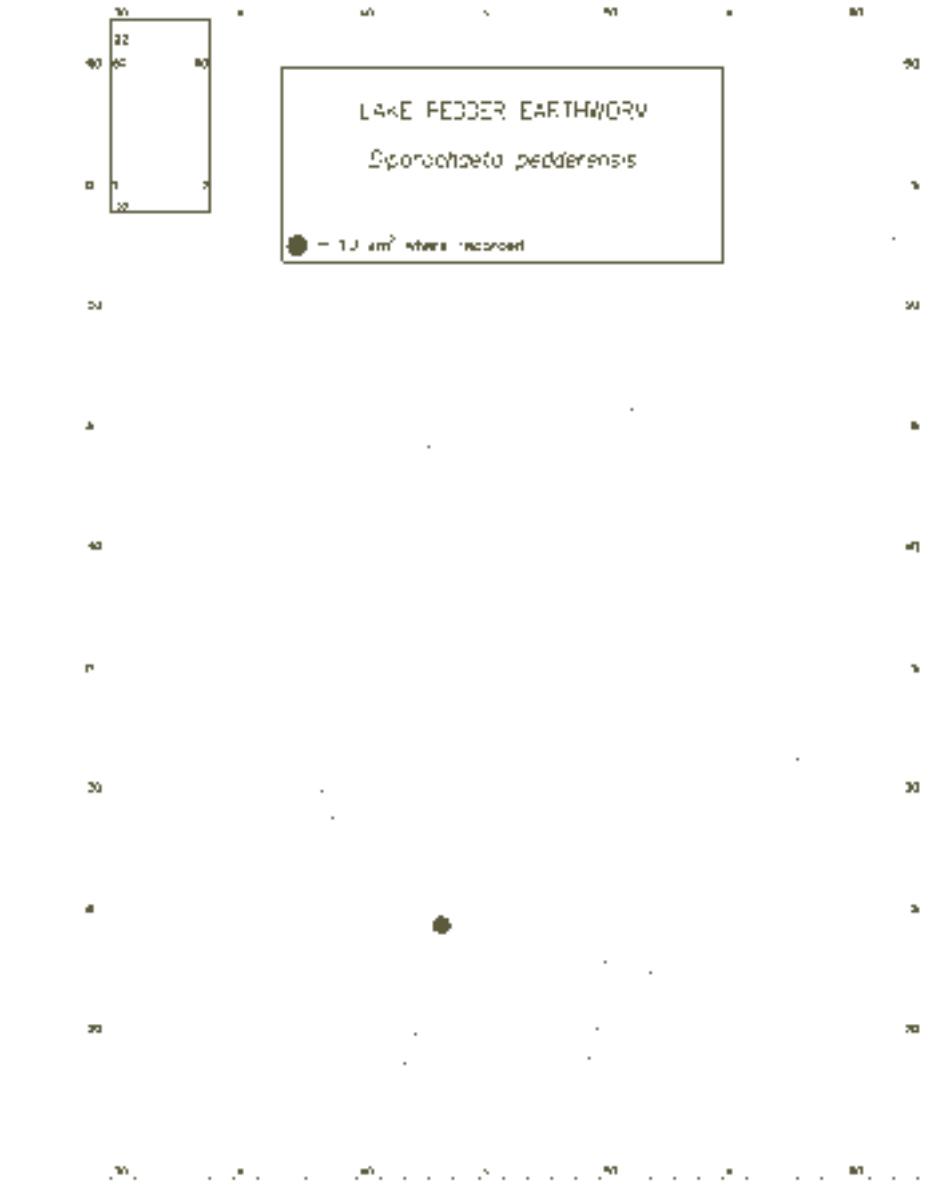
More Information

Blakemore, R. J. (1996). The taxonomic status of the earthworm fauna of Lake Pedder, Western Tasmanian World Heritage Area. Report to the Parks and Wildlife Service, Tasmania.

Dyne, G. R. (1991). The status of the Lake Pedder earthworm, *Perionychella pedderensis* and investigations into the new or little known earthworms from the western Tasmanian World Heritage Area. Report to the Department of Parks, Wildlife and Heritage, Hobart, Tasmania.

1:25 000 TASMAP sheets with known site and potential habitat

Anne	McPartlan	Scotts	Serpentine
Solitary	Strathgordon		


LAKE PEDDER EARTHWORM
Sporochaeta pedderensis

VELVET WORMS (also known as Onychophora or Peripatus) (3 species)

Blind velvet worm *Tasmanipatus anophthalmus* **(Peripatopsidae)**
Giant velvet worm *Tasmanipatus barretti* **(Peripatopsidae)**
Northwest velvet worm *Ooperipatellus cryptus* **(Peripatopsidae)**

[Illustrations by Karen Richards]

Status

Blind velvet worm

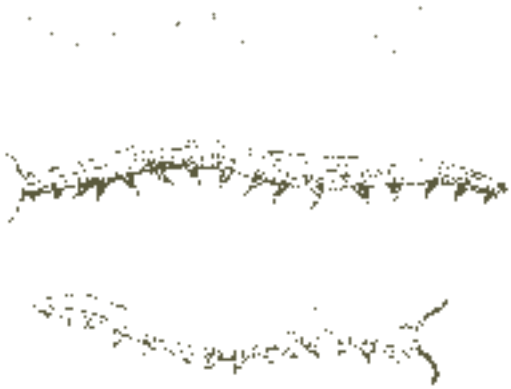
Tasmania's *Threatened Species Protection Act 1995* - Endangered
Commonwealth *Endangered Species Protection Act 1992* - not listed

Giant velvet worm

Tasmania's *Threatened Species Protection Act 1995* - Rare
Commonwealth *Endangered Species Protection Act 1992* - not listed

Northwest velvet worm

Tasmania's *Threatened Species Protection Act 1995* - Rare
Commonwealth *Endangered Species Protection Act 1992* - not listed



Description

Velvet worms (also known as onychophora or peripatus) are beautiful caterpillar-like creatures with a long cylindrical soft body and a head terminating with two long antennae. The skin is covered with minute papillae, giving a velvety appearance. The legs are not jointed and have well-developed feet and claws. Velvet worms move by using a hydrostatic system similar to that of segmented worms.

The blind velvet worm measures about 25 to 30 mm at rest, extending to 50 mm when walking. It has 15 pairs of legs terminating with claws. The species lacks any external eyes or body pigmentation, being completely white in colour, except for the tip of the claws and the jaws which are dark brown.

The giant velvet worm is the largest of the three velvet worm species, measuring 35 to 40 mm at rest but extending up to 75 mm in length when walking. The giant velvet worm has 15 pairs of legs. Body colour is pink-mauve above with a darker, narrow mid-dorsal stripe and creamy-white underneath. Sexes are difficult to distinguish externally.

The northwest velvet worm is creamy coloured with bands of mauve on the back and sides. It is comparatively small (up to 10 mm long) and is easily distinguished from others in the group by having only 14 pairs of legs. The species is very hard to find and coils up tightly when disturbed.

Distribution, Habitat and Biology

These three species of velvet worm are all terrestrial and as their soft bodies are covered by a thin cuticle which is prone to water loss they all live in moist environments. Their ideal microhabitats are deep within large decaying logs in situations where the logs can decompose without drying out or being disturbed, e.g. by fire. The preferred log type is eucalypt. They will occasionally also take refuge under moss-covered or shaded stones, in deep litter which accumulates at the bases of trees, or on log surfaces among the friable, composting material. These types of habitats are mostly confined to narrow wet gullies, on creek and river flats and along flow-lines on steep hillsides. More often these habitats appear as patches or 'islands' throughout the general landscape, with patches sometimes being as small as ten square metres.

Velvet worms are of exceptional evolutionary interest because they are considered intermediates or 'missing links' between two major invertebrate groups, the arthropods (jointed invertebrates) and annelids (worms). They are also ancient creatures that have changed little since their fossil forms. Velvet worms are nocturnal and predatory, feeding on insects and other litter-dwelling invertebrates such as termites, crickets and amphipods. Prey items are caught with power and precision by ejecting jets of sticky fluid from a pair of modified appendages on the head. Furthermore, the giant velvet worm can also eject a slime from specially modified papillae on legs 6 to 12 or 13 which is used for defence. The mode of reproduction varies between species. The giant and blind velvet worms give birth to approximately 14 to 16 live young, whereas the northwest velvet worm lays eggs.

Blind velvet worms have a very small range. They are restricted to the St Marys area in the northeast, occupying in total 156 km^2 but with the most compact core of distribution occupying only 41 km^2. A large proportion of the population lives in a core area surrounding Mt Elephant and the catchments of Lower Marsh, Wardlaws and Piccaninny Creeks. They occur from near sea level to over 800 m altitude (on South Sister). Prime blind velvet worm habitat is eucalypt forest that contains numerous rotting eucalypt logs and has not had any high-intensity or frequent fires within at least the last 20 years. The logs should preferably have a soft rot centre and be greater than about 40 cm in mid-log diameter. Areas where the forest has few rotting logs and has been burned frequently and/or at high intensity are unlikely to have viable blind velvet worm populations. It is speculated that the white colour or lack of body pigment of this species is a remnant of a previous cave adaptation phase, which is supported by the finding of blind velvet worms in 'micro-caverns' in dolerite talus on the Nicholas Range.

Giant velvet worms are restricted to an area of about 600 km^2 in the northeast near Scamander. They occur from near sea level to about 500 m altitude in a range of wet sclerophyll forest and scrub types. North and northeast of Mathinna they may be almost continuously distributed through blocks of wet eucalypt forest which grade into rainforest or mixed forest on some flow lines. They occur throughout the forest on ridgetops, slopes and flow-lines, with any aspect. Their preferred log type is mature *Eucalyptus sieberi* (Tasmanian ironbark) and also *E. globulus* (blue gum) and *E. viminalis* (white gum). There is an interface between the distribution of the blind and giant velvet worm, which is about 20 km long rising from near sea level north of Chain of Lagoons to about 500 m at Dublin Town. This interface is contiguous but not overlapping (parapatric), so that specimens of each species may be found in the same creek line, but not together.

The northwest velvet worm occurs over an area of around 2000 km^2 in the far northwest, with the main population centred around the Christmas Hills, Arthur River, Rapid River areas. They are also known at sites near Burnie. This species lives in a range of wet forest types from old-growth rainforest and mixed forest to wet eucalypt regrowth, but their distribution is patchy even throughout apparently suitable habitat.

Key Sites

Blind velvet worm

- Area surrounding Mt Nicholas through St Patricks Head and Mt Elephant south to Mt Allen.
- 'Hot spots' particularly in the catchments of Little Marsh, Lower Marsh, Wardlaws and Piccaninny Creeks.

Giant velvet worm

- George River, Golden Fleece Rivulet, Basin Creek and Avenue-Scamander River catchments.
- Catchments in the upper South Esk north of Mathinna, including Dans Rivulet and Evercreech Rivulet.
- Major coastal creek catchments between St Helens and Chain of Lagoons.
- 'Hot spots' particularly in the Powers Rivulet and Hunt Mine Creek catchments.

Northwest velvet worm

- Christmas Hills
- Arthur River area
- Rapid River area

Key Threats

- Conversion of native forest to plantation (eucalypt tree farm or pine) due to the removal of rotting log habitat from the ground (except northwest velvet worm).
- Clearing of forest for agriculture, resulting in loss of log and litter layers.
- Too frequent or high-intensity fires which eliminates the decaying log habitat. This includes heaping and burning windrows.

Management Recommendations for Commercial Forestry

- Detailed recommendations are provided to Forest Practices Officers under the Forest Practices Code.

Habitat Management

- If you manage land containing these species consider some form of long-term protection, e.g. wildlife sanctuary, management agreement, covenant, etc. Contact the Threatened Species Unit, we may be able to help. A number of forest reserves and wildlife priority areas are in place for these species which may be nearby or on the boundary of your property. These could be extended with your help. Check the mapsheets: Beaumaris, Ironhouse, Picanninny, Pyengana and St Helens for site details.

- In areas of prime velvet worm habitat (see habitat description and key sites) there should be no disturbance to rotting logs which constitute prime micro-habitat (logs with a soft-rot centre, rotting at ground level and slowly being turned into soil). This is best done by protecting clumps of habitat surrounding the logs (as large as possible) to ensure the shading and cooling elements are retained at the ground layer.
- Retain native forest in large corridors throughout these species' range, particularly areas identified as prime habitat, i.e. older unburnt forest with many fallen decaying logs. If clearing is necessary then light selective logging is preferred combined with retaining native corridors or clumps as large as possible. Target those areas which contain abundant decaying logs and also intact trees for future log supply. Southeast facing slopes should be protected where possible.
- Do not windrow and burn any residue after logging but roll, chop or mulch the residue to preserve velvet worms and other invertebrate fauna. All three species of velvet worm can tolerate a degree of light to moderate selective logging and cool, low intensity burning, provided these activities do not significantly impact on the decaying log environment.
- Retain, protect and establish native vegetation along stream side zones to act as buffers and corridors which can link properties with suitable habitat. Stream zones should contain a mix of native understorey and overstorey plants where appropriate, including reeds, grasses, shrubs and trees. Diversity of vegetation along stream banks is important as trees, shrubs and ground cover all play different and important roles, including the creation of moist, cool microhabitats needed by velvet worms. Establish vegetation as far down the base of the bank as possible. This may require special work to stabilise the toe of the bank or reduce its steepness to enable vegetation to establish.
- The width of vegetation buffers depends on the situation. The greater the buffer width, the greater the protection, the more diverse the buffer vegetation, the better the protection. In any case, for small, seasonally dry water channels buffers should be no less than 10 m wide each side, grading up to at least 60 m or more wide each side for larger stream zones. Two methods for calculating minimum buffer width are: a distance equivalent to the average dominant tree height, or if there are no trees then the amplitude distance between bends.
- High-intensity or frequent fuel reduction burning should be avoided throughout these species' ranges. Hot fires reduce the number, size and quality of rotting logs; they also destroy the litter layer and open the understorey and micro-habitat to drying. Low-intensity, infrequent fuel reduction burning is recommended. The frequency of burning depends on the age and type of vegetation as well as other conditions such as soil fertility, aspect, drainage, etc. In general, fire should be totally excluded from wet forest, old growth forest and rainforest. Dry forest need only be burnt on a 20 to 30 year interval and then only in a mosaic or patchwork of cool burning during winter or early autumn. Fire should never reach the canopy of the forest. Seek advice before undertaking any fuel reduction burning.

Other Ways to Help

- When collecting firewood make sure that ample old logs at different stages of decay are left on the forest floor. Never 'clean up' the bush by over-correcting or removing decaying wood. Decay is a natural part of the composting process and provides food, refuge and corridors for movement for velvet worms and a host of other invertebrates.
- Please do not collect any of these species. It is illegal unless under special scientific permit issued by the Threatened Species Unit. Collecting also destroys the decaying log environment, making the site unsuitable for future colonisation.
- Learn more about these fascinating creatures. Contact the Tasmanian Field Naturalist Club for details of naturalists' groups near you.

More Information

Mesibov, R. (1987). Distribution and conservation status of two undescribed onychophoran species in north-east Tasmania. Published by the author, Smithton, Tasmania.

Mesibov, R. (1988). Tasmanian onychophora. Report to Department of Lands, Parks and Wildlife, Hobart, Tasmania.

Mesibov, R. (1993). Contractor's Report: Rare velvet worm project. Report to the Forestry Commission, Tasmania.

Mesibov, R. (1997). The blind velvet worm (*Tasmanipatus anophthalmus* Ruhberg *et al.* 1991). A background report for conservation planners. Unpublished report to the Threatened Species Unit, Parks and Wildlife Service Tasmania.

Mesibov, R., and Ruhberg, H. (1991). Ecology and conservation of *Tasmanipatus barretti* and *T. anophthalmus*, parapatric onychophorans (Onychophora: Peripatopsidae) from northeastern Tasmania. Papers and Proceedings of the Royal Society of Tasmania 125: 11-16.

Ruhberg, H., Mesibov, R, Briscoe, D. A. and Tait, N. N. (1991). *Tasmanipatus barretti* gen. nov. sp. nov. and *T. anophthalmus* sp. nov.: two new and unusual onychophorans (Onychophora: Peripatopsidae) from northeastern Tasmania. Papers and Proceedings of the Royal Society of Tasmania 125: 7-10.

Tasmanian Field Naturalists Club, GPO Box 68, Hobart, Tasmania 7001.

1: 25 000 TASMAP sheets with known sites and potential habitat

Blind velvet worm

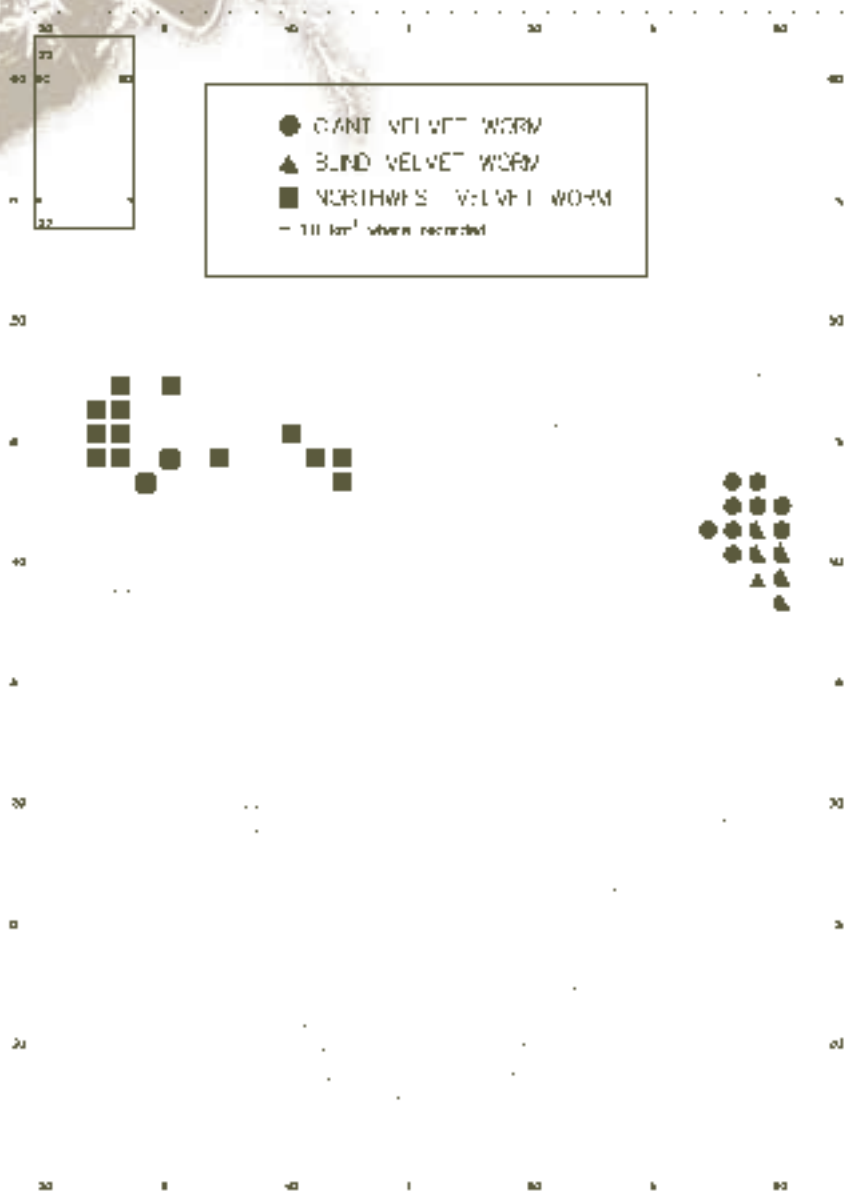
Dublin Town
Fingal
Ironhouse
Piccaninny
Seymour
St Marys

Giant velvet worm

Blue Tier
Brilliant
Dublin Town
Gray (Ironhouse)
Gray (Piccaninny)
Pyengana
Saddleback
Scamander (Beaumaris)
Scamander (Falmouth)
St Helens
Victoria

Northwest velvet worm

Beryl
Burnie
Calder
Dempster
Folly
Holder
Kindred
Lileah
Mawbanna
Mella
Milabena
Rocky Cape
Roger
Smithton
Stowport
Sumac
Tayatea
Togari
Ulverstone
Wynyard
Yolla


GIANT VELVET WORM
BLIND VELVET WORM
NORTHWEST VELVET WORM

SPIDERS (3 species)

Cascade funnel-web spider *Hadronyche pulvinator* **(Hexathelidae)**
Lake Fenton trapdoor spider *Plesiothele fentoni* **(Hexathelidae)**
Plomleys trapdoor spider *Migas plomleyi* **(Migidae)**

(Note: the little six eyed spider *Olgania excavata* is included in the cave ecosystem profile)

[Illustration of Lake Fenton Trapdoor spider by Maria Moore, photo of closely related Migas nitens from Hickman 1927, no photo of Cascade funnel-web available]

Status

Cascade funnel-web spider

Tasmania's *Threatened Species Protection Act 1995* - Extinct
Commonwealth *Endangered Species Protection Act 1992* - not listed

Lake Fenton trapdoor spider

Tasmania's *Threatened Species Protection Act 1995* - Extinct (status to change as re-discovered)
Commonwealth *Endangered Species Protection Act 1992* - not listed

Plomleys trapdoor spider

Tasmania's *Threatened Species Protection Act 1995* - Rare
Commonwealth *Endangered Species Protection Act 1992* - not listed

Description

The only description of the Cascade funnel web spider (originally described as *Atrax pulvinator*) is of a female (Hickman 1926). The specimen was reported to have a total body length of 17.0 mm, comprising a cephalothorax measuring 7.0 by 6.0 mm and an abdomen of 11.0 by 9.0 mm. General body colouration is brown with a shining appearance but the spinnerets are a yellowish brown and hairy. Legs range in length from 13.5 to 17.8 mm with long black bristles and brown hairs. The teeth situated on the tarsal claws vary according to leg number. Leg pairs 1 and 2 have five teeth in a diagonal row across the claw, with the inferior claw having two teeth. The superior tarsal claws of leg pairs 3 and 4 have one large tooth and three minute teeth, with the inferior claw being bare.

The Lake Fenton trapdoor spider has a body length ranging from 1.1 to 1.5 cm with legs about 1.5 cm long. The female is larger than the male. The abdomen is yellow-brown and strongly patterned on the back with 5 to 6 pairs of dark oblique stripes and a central dark stripe. There are six spinnerets which are yellowish brown clothed with black hairs. The Lake Fenton trapdoor spider can be distinguished from similar, more common spiders found in the same area by its burrow lining of brown rather than white silk, the chevron pattern on its abdomen, and the long spinnerets (appendages for handling the silk) at the end of the abdomen.

The description of Plomleys trapdoor spider is only of the female as no male specimens have been found. A stout spider with an oval abdomen and of general funnel-web appearance. Total body length is about 6.4 mm with the abdomen 3.3 mm long and 3.3 mm wide. Body colour is brown to black but recently moulted specimens are a green-brown colour. Females have preening combs on their fourth leg but do not have spines on any legs. The fangs have two longitudinal ridges along their length and a medial tooth at the base.

Distribution, Habitat and Biology

These three species of spider belong to families within the infraorder Mygalomorphae (trapdoor and funnel web spiders). Mygalomorphs are characterised by retaining four booklungs and longitudinal (paraxial) fang action. They also have a unique combination of characters such as labial and maxillary cuspules, a reduced number of palpal sclerites in the male bulb, sub-segmentation of the basal segment of the posterior lateral spinnerets and sternal sigilla. Detailed taxonomic descriptions of the infraorder and families can be found in Raven (1985). Generally, these spiders are long-lived, spending their whole life in either burrows in the ground or under rocks and logs. The burrows are enlarged by the spider as it grows and are used not only for refuge but also as a lair from which to ambush prey (instead of a web). When males mature at several years of age they wander in search of mates and after mating usually die.

Even though it was reliably described little information is available on the Cascade funnel web spider as only one specimen was ever collected. Hickman reported finding a burrow of this species in soft soil near the bank of a creek in the Cascades area of Hobart in December 1925. The burrow was about 180 mm deep and 15 mm in diameter, descending almost vertically. The

burrow was lined inside with a fairly strong silken tube which could be easily removed. At the surface the silken tube ran along the ground for about 50 mm underneath a bed of moss. The tube appeared closed but did not possess a 'lid'. Two burrows were found, one containing a beautiful pillow-shaped egg sac about 25 mm long and 15 mm wide which was attached by its four corners to the side of the silk tube just below the surface. No other information is available. It is presumed that this species has become extinct because its type locality and entire range has now been destroyed through suburban growth.

Until recently the Lake Fenton trapdoor spider was thought to be extinct because the species had not been seen since its discovery by Hickman in 1936. Hickman originally collected male and female specimens near the southern end of Lake Fenton. He reported their nests to be fairly numerous in mossy banks among deciduous beeches and grass-trees near the accommodation huts. The species was re-identified in its type locality in 1987 by R. Raven and is only known from the small area below Lake Fenton in Mt Field National Park. Surveys conducted in 1995 also located the species in the same area.

Lake Fenton trapdoor spiders live in burrows about 5 cm long situated in rocky areas with deep well-drained moss amongst deciduous beech *(Nothofagus gunnii)* and pandanis *(Richea pandanifolia)*. Burrows do not have a lid and entrances are about 1 cm in diameter surrounded by moss fronds glued back in a star-shaped arrangement. The spiders may occur in other areas of similar habitat but little more is known.

Plomleys trapdoor spider has only been found on the slopes surrounding Cataract Gorge near Launceston. Plomley's trapdoor spider lives in small, thin bag or sac-like chambers of silk, about 2 cm long, closed with a thin lid. These burrows are made specifically in the moss covering the boulders and crevices in open bushland. The sacs are a similar colour to their surroundings.

Key Sites

- The Cascade funnel web spider has only been found on creek banks in the Cascades area near Hobart.
- The Lake Fenton trapdoor spider has only been found below Lake Fenton in Mt Field National Park.
- Plomleys trapdoor spider occurs on bouldery slopes in Cataract Gorge (South Esk River below First Basin).

Key Threats (all species)

- Trampling or damage to the soft moss where the spiders make their burrows.
- Loss of original type locality and entire range through urban development.
- Lack of information through insufficient recent surveys.
- Plomleys trapdoor spider is also threatened by flooding, urban development and fire in the Cataract Gorge area.

Habitat Management and Other Ways to Help (all species)

- Avoid walking over areas of deep moss in Mt Field National Park or other locations. Moss is a fragile and sensitive substrate which is easily damaged through compaction and trampling.
- Ensure walking tracks are routed away from the known sites and areas of likely habitat.
- Maintain slopes with existing logs and boulders with moss cover.
- Become familiar with identifying these species and their burrows as more survey work is required, especially around type localities.
- Spiders are a fascinating part of Tasmania's invertebrate fauna and easily identified into groups. Hickman (1967) provides an easy to follow diagrammatic key to some common spiders of Tasmania.

More Information

Gray, M. R. (1981). Getting to know funnel-web spiders. Australian Natural History 20: 265-270.

Hickman, V. V. (1926). Studies in Tasmanian spiders. Part 1. Papers and Proceedings of the Royal Society of Tasmania 1926: 52-86.

Hickman, V. V. (1936). A new mygalomorph spider belonging to the genus *Hexathele Ausserer*. Papers and Proceedings of the Royal Society of Tasmania 1935: 131-137.

Hickman, V. V. (1967). Some common Tasmanian spiders. Tasmanian Museum and Art Gallery, Macquarie Street, Hobart.

Main, B. Y. (1976). Spiders. Collins, Sydney.

Raven, R. J. (1985). The spider infraorder Mygalomorphae (Araneae): cladistics and systematics. Bulletin of the American Museum Natural History 182: 1-180.

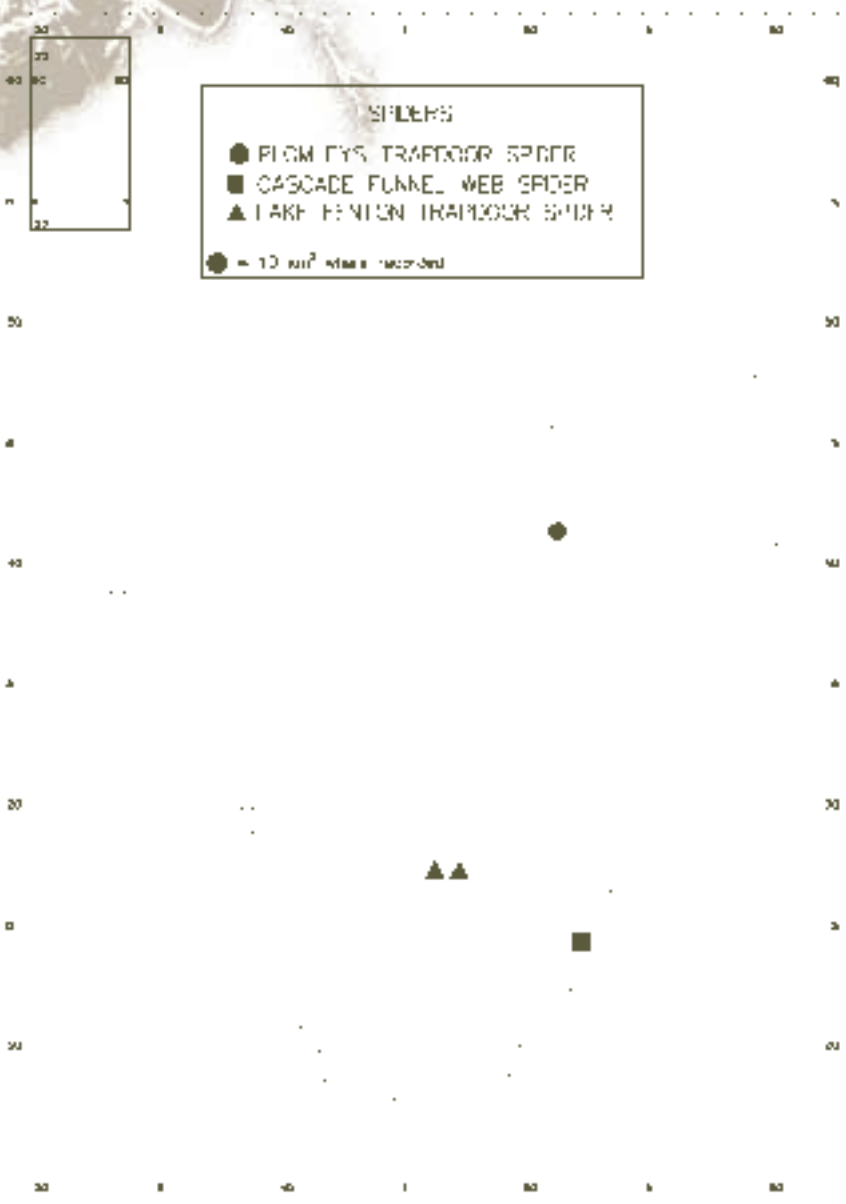
Raven, R. J. and Churchill, T. B. (1989). A new species of *Migas* (Araneae, Migidae) with notes on *Heteromigas* in Tasmania. Bulletin of the British Arachnological Society 8(1): 5-8.

1: 25 000 TASMAP sheets with known sites and potential habitat

Cascade funnel-web spider
Hobart

Lake Fenton trapdoor spider
Dobson, Maydena

Plomleys trapdoor spider
Launceston


SPIDERS
PLUM DYS TRAPDOOR SPIDER
CASCADE FUNNEL WEB SPIDER
LAKE PEDDER TRAPDOOR SPIDER

FRESHWATER LOBSTERS 'Tayatea' (3 species)

Giant freshwater lobster *Astacopsis gouldi* **(Parastacidae)**
Eastern freshwater lobster *Astacopsis franklinii* **(Parastacidae)**
Southern freshwater lobster *Astacopsis tricornis* **(Parastacidae)**

[Illustrations by Premek Hamr]

Status

Giant freshwater lobster

Tasmania's *Threatened Species Protection Act 1995* - Vulnerable
Commonwealth *Endangered Species Protection Act 1992* - Vulnerable

Eastern freshwater lobster

Tasmania's *Threatened Species Protection Act 1995* - not listed but considered of high conservation significance
Commonwealth *Endangered Species Protection Act 1992* - not listed

Southern freshwater lobster

Tasmania's *Threatened Species Protection Act 1995* - not listed but considered of high conservation significance
Commonwealth *Endangered Species Protection Act 1992* - not listed

Description

The giant freshwater lobster has distinct chelae (front pincers), walking legs, carapace and abdomen terminating in a tail fan. Adult males have significantly large chelae while females have less robust, thinner and more elongate pincers. The eyes are large and stalked, body and legs have a heavy armature of spines, ranging from sharp to blunt. The head is broad and relatively shallow, terminating in a single prominent spine and long antennae. A distinct ridge occurs mid way on the top of the rostrum (i.e. between the eyes) and is very diagnostic of the species. The genital opening is at the base of the rear set of legs in males and at the base of the third set of legs in females. Juvenile body colour is brown with green mottling, spines and tubercles are white, and the underside is ivory. Adults are dark brown-green, sometimes almost black to blue, chelae are brown with greenish tips, tubucles and spines are yellow. Female lobsters mature after about 14 years, weighing about 500 g with a carapace (head shell) length (CPL) of 120 mm. Males mature more quickly at around 300 g and approximately 76 mm CPL in about nine years. Large specimens can be 214 mm in length and weigh 4 kg or more.

There are two other lobster species in the *Astacopsis* family, *A. franklinii* and *A. tricornis*, both of which occur only in Tasmania's freshwater systems. All three species look very similar and can grow to a large size. They are best distinguished by the head shape of adults. *A. gouldi* has a prominent raised ridge (carina) on the forehead between the eyes. *A tricornis* has a broad, 'U' shaped forehead with numerous spines. The forehead of *A. franklinii* is narrower, flat and 'V' shaped.

Distribution, Habitat and Biology

The giant freshwater lobster once occurred in all the northern rivers flowing into Bass Strait, except those of the Tamar catchment. They ranged from the Arthur River in Tasmania's northwest to the Ringarooma River system in the northeast. They occurred in all river systems below 400 m and were most numerous in streams below 200 m. Interestingly, their range was thought to coincide with that of the blackfish *Gadopsis marmoratus*. Today their distribution is more disjunct and significant declines have occurred in the Welcome, Montagu, Rubicon, Don, Brid, Boobyalla, Pipers, Ringarooma, Duck, Little and Great Forester Rivers as well as Claytons Rivulet. Sexually mature and large individuals, particularly males, are either very scare or absent from some of these river systems. While there is some overlap in range of the three lobster species, *A. franklinii* occurs mainly in rivers throughout eastern Tasmania and *A. tricornis* throughout the south and west.

Ideal lobster habitat is an intact stream catchment of several stream sizes, including rivulets and small headwaters. These should flow and meander through a relatively undisturbed, well-vegetated catchment containing snags, pools and undercut, but not eroding, banks. Water temperature should seldom exceed 18°C, have a high oxygen content and be clear of sediment. Adults take refuge in still, deep pools which are sheltered and well shaded beneath submerged and decaying timber. While little is known about the needs of juveniles, it is suspected that they migrate into smaller stream zones, including semi-permanent creeks and runnels lined with overhanging vegetation.

Giant freshwater lobster are very cryptic and shy animals, being mostly active during summer and early autumn. They are slow growing, slow to colonise new areas, and have a low reproductive rate. Their diet is mainly decaying wood but leaves, small fish, rotting flesh and other detritus are also eaten. While little is known of their dispersal patterns, individuals have been recorded moving 60 to 100 m in a few days, and movements of up to 500 m, both in streams and over land, are possible.

Females mature at about 14 years of age and breed every two years with mating and spawning occurring between April and May. The female carries the eggs on her tail over winter until they hatch in January. The hatchlings stay attached until the following summer when they measure about 10 mm CPL. The young moult several times a year but this becomes less frequent as they get older. It is estimated that the giant freshwater lobster may live up to 60 years or more. Historically, lobsters weighing 4 to 6 kg were reported as common, however, animals weighing 2 to 3 kg are now considered large.

A steady increase in habitat disturbance combined with a long history of recreational fishing have caused the decline of the giant freshwater lobster and possibly the other two species of *Astacopsis*. Large individuals have been targeted for eating and trophies and this has had a significant effect on breeding stock, completely removing cohorts from some river systems. *Astacopsis gouldi* occurs in only a few minor reserves and there are no known populations located in national parks.

Key Sites

Giant freshwater lobster

Entire catchments (rivers and all tributaries) of the:

- Hellyer River
- Inglis River
- Black River
- Dip River
- Detention River
- Mersey River, including the Minnow River
- Emu River
- Flowerdale River from the top of its catchment to below the Lapoinya Forest Reserve
- Aitken Creek and Don River from downstream of the Nook Road crossing to the Sheffield Road crossing
- Great Forester River and Little Forester River.

Key Threats (all species)

- Any form of habitat disturbance, including the removal of stream side vegetation, bank erosion, de-snagging, shifting of channels, siltation, organic and chemical pollution.
- Conversion of native forest to plantation (eucalypt tree farm or pine plantation) which results in the loss of canopy cover, increased erosion, sedimentation and changes to stream dynamics.
- Removal of woody debris from streams.
- Water pollution by pesticides, fertilisers and sediment.
- Existing and increased roading leading to greater fishing potential and access to previously unexploited populations.
- Illegal fishing (poaching).
- Fragmentation of populations by barriers to movement, such as poorly constructed or raised road culverts.

Management Recommendations for Commercial Forestry

- Detailed recommendations are provided to Forest Practices Officers under the Forest Practices Code.

Habitat Management of River Zones

If you manage land within the range of the giant freshwater lobster, or other lobsters, please adopt these practices:

Vegetation Clearing and Buffers

- Avoid clearing native vegetation from stream side zones or stream banks. Vegetation provides shelter, shade (maintains water temperature), and essential food for lobster and other aquatic fauna. It also filters surface runoff (reducing nutrients and sediments), limits light levels, and maintains slope and bank stability.
- Stream zones should contain a mix of native understorey and overstorey plants where appropriate, including reeds, grasses, shrubs and trees. Diversity of vegetation along stream banks is important as trees, shrubs and ground cover all play different and important roles in stream bank stability. Establish vegetation as far down the base of the bank as possible. This may require special work to stabilise the toe of the bank or reduce its steepness to enable vegetation to establish.

- The width of vegetation buffers depends on the situation. The greater the buffer width, the greater the protection, the more diverse the buffer vegetation, the better the protection. In any case, for small, seasonally dry water channels buffers should be no less than 10 m wide each side, grading up to at least 60 m wide each side for larger stream zones. Two methods for calculating minimum buffer width are: a distance equivalent to the average dominant tree height, or if there are no trees then the amplitude distance between bends.
- Buffers are especially important at points where surface water enters small river channels or landscape depressions, and where flow concentrates.
- An effective buffer zone should also provide for the continuing input of large woody debris and leaf litter into the stream.

Weed and Willow Removal

- Cut and paint weeds with poison, leaving roots (and stumps of willows) intact to aid bank stability. Painting will also eliminate re-sprouting from suckers, e.g. willows.
- Removal of willows or dense weed mats must coincide with a re-vegetation program so that stream banks are not exposed to excessive erosion, light or loss of foliage. Remember that most aquatic animals like cool, shady places.
- Prevent any large, heavy machinery or structures from entering the wetland or stream bed, e.g. tractors, excavators, bridge supports, etc., even if they are being used for restoration activities. This will not only directly kill localised species and alter habitat for other aquatic animals, but the sedimentation caused by the disturbance will accumulate on the stream bed and smother fragile habitats.
- Do not remove gravel or large quantities of rock from the stream bed. This contains aquatic fauna, even lobsters, provides cover and disperses water flow. The removal of shingle from the river can alter the stream hydrology and lead to erosion of the stream bed and channel.
- Use only herbicides which are registered as suitable in watercourses (e.g. Roundup Biactive®). Seek advice from the Parks and Wildlife Service on types of herbicides and preferred alternatives.
- If introduced cumbungi (bullrush) is invading the site it should be destroyed as early as possible, e.g. young or early growth stages. Manual (hand) or mechanical removal must remove the entire plant, including the roots and rhizomes. If using Roundup Biactive® only apply during the flowering period (December to March).

Snags or Woody Debris

Woody debris, including snags, are a natural and important part of the river system. Snags are essential for creating a range of flow conditions enabling a diversity of plants and animals to establish. They provide shade and shelter and their gradual decay and trapping of leaf litter provides the essential food items for lobsters and many other aquatic animals (e.g. frogs, crayfish, insects).

- Do not remove woody debris or snags from the river system. If a snag is completely blocking water flow seek advice on how to realign it to a 20 to 40 degree angle to the stream bank.
- Lop selected branches from snags near the water surface if they tend to trap debris and cause log jams.
- If the woody debris requires removal from the main stream channel, try relocating it to a position of low water velocity in the stream or place it on the outside of banks to improve stability.
- In streams which have been modified or degraded consider re-introducing woody debris into the stream system. Seek advice on the best way to undertake this.

Fertilisers, Chemicals, etc.

- Use only chemicals which are registered as suitable in watercourses as lobsters and many other animals are extremely sensitive to chemicals, even in light doses (e.g. pyrethrin is lethal to crayfish and lobsters).
- Time any fertiliser or chemical application to avoid periods of intense runoff. Instead of broadcast applications, try direct placement in the soil or place under a blanket of stubble mulching, etc.
- Trial the use of alternative 'environmentally friendly' applications, which may also be safer for stock and human health.

Managing Stock Access

Stock naturally favour wetlands and riversides and if poorly managed will completely degrade crossings, watering points and foul the water. This results in bank erosion, loss of plant species, soil compaction, weed invasion, and a build up of bacteria and viruses in the water. If at all possible 'Keep Stock Out'.

- Fencing and smart planning will enable you to manage the riparian zone and your stock. Hanging fences, electric and electronic fences, drop fences, and alternative watering points, even troughs, should be used depending on the situation.
- Timing, intensity and duration of stock in sensitive riparian zones can also be regulated to maintain the area.

Culverts, Dams, Weirs, etc.

Many aquatic animals (especially platypus and lobster) avoid or are unable to go through culverts. Culverts channel the water flow over the smooth concrete surface and increase flow velocity. Poorly designed or poorly embedded culverts prevent upstream movement and natural mixing of aquatic species and also force larger species like lobster onto roadsides or into open situations.

- Wherever possible use bridges instead of culverts. Try alternative inverted 'U' shaped designs or irregular shapes. If round culverts are necessary they should be fully embedded in the stream bed and ideally should have an artificial substrate provided down the mid-line of the pipe (e.g. cemented rocky gravel).
- Do not construct dams, weirs, etc. anywhere in the catchment. Please seek advice. Barriers will significantly alter environmental flow regimes and may make the site totally unsuitable for many plant and animal species.
- Do not remove gravel or large quantities of rock from the wetland or stream bed. This contains aquatic fauna, provides cover and disperses water flow. The removal of shingle from the river can alter the stream hydrology and lead to erosion of the stream bed and channel.

Legal Status and What it Means

In 1995 the giant freshwater lobster was listed as 'vulnerable' on the Tasmanian *Threatened Species Protection Act 1995* and the Commonwealth *Endangered Species Protection Act 1992*. From 1 January 1998 it was declared a 'protected fish' under the *Inland Fisheries Act 1995*, signalling the immediate end of recreational fishing. This legal recognition means that conservation of the species is of national concern. Unless issued with a special permit, it is illegal and a finable offence to catch or disturb the animal in any way. Disturbance includes killing, injuring, catching, damaging, destroying or collecting the animal, either deliberately or accidentally. Without a permit it is illegal to handle the species, remove it from any waterbody or keep it in tanks or dams. If you are aware of any illegal activity with the species you should contact the Inland Fisheries Commission or the Threatened Species Unit.

Other Ways to Help

- Let everyone know that fishing for giant freshwater lobster is illegal. Help change the view that lobsters are only there to be eaten.
- Report the presence of any strings or baitlines to the Inland Fisheries Commission or the nearest Inland Fisheries Inspector.
- Help instil a sense of pride that Tasmania's northern rivers hold one of the world's most unique creatures.
- Act as a watchdog to report offences and warn of developments that threaten the species and its habitat. This includes any activities impacting on riparian vegetation, stream beds and water quality.
- Undertake your own restoration or protective actions around lobster habitat. Grants may be available to assist with some activities.
- Become part of a local group that cares for lobster habitat. The 'Tayatea Landcare Group' has already been established in the Smithton area. Contact your local Landcare group for more details.
- Rapid re-vegetation of redundant roads and controlling access to key areas will help reduce illegal fishing.
- Local authorities have powers to control adverse actions and to promote rehabilitation of riparian and stream habitats. Have your say to make sure that this happens.
- Support the name 'Tayatea'. The term lobster or crayfish evokes thoughts of tasty flesh. Historical accounts suggest the Tasmanian Aborigines referred to freshwater lobsters as 'Tayatea'. To help change the ethos from eating to preserving why not adopt the cultural name in recognition of the species unique link to Tasmania and its people.

More Information

Blühdorn, D. R. (1997). Recovery Plan for the Tasmanian Giant Freshwater Lobster *Astacopsis gouldi* Clark. Inland Fisheries Commission, Report to Environment Australia.

Hamr, P. (1990). Rare and endangered: Tasmanian giant freshwater lobster. Australian Natural History 23: 362.

Hamr, P. (1992). A revision of the Tasmanian freshwater crayfish Genus *Astacopsis* Huxley (Decapoda: Parastacidae). Papers Proceedings Royal Society Tasmania 126: 91-94.

Horwitz, P. (1994). The distribution and conservation status of the Tasmanian giant freshwater lobster *Astacopsis gouldi* Clark (Decapoda: Parastacidae). Biological Conservation 69: 199 - 206.

Inland Fisheries Commission, 6B Lampton Avenue, Derwent Park, Tasmania, 7009.

Inland Fisheries Commission (1993). Changes to freshwater crayfish regulations. Inland Fisheries Commission Newsletter 22 (2) (July 1993): 6.

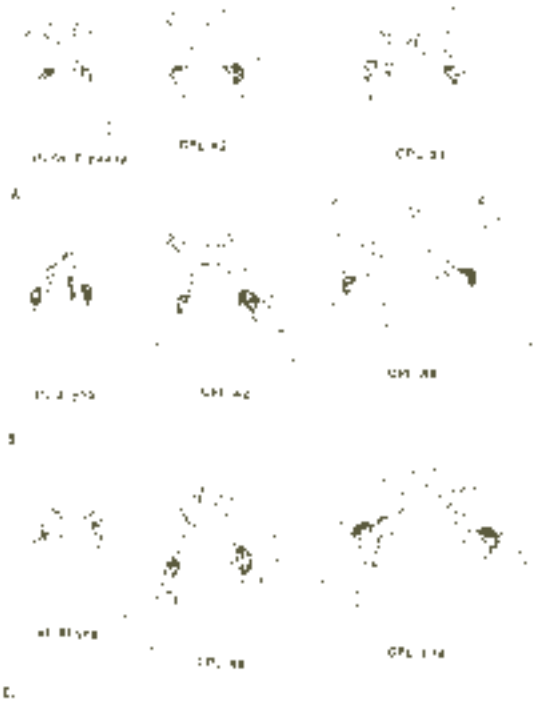
Lynch, T. P. and Blühdorn, D. R. (1997). Reservation assessment and habitat requirements of the giant Tasmanian freshwater lobster, *Astacopsis gouldi*. Report to the Tasmanian RFA Environment and Heritage Technical Committee.

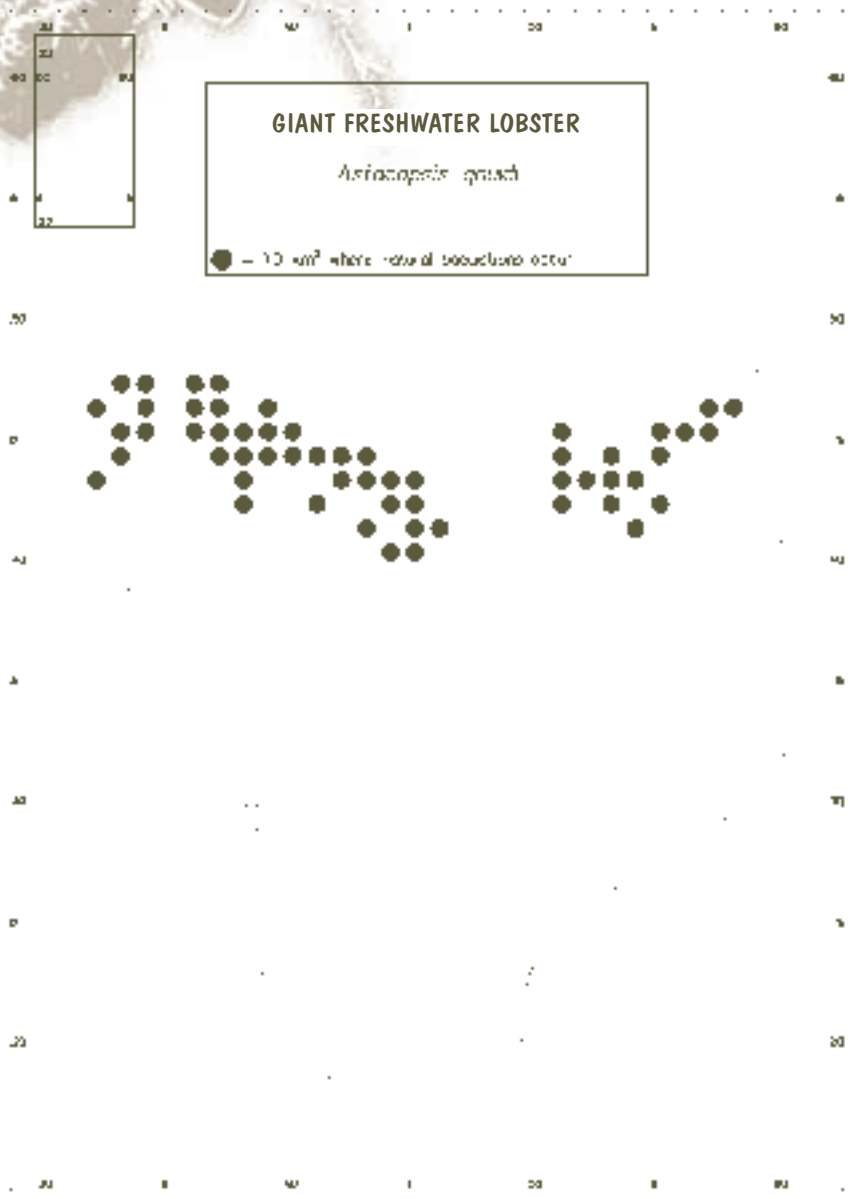
Tayatea Landcare Group, Plummers Road, Smithton, Tasmania, 7330.

Threatened Species Unit Fact Sheet: Tasmania's giant freshwater lobster. Parks and Wildlife Service, GPO Box 44A, Hobart, Tasmania, 7001.

1: 25 000 TASMAP sheets with known sites and potential habitat for the giant freshwater lobster only

Balfour	Baretop	Beryl	Bluff
Bothwell	Bowood	Bridport	Burnie
Calder	Castra	Cathedral	Cawood
Cethana	Deloraine	Dempster	Dennistoun
Derby	Devonport	Dilston	Folly
Gladstone	Gog	Guildford	Hamilton
Holder	Keith	Kindred	Lanka
Latrobe	Lea	Liena	Lileah
Lilydale	Lisle	Loongana	Loyetea
Maurice	Mawbanna	Mella	Milabena
Mole Creek	Monarch	Montacute	Montagu
Montana	Nabowla	Nunamara	Oxberry
Parkham	Parrawe	Patersonia	Pearly Brook
Pearse	Pioneer	Railton	Retreat
Riana	Ringarooma	Rocky Cape	Roger
Rowallan	Scottsdale	Sheffield	Smithton
Springfield	Spurrs Rivulet	Stowport	Sumac
Sundown	Tayatea	Tewkesbury	Togari
Ulverstone	Waratah	West Frankford	Weymouth
Wilmot	Wynyard	Yolla	




GIANT FRESHWATER LOBSTER
Astacopsis gouldi

BURROWING CRAYFISH (4 species)

Burnie Burrowing Crayfish *Engaeus yabbimunna* **(Parastacidae)**
Mt Arthur Burrowing Crayfish *Engaeus orramakunna* **(Parastacidae)**
Scottsdale Burrowing Crayfish *Engaeus spinicaudatus* **(Parastacidae)**
Flinders Island Burrowing Crayfish *Engaeus martigener* **(Parastacidae)**

[Illustrations by Karen Richards]

Status

Burnie burrowing crayfish
Tasmania's *Threatened Species Protection Act 1995* - Vulnerable
Commonwealth *Endangered Species Protection Act 1992* - not listed

Mt Arthur burrowing crayfish
Tasmania's *Threatened Species Protection Act 1995* -Vulnerable
Commonwealth *Endangered Species Protection Act 1992* - not listed

Scottsdale burrowing crayfish
Tasmania's *Threatened Species Protection Act 1995* - Vulnerable
Commonwealth *Endangered Species Protection Act 1992* - not listed

Flinders Island burrowing crayfish
Tasmania's *Threatened Species Protection Act 1995* - not listed, but considered of high conservation significance
Commonwealth *Endangered Species Protection Act 1992* - not listed

Description

All species of *Engaeus* are typically small sized, freshwater burrowing crayfish, with a body length under 10 cm. Identifying features include variations in the shape, characteristics and size of various body parts, such as the rostrum (head shield), tail fan, antennal flagella, the presence of spines and of pores on the lateral processes, etc. The size of the front claws is no different between males and females, however, as one or both of these claws are easily lost, individuals may sometimes have one re-growing claw that is smaller. Detailed taxonomic descriptions for the Burnie burrowing crayfish are provided in Horwitz (1994) and for all other Tasmanian burrowing crayfish species in Horwitz (1990).

Burnie burrowing crayfish have a total body length up to about 6 cm (not including the claws). This species can be distinguished by having only one row of tubercles on the back of the claw, the smooth 'palm' of the claw, and the very characteristic upturned tip of the rostrum (projection between the eyes). Claws are similar in size except when a claw is re-growing, which will be smaller. The tail fan is broad and well rounded with small spines. Burrows often have chimneys of pelleted soil at the openings.

Mt Arthur burrowing crayfish are up to about 8 cm in total body length. Body colour is a striking orange grading from pale underneath to darker on the back. Colour may also vary to a darker reddish-brown or a translucent grey-blue in younger animals. The rostral tip is pointed. Burrows often have chimneys ranging in height from 10 to 40 cm.

Scottsdale burrowing crayfish are best identified by the large and obvious terminal spine on the tail fan surrounded by three or four extra smaller spines on the outer ramus of the uropod. Individuals average around 5 cm in total body length. Burrows often have chimneys of pelleted soil at the openings.

Flinders Island burrowing crayfish are distinctively coloured with purple hues, although the body can be typically brown to orange. The carapace (body shell) is often creamy coloured with light oranges, browns and purple dorsally. The abdomen and tail fan are usually light purple. There are no spines on the tail fan but there are course hairs (bristles) entirely covering the pincers.

Distribution, Habitat and Biology

There are 35 species of *Engaeus* (small freshwater burrowing crayfish) in Australia. Of the group, Tasmania has 15 species, 13 of which are endemic to Tasmania and two which also occur in southeastern Australia. Many of the Tasmanian species are distributed in the northern half of the State and have overlapping ranges and share similar types of habitat. *Engaeus* species should not be confused with burrowing crayfish species of *Parastacoides* which are common throughout the west of Tasmania, especially in the buttongrass plains of the southwest.

All *Engaeus* are characterised by their ability to burrow, often to considerable depths, and they are rarely seen above ground. Burrows are classified according to their connection with the water table and can be either simple and shallow or complex and extensive to many metres deep. 'Type 1' burrows are always connected to a stream, 'Type 2' burrows are associated with ground water, and 'Type 3' burrows (*Engaeus* being the only genus of crayfish to dig these) are associated with run-off. Some burrows have a simple opening while others may have several openings enclosed by elaborate high chimneys of pelleted excavated soil. The burrows are usually clustered together forming colonies. Burrowing crayfish are generally omnivorous, feeding on plant material, detritus and invertebrates such as worms. The breeding season when berried females may be found varies for each species but is generally from July to December.

The Burnie burrowing crayfish was first discovered in 1992 at Cooee Creek in Burnie by Bill Walker. The species occurs in wet vegetation types (including fern glades and tea tree thickets) living in burrows near streams and seepages with medium to dense cover. Highest densities occur wherever there is native riparian vegetation. The species has also been found in smaller numbers among willows and other introduced vegetation, including pasture, roadside seeps and farm dams. They are found in Shorewell, Romaine and Cooee Creeks within the urban area of Burnie and several creek systems south of Wynyard, namely Seabrook Creek, Camp Creek and Distillery Creek. The most important sites within Burnie are Romaine Creek Reserve, Burnie Park and Eastwood Reserve. While the range of the Burnie burrowing crayfish is small it is intersected by four more commonly occurring burrowing crayfish, *E. fossor, E. disjuncticus, E. cisternarius* and *E. cunicularius*, therefore care is needed with identification. The Burnie burrowing crayfish feeds mainly on rotting vegetation and insects but spends most of its time underwater in its burrow.

The range of the Mt Arthur burrowing crayfish is centred around Mt Arthur in the northeast, enclosed roughly by Lilydale, Nabowla, the Sideling Range and Nunamara. A new site, however, has recently (N. Doran 1999) been identified to the east in a tributary of the Great Forester River. The species occupies a wide range of wet vegetation types and situations, ranging from undisturbed rainforest, eucalypt forest, open pasture, roadside gutters and pine plantation (both standing, cleared and burnt). However, the species is absent from areas where streams and water quality are degraded. Burrows are excavated in areas of high soil moisture and high clay content and can be some distance from stream edges.

The Scottsdale burrowing crayfish is restricted to a small area in the northeast of Tasmania in the Surveyors Creek and Great Forester River valley just northeast of Scottsdale, including 25 sites within the Ruby Creek and China Creek catchment. Unlike the other three species, the Scottsdale burrowing crayfish is found mainly in floodplains and riparian areas of streams (often with scrubby or tea tree vegetation), seepages and wet pasture or buttongrass and heathy plains. The species requires organic (peaty) permanently saturated surface soils. The typical burrow structure is to have two entrances which descend for about 0.5m and then converge to a single tunnel.

The Flinders Island burrowing crayfish has only been identified at medium to high altitude sites on Flinders Island and Cape Barren Island, though more survey work is still required. At these sites the species is distributed along the banks of the upper reaches of small creeks where they favoure wet gullies containing dense vegetation of species such as *Dicksonia antarctica, Cyathea australis* and other ferns. Their burrows are in sandy granitic soils and are shallow and extensively ramified. A more widespread species of burrowing crayfish *Engaeus cunicularius* has the boundary of its distribution (a distinct parapatric boundary) in the same location and could be easily confused with the Flinders Island species. Recent surveys by Doran in 1999 excluded the species from being on Deal Island.

Key Sites

Burnie burrowing crayfish

- Shorewell Creek, Cooee Creek, Romaine Creek and Seabrook Creek systems
- Camp Creek, Distillery Creek, two intervening (unnamed) creeks, a tributary of the Cam River

Mt Arthur burrowing crayfish

- All sites within the species range centred around Lilydale, Nabowla, the Sideling Range and Nunamara
- Tributary of the Great Forester River (new site)
- The type locality is a tributary of Pipers River on Lilydale Road, about 3 km south of Lilydale

Scottsdale burrowing crayfish

- Drainage systems in Surveyors Creek and Great Forester Valley, including Ruby and China Creeks around Scottsdale

Flinders Island burrowing crayfish

- Fotheringate Creek and patches along Big Hollow Creek to Bob Smiths Gully in the Strzelecki Peaks
- Leventhorpe Creek and seepages behind Walkers Lookout in the Darling Range
- Centre Creek on the western side of Mt Munro on Cape Barren Island

Key Threats (all species)

Key threats primarily relate to changes in water availability and quality

- Any changes in drainage or stream channel which affect the water table
- Water pollution, especially chemical sprays or toxic leaching
- Clearing of vegetation, exposing burrows, changing hydrology and causing drying out of sites
- Soil compaction due to cattle grazing and trampling which prevents burrow formation
- Fire resulting in the loss of forest or stream vegetation

Additional threats for the Scottsdale burrowing crayfish

- Drainage of swamps and conversion to pasture
- Erosion causing soil deposition in swamps
- Pesticide contamination of water
- Compaction of burrows from stock trampling, vehicles, pedestrian or other disturbances

Management Recommendations for Commercial Forestry

- Detailed recommendations are provided to Forest Practices Officers under the Forest Practices Code.

Habitat Management

The most important management requirements for all burrowing crayfish are to:

- Maintain water availability (especially in seepages)
- Maintain or improve water quality (against pollutants, pesticides, etc.)
- Retain native vegetation throughout the habitat (particularly native riparian vegetation)
- Prevent burning of vegetation especially during the breeding season when crayfish are near the surface
- Exclude stock and other heavy impacts from compacting soil and burrows

It is also important to:

- Remove introduced plants and weeds along the creek lines and throughout the catchments. Gradually and systematically replace exotic vegetation with local native plants known from the area. This includes reeds, sags and rushes where appropriate. Seek advice from the Flora Section of the Parks and Wildlife Service on weed control and appropriate plantings.
- If you own land containing any of these species consider some form of long-term protection, e.g. wildlife sanctuary, management agreement, covenant, etc. Contact the Threatened Species Unit, we may be able to help. A number of forest reserves and wildlife priority areas are in place for each of these species which may be nearby or on the boundary of your property. These could be extended with your help. Consult Section I for site details.

Maintain Existing Drainage Patterns

All species of burrowing crayfish are connected to the water table and rely on regular, clean water in boggy areas.

- Do not drain or cultivate any areas where these species occur, either directly through constructing drains or by clearing, ploughing and cultivating the soil. Maintain a protective riparian strip around all the colonies and avoid any heavy machinery from entering this zone.
- Do not construct dams, weirs, etc. anywhere in the catchment without advice. Barriers will significantly alter environmental flow regimes and may make the site totally unsuitable for the burrowing crayfish.

Vegetation Clearing and Buffers

- Avoid clearing native vegetation from stream side zones or stream banks. Vegetation provides shelter, shade (maintains water temperature) and essential food for burrowing crayfish and other aquatic fauna. It also filters surface runoff (reducing nutrients and sediments), limits light levels, and maintains slope and bank stability.

- Stream zones should contain a mix of native understorey and overstorey plants where appropriate, including reeds, grasses, shrubs and trees. Diversity of vegetation along stream banks is important as trees, shrubs and ground cover all play different and important roles in stream bank stability. Establish vegetation as far down the base of the bank as possible. This may require special work to stabilise the toe of the bank or reduce its steepness to enable vegetation to establish.
- The width of vegetation buffers depends on the situation. The greater the buffer width, the greater the protection, the more diverse the buffer vegetation, the better the protection. In any case, for small, seasonally dry water channels buffers should be no less than 10 m wide each side, grading up to at least 60 m wide each side for larger stream zones. Two methods for calculating minimum buffer width are: a distance equivalent to the average dominant tree height, or if there are no trees then the amplitude distance between bends.
- Buffers are especially important at points where surface water enters small river channels or landscape depressions, and where flow concentrates.

Fertilisers, Chemicals and Pollutants in the Waterways

Burrowing crayfish are linked to the water table (either permanent water or run-off) and are adversely affected by water impurities seeping below the surface. They are extremely sensitive to herbicides and pesticides, even in light doses.

- Do not wash equipment in the stream channel as this seeps into the surrounding sediments which is ideal burrowing crayfish habitat. Rubbish, chemicals and any toxic waste will eventually find its way into the water table and is lethal to burrowing crayfish.
- Use only chemicals which are registered as suitable in watercourses as crayfish and many other animals are extremely sensitive to chemicals, even light doses (e.g. pyrethrin is lethal to crayfish).
- Time any fertiliser or chemical application to avoid periods of intense runoff. Instead of broadcast applications, try direct placement in the soil or place under a blanket of stubble mulching, etc.
- Trial the use of alternative 'environmentally friendly' applications, which may also be safer for stock and human health.

Snags or Woody Debris

Woody debris, including snags, are a natural and important part of the river system. Snags are essential for creating a range of flow conditions enabling a diversity of plants and animals to establish. They provide shade and shelter and their gradual decay and trapping of leaf litter provides the food for many aquatic animals (e.g. frogs, crayfish, insects).

- Do not remove woody debris or snags from the river system. If a snag is completely blocking water flow seek advice on how to realign it to a 20 to 40 degree angle to the stream bank.
- Lop selected branches from snags near the water surface if they tend to trap debris and cause log jams.
- If the woody debris requires removal from the main stream channel, try relocating it to a position of low water velocity in the stream or place it on the outside of banks to improve stability.
- In streams which have been modified or degraded consider re-introducing woody debris into the stream system. Seek advice on the best way to undertake this.

Managing Cattle Access

Burrowing crayfish are particularly sensitive to soil compaction caused by trampling of cattle. Cattle naturally favour wetlands and riversides and if poorly managed will completely degrade crossings, watering points and foul the water. This results in bank erosion, loss of plant species, soil compaction, weed invasion, and a build up of bacteria and viruses in the water. If at all possible 'Keep Stock Out'.

- Fencing and smart planning will enable you to manage the riparian zone and your stock. Hanging fences, electric and electronic fences, drop fences and alternative watering points, even troughs, should be used depending on the situation.
- Timing, intensity and duration of cattle in sensitive riparian zones can also be regulated to maintain the area.

Culverts, Dams, Weirs, etc.

Many aquatic animals (especially platypus, crayfish and lobster) avoid or are unable to go through culverts. Culverts channel the water flow over the smooth concrete surface and increase flow velocity. Poorly designed or poorly embedded culverts prevent upstream movement and natural mixing of aquatic species and also force larger species like lobster onto roadsides or into open situations.

- Wherever possible use bridges instead of culverts. Try alternative inverted 'U' shaped designs or irregular shapes. If round culverts are necessary they should be fully embedded in the stream bed and ideally should have an artificial substrate provided down the mid-line of the pipe (e.g. cemented rocky gravel).

- Do not construct dams, weirs, etc. anywhere in the catchment. Please seek advice. Barriers will significantly alter environmental flow regimes and may make the site totally unsuitable for many plant and animal species.

Other Ways to Help

- When visiting known sites, e.g. Burnie Parks, always keep to formed tracks to avoid further disturbance and trampling of soft sediments.
- Learn more about these fascinating species and their life history. The field naturalists' clubs throughout Tasmania, especially the Central North Field Naturalists, often undertake specific project work. Please contact them and seek more information.
- Information on the distribution of the Flinders Island burrowing crayfish is limited. If you find specimens (body parts) or burrows fitting the description of this species, please contact the Threatened Species Unit. Likely spots are medium to high altitude sites on Flinders Island (especially Mt Killiecrankie and Mt Tanner), Cape Barren Island, and nearby offshore islands (Inner and Outer Sister, Preservation Island, etc.).

More Information

Doran, N. and Richards, K. (1996). Management requirements for rare and threatened burrowing crayfish in Tasmania. Report to the Tasmanian RFA Environment & Heritage Technical Committee.

Gaffney, R. and Horwitz, P (1992). The Scottsdale burrowing crayfish recovery plan: Management phase. Endangered Species Program Project No. 240. Parks and Wildlife Service, Tasmania.

Horwitz, P. (1988). A key to genera of Tasmanian freshwater crayfish. The Tasmanian Naturalist 94: 1-3.

Horwitz, P. (1990). A taxonomic revision of species in the freshwater crayfish genus *Engaeus Erichson* (Decapoda: Parastacidae). Invertebrate Taxonomy 4(3): 427-615.

Horwitz, P. (1994). A new species of the freshwater crayfish genus *Engaeus* Erichson (Decapoda: Parastacidae) from northwestern Tasmania. Memoirs of the Museum Victoria 54: 439-445.

1: 25 000 TASMAP sheets with known sites and potential habitat

Burnie burrowing crayfish

Burnie	Calder	Stowport	Wynyard
Yolla			

Mt Arthur burrowing crayfish

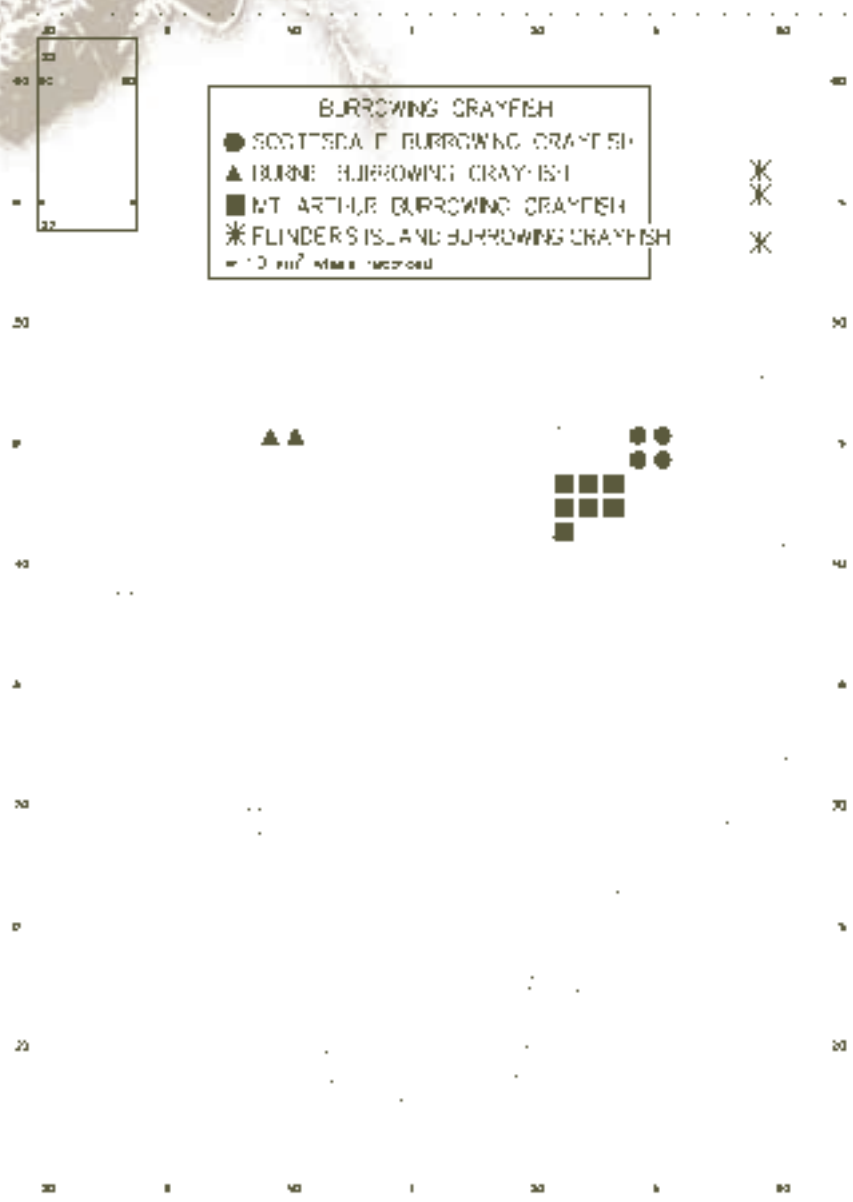
Dilston	Launceston	Lilydale	Lisle
Nunamara	Patersonia	Springfield	

Scottsdale burrowing crayfish

Pearly Brook	Scottsdale

Flinders Island burrowing crayfish

Andersons	Leventhorpe	Loccota	Whitemark



Burnie Burrowing Crayfish

Scottsdale Burrowing Crayfish

Mt Arthur Burrowing Crayfish

SALT LAKE SLATER

Haloniscus searlei (Isopoda: Oniscidae)
[Illustration of generic *Haloniscus* from Williams 1980]

Status

Tasmania's *Threatened Species Protection Act 1995* - Rare
Commonwealth *Endangered Species Protection Act 1992* - not listed

Description

A small aquatic crustacean similar in general appearance to garden slaters. The body is up to 7.5 mm long and 3.5 mm wide. Colour is slate grey to mottled dark grey-brown. As with all isopods, there is a distinct head, no carapace, a thorax with seven pairs of walking legs, and a six-segmented abdomen. The female carries the eggs in a brood pouch formed from overlapping plates. After hatching the young resemble small adults.

Distribution, Habitat and Biology

Members of the *Haloniscus* group occur in relatively permanent inland saline waters in Victoria, South Australia, Western Australia and Tasmania. This species has a geographical range extending from southwestern Western Australia, Victoria and Tasmania. In Tasmania it has only been identified in the salt lakes in the Tunbridge area. Due to limited surveys and changing conditions this species could possibly occur in other salt lakes near Tunbridge or in the Midlands.

The species is of special interest because it is fully aquatic unlike almost all other members of the family Oniscidae which live on land, and it is thought to have evolved from land-dwelling ancestors. Salt lake slaters have a sophisticated form of hypo-osmotic body fluid regulation which enables them to live in water of a wide range of salinities. They feed mainly on decaying or dead vegetable matter or scavenge on smaller invertebrates.

Key Sites

- Only known from Township Lagoon, Tunbridge.

Key Threats

- Changes to the drainage pattern which directly or indirectly alter salinity and the micro-environment
- Pollution (e.g. from the Tunbridge tip), leading to weed invasion and loss of food species
- Physical disturbance by horses, off-road vehicles, trampling, etc.

Habitat Management and Other Ways to Help

- Protect these unique salt pan ecosystems. They are fragile and sensitive and best managed by 'leaving alone'.
- Minimise effects from the Tunbridge tip by directing any tip runoff away from Township Lagoon. This should be conducted according to environmental guidelines and procedures.
- Carefully plan any works in the Tunbridge area, or near other salt pans, such as drains and roads, that may affect the pattern of water flow. An impact assessment should be undertaken prior to any developments.
- Do not drive vehicles, horses or run stock on the lake beds or shores. This not only degrades the very sensitive environment but leads to weed invasion, rutting and pollution of the water channel.
- Not a lot is known about this species or its ecology. If you live in the Tunbridge or Midlands area near habitats containing salt lakes or pans, learn to identify slaters, as you may locate this or other new species.

More Information

Bayly, I. A. and Ellis, P. (1969). *Haloniscus searlei* Chilton: an aquatic terrestrial isopod with remarkable powers of osmotic regulation. Comparative Biochemistry and Physiology 31: 523-528.

Ellis, P. and Williams, W. D. (1970). The biology of *Haloniscus searlei* Chilton, an oniscoid isopod living in Australian salt lakes. Aust. J. Marine Freshwater Research 21: 51-69.

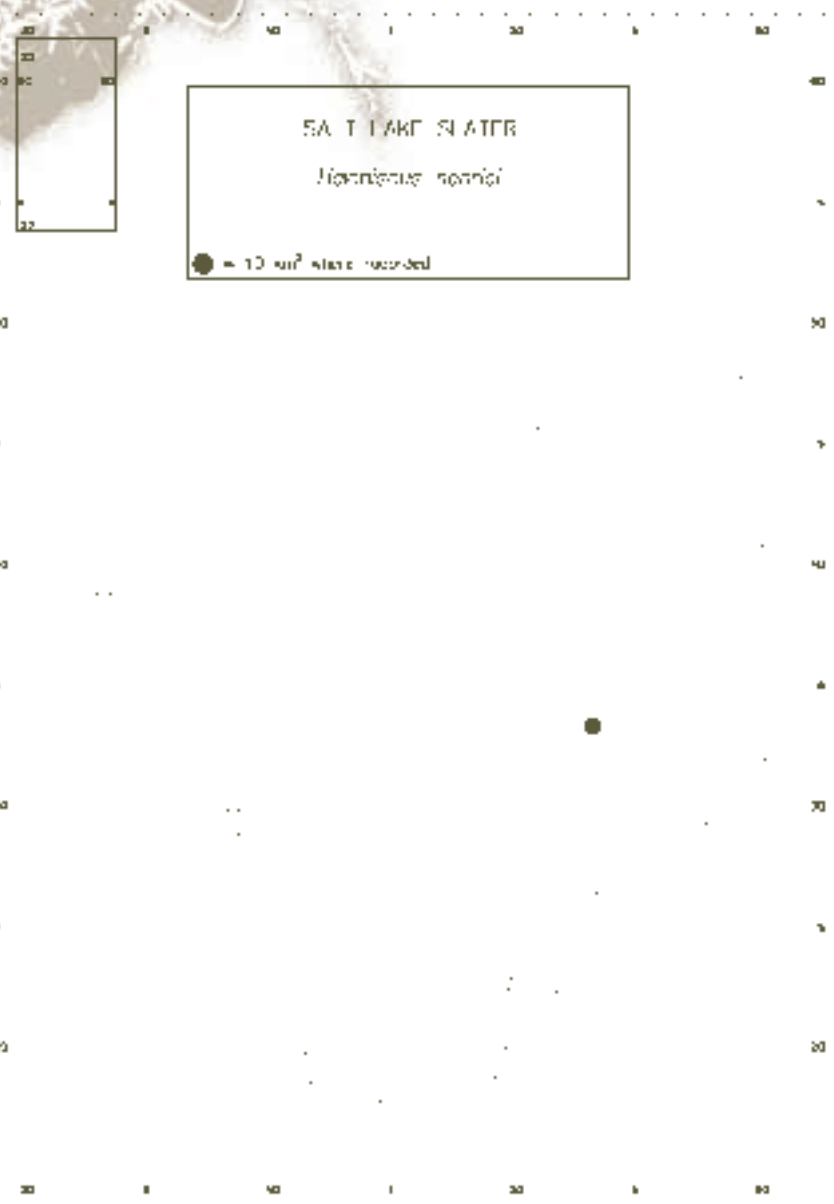
Williams, W. D. (1974). Freshwater crustacea. Chapter 4 in Biogeography and ecology in Tasmania. W.D. Williams (editor), Junk Publishers, The Hague.

Williams, W. D. (1980). Australian Freshwater Life. Macmillan, Melbourne.

Zacharek, A. R., Gilfedder, L. and Harris, S. (1997). The Flora of Township Lagoon Nature Reserve, and its management, Tunbridge, Tasmania. Papers Proceedings Royal Society Tasmania 131: 57-66.

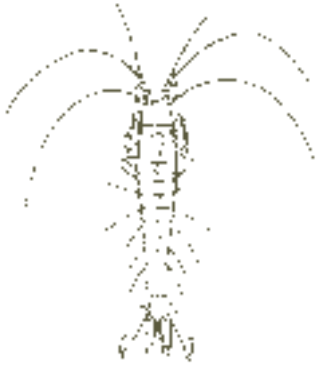
1: 25 000 TASMAP sheets with known sites and potential habitat

Tunbridge


SALT LAKE SLATER
Haloniscus searlei

HICKMANS PYGMY MOUNTAIN SHRIMP

Allanaspides hickmani (Anaspididae)



[Illustration by Karen Richards]

Status

Tasmania's *Threatened Species Protection Act 1995* - Rare
Commonwealth *Endangered Species Protection Act 1992* - not listed

Description

A small, shrimp-like crustacean belonging to the *Anaspididae* family which also includes the Tasmanian mountain shrimp *Anaspides tasmaniae*. *Allanaspides* species have a distinctive transparent dorsal window (fenestra dorsalis) on the thorax. In *A. hickmani* the dorsal window is rectangular and covers most of the width of the back behind the head. The bright red pigment below the window shows through and is very diagnostic of the species. In the other pygmy mountain shrimp species, *A. helonomus*, the dorsal window is smaller and oval-shaped and appears clear. Hickmans pygmy mountain shrimp measures up to 12 mm in length.

Distribution, Habitat and Biology

Species belonging to the family *Anaspididae* occur only in Tasmania and are remarkable for their primitive structure which differs little from fossils about 200 million years old. The two species of pygmy mountain shrimp *Allanaspides hickmani* and *A. helonomus* occur in buttongrass plains in the Lake Pedder area, where they live in water in crayfish burrows and surface pools. These swampy areas usually have emergent vegetation like reeds and rushes and the water quality is acidic (pH 4 to 5) due to the decaying peaty soils. Although aquatic, the shrimps would not be able to survive in the Lake Pedder impoundment due to predation by fish. Hickmans pygmy mountain shrimp is found in only three locations (one now lost), all restricted to the Lake Pedder-Serpentine River drainage system. The sites are all situated approximately 300 m above sea level and occur on waterlogged and swampy parts of buttongrass plains. The two existing locations are at McPartlan Pass on the eastern side of the lake, and below Coronation Peak on the western shore. The previously known third location at Trappes Inlet was destroyed with the flooding of Lake Pedder. In total, the species occupies an area of less than 2 square km.

The dorsal window on the Hickmans pygmy mountain shrimp functions to actively transport ions to maintain the shrimp's body fluid concentration. The diet and life history of the Hickmans pygmy mountain shrimp are not known in detail but the species probably feeds on detritus, breeds once a year, and lives for less than 15 months. It is suspected that the shrimp lays its eggs on vegetation in the spring but the eggs remain dormant until the end of summer when juveniles emerge.

Key Sites

- Endemic to the Lake Pedder-Serpentine River drainage system
- Only currently known from McPartlan Pass and below Coronation Peak at Lake Pedder

Key Threats

- A large area of habitat was lost with the flooding of Lake Pedder in 1972. This has severely restricted the range of the species and made it more susceptible to chance events.
- Any changes to the buttongrass habitat, particularly draining, flooding or fire. The two existing locations occur within the Southwest National Park, therefore fire is considered the major threat as peaty soils will smoulder for long periods and are extremely difficult to extinguish.

Habitat Management and Other Ways to Help

- Any operations in the species' range which may affect the drainage pattern of buttongrass areas (e.g. roading, installation of drains) must be subject to full impact assessments, including surveying.
- Do not drive off-road on buttongrass plains. This destroys ephemeral and permanent pools of water containing the species.
- It is illegal to light fires on peat soils in buttongrass areas. Observe all regulations relating to 'fuel stove only' areas and light fires only in established fireplaces where permitted.
- Learn more about this interesting endemic species by becoming familiar with its identification features and targeting your walks in the southwest toward surveying. More information is needed on ecology and habitat requirements. Contact the World Heritage Area Zoologist for more information.

More Information

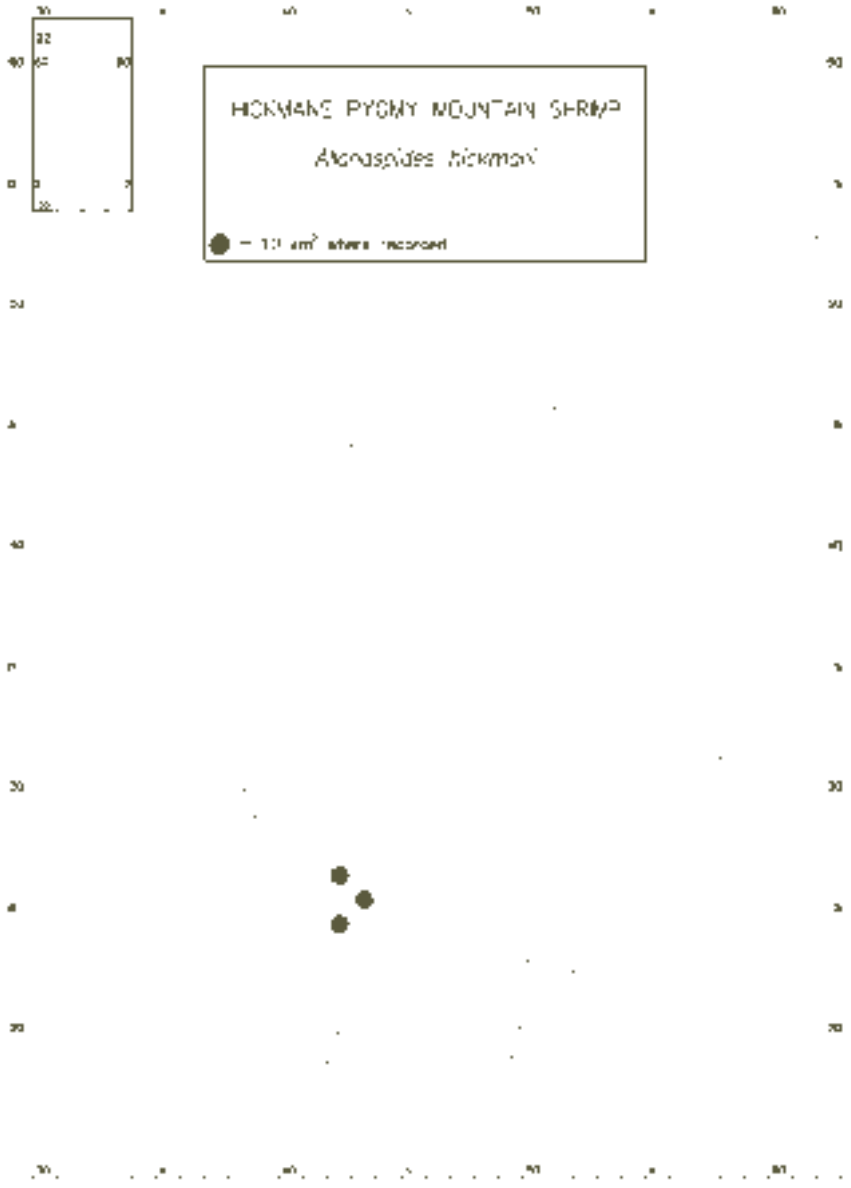
Horwitz, P. (1990). The Conservation Status of Australian Freshwater Crustacea. Report Series No. 14, Australian National Parks and Wildlife Service.

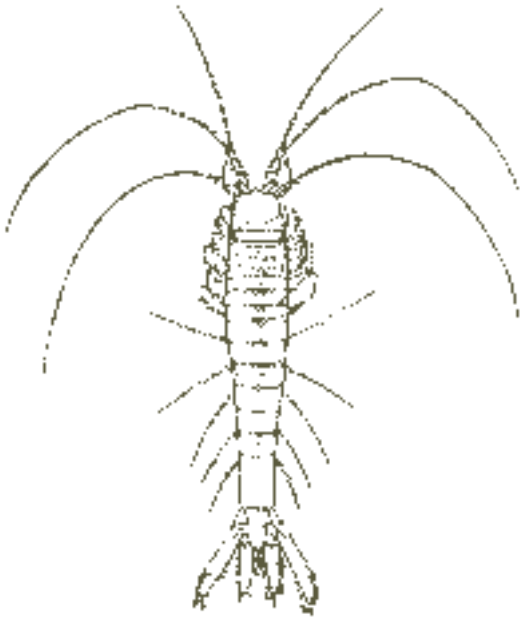
Swain, R., Wilson, I. S. and Ong, J. E. (1971). A new species of *Allanaspides* (Syncarida, Anaspididae) from southwestern Tasmania. Crustacea 21: 196-202.

Threatened Species Unit (1999). Listing Statement: Hickmans pygmy mountain shrimp *Allanaspides hickmani*. Parks and Wildlife Service, Tasmania.

1: 25 000 TASMAP sheets with known sites and potential habitat

Anne	Bowes	McPartlan	Serpentine
Solitary	Strathgordon	View	


HICKMANS PYGMY MOUNTAIN SHRIMP
Allocaridoides hickmani



CHAOSTOLA SKIPPER

Antipodia chaostola (Hesperiidae)

[Photo from Peter McQuillan]

Status

Tasmania's *Threatened Species Protection Act 1995* - Endangered
Commonwealth *Endangered Species Protection Act 1992* - not listed

Description

Skippers differ from other butterflies by having broad heads, antennae spread widely apart, and the dominance of brown and yellow in their body colour. The chaostola skipper has a stout body which is mainly brown in colour. The wings are brownish grey underneath with yellow spots on the forewings. Both sexes have a wingspan reaching 32 to 34 mm. When flying, this species is characterised by a rapid and erratic flight pattern.

Distribution, Habitat and Biology

The chaostola skipper occurs in New South Wales, Victoria and Tasmania. It was first recorded in Tasmania in 1902 when a specimen was collected from Huonville. It was later recorded in 1945 on the slopes of Knocklofty and also in some numbers at Kingston. In the early 1980s it was re-recorded in the Kingston area and subsequently also identified at Sheppards Hill at Coningham. Despite targeted searching in 1992 by M. Neyland, the skipper was recorded at only two sites; Hop Pole Bottom near Royal George, and near Coningham. More recently in 1997, there has been a possible new record of the species collected on the Coles Bay track near Wineglass Bay; however, this requires confirmation. Thus at present the species appears to be very uncommon and localised in Tasmania.

Only a very general description of the species' habitat is known. It is thought to prefer dry open eucalypt forest containing *Gahnia radula* in eastern and coastal Tasmania up to 600 m altitude.

During their larval stage, all the species of Hesperiidae feed on some kind of swordgrass *(Gahnia)*. Caterpillars of chaostola skippers live in looped shelters made with leaves of its food plant, the sedge *Gahnia radula*. They emerge at night to feed on the leaves and it is likely there is a strong association between the species and this plant. Agriculture and urbanisation have drastically reduced the distribution and abundance of *Gahnia radula* in Tasmania. This plant species was previously found throughout coastal areas in the east, generally on infertile soils but now its distribution is very patchy. It is a minor understorey plant species in open forest dominated by one or more eucalypts such as *Eucalyptus amygdalina*, *E. sieberi* (northeast only) and *E. viminalis*, with *E. obliqua, E. ovata,* and *E. globulus* sometimes present. Distribution of the Chaostola skipper may also be affected by factors other than food plant availability, but information is very limited.

The Chaostola skipper has a two-year life cycle, unlike most butterflies which develop from egg to caterpillar to adult in one year. This longer life span makes it susceptible to being eliminated by fire. The adult flight period is from mid-October to mid-December.

Key Sites

- Open forest near Coningham, including the Coningham State Reserve.
- Hop Pole Bottom (about 10 km southeast of Royal George).
- Previous historic sites were at Huonville, Kingston and Knocklofty.

Key Threats

- Loss of woodland with *Gahnia radula* habitat through clearing for any purpose, e.g. housing, agriculture, etc.
- Hot or frequent fires in its woodland habitat.
- Lack of information on distribution and ecology of the species, preventing adequate management.

Management Recommendations for Commercial Forestry

- Detailed recommendations are provided to Forest Practices Officers under the Forest Practices Code.

Habitat Management

- Retain all areas of known habitat for the species, especially by not disturbing *Gahnia* clumps.
- Areas of eastern low-altitude open eucalypt forest with *Gahnia radula* in and near known locations should be surveyed for the skipper before commencement of developments involving major ground disturbance. Surveys should be undertaken during the flight time of mid-October to mid-December.
- Avoid any hot burns in potential habitat which may contain adults, larvae or the food plant, especially between mid-October to mid-December. Cool winter or early autumn burns in a patchwork mosaic are preferred to minimise disturbance and protect habitat integrity.
- *Gahnia radula* is a key food plant and should be actively retained and encouraged by replanting throughout the butterfly's range. When established this plant species forms dense clumps and also naturally provides good shelter for livestock.

Other Ways to Help

- Information on this species is severely limited. If you live in or are visiting known sites or potential habitat, actively search for the skipper on fine days, especially between mid-October to mid-December. If you find a skipper or butterfly fitting this description, please contact the Threatened Species Unit. Check your identification using the butterfly guide produced by the Tasmanian Field Naturalists Club (1994).

More Information

Couchman, L. E. and Couchman R. (1978). The butterflies of Tasmania. Tasmanian Year Book 1977 No. 11: 66-96.

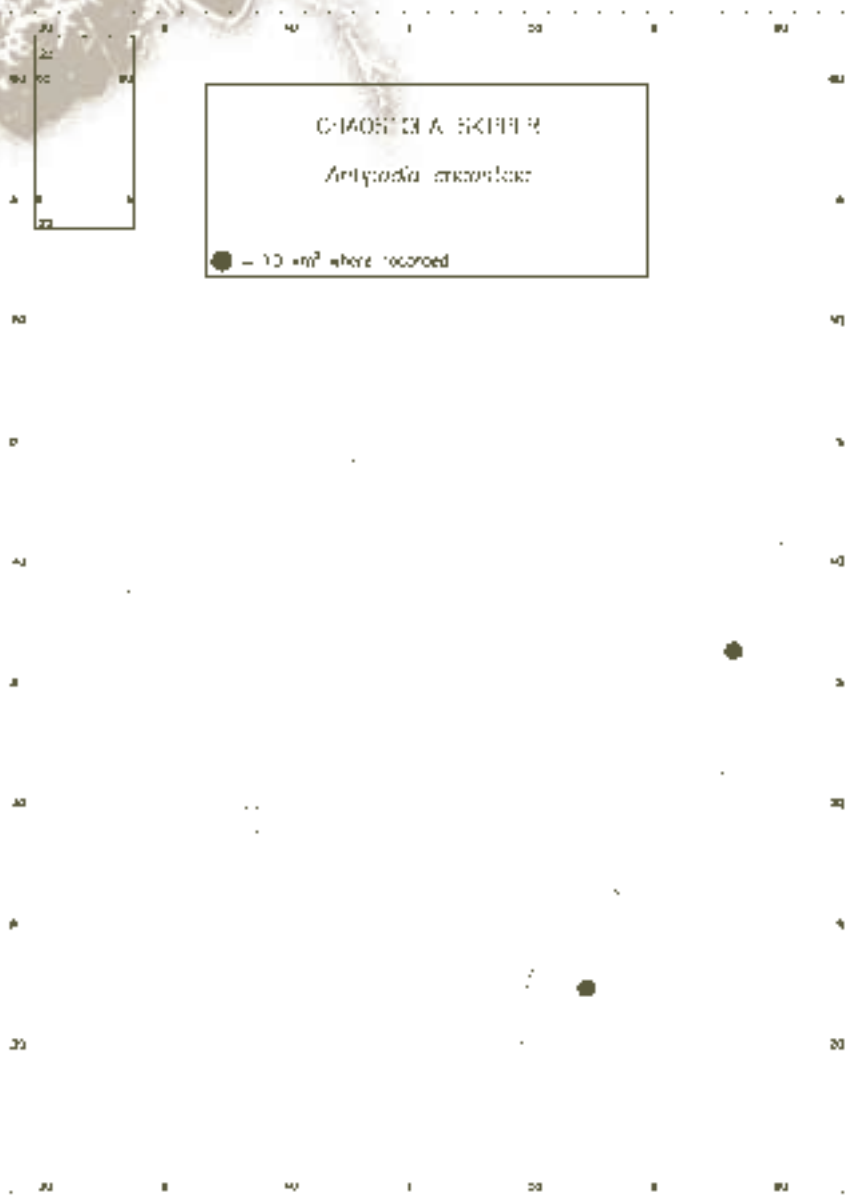
Douglas, R. G. (1984). A note on *Hesperilla chaostola leucophaea* Couchman (Lepidoptera: Hesperiidae). Australian Entomological Magazine 10(6): 84.

Neyland, M. (1994). The ecology and conservation status of three rare hesperiid butterflies in Tasmania. Wildlife Report 94/3. Parks and Wildlife Service, Hobart.

Tasmanian Field Naturalists Club (1994). Butterflies of Tasmania. Tasmanian Field Naturalists Club Inc., GPO Box 68, Hobart, Tasmania.

1: 25 000 TASMAP sheets with known sites and potential habitat

Barnes Bay Blackmans Bay Henry



PTUNARRA BROWN BUTTERFLY

Oreixenica ptunarra (Nymphalidae)

[Illustration by Karen Richards]

Status

Tasmania's *Threatened Species Protection Act 1995* - Vulnerable
Commonwealth *Endangered Species Protection Act 1992* - not listed

Description

A small brown to orange butterfly with a wingspan of between 25 to 33 mm. There are three forms of the species *Oreixenica ptunarra* which differ only in their location and background colour of the wing. The male butterflies are all mainly brown and the females orange, both sexes having a distinctive round black spot with a white centre on the fore and hind wings. Females are larger and more thinly scaled than males. Fully fed caterpillars are about 20 mm long and pointed at both ends and are greenish-grey with an olive brown line on the back. They have a few scattered black hairs on the head.

Distribution, Habitat and Biology

Ptunarra brown butterflies are endemic to Tasmania. They occur in colonies across central Tasmania in areas of native grassland, woodland and sedgeland above about 300 m. These areas must have a cover of tussock grass (*Poa* species) which is greater than about 15%. The species prefers flat and generally boggy grassland areas and can form discrete colonies covering 1 ha or more.

The range of the species covers five regions: the northwest plains, Central Plateau, Steppes, southern Midlands and eastern highlands. In the northwest plains, habitat is grassy open woodland dominated by *Eucalyptus rodwayi* or *E. delegatensis*. In the Central Plateau, habitat is grassy shrubland or open grassland dominated by *Poa gunnii*. In the Steppes region, habitat is grassy plains and poorly drained areas with *E. rodwayi* woodland. Habitat in the southern Midlands is lowland *Poa labillardierei* grassland, while in the eastern highlands it is poorly drained areas with grassy or sedgey open woodland, often dominated by *E. rodwayi*. The species does not extend to the lowland plains of the Midlands as it is too warm and dry for the main food plant *(Poa)*. About 150 colonies are known. The locations and boundaries of all colonies are contained in Neyland (1992) and Bell (1998) and listed in Section I.

Highland tussock grassland is found on high altitude plains, usually composed of basalt or other base rich rocks. The most extensive areas are in the Surrey Hills, the Vale of Belvoir, the Middlesex Plains, the Borradaile Plains in the northwest of the State, and on the medium elevation plains of the Central Plateau. There has been some considerable conversion of highland silver tussock grassland to improved pasture in the last few decades, and most of its area is subject to stock grazing. Although a large proportion of the original area of the vegetation type survives, most is heavily invaded by exotic herbs and grasses and native shrubs.

Adults form discrete colonies and have a very short flying season lasting only about two to three weeks in late February to early April. They fly only on mild to warm days when temperatures rise above 18 degrees with a light breeze. They are relatively weak fliers, rarely lifting above the top of the tussocks. Dispersal between colonies is rare, therefore local habitat disturbance can lead to population extinction. The eggs are relatively large and are dropped by the female as she flies low over grass tussocks. These hatch in about six weeks and the small caterpillars over-winter then begin feeding in spring on the tips of the tussock. They pupate in February and emerge as adults about one month later.

Key Sites

- The northwest plains, Central Plateau, Steppes, southern Midlands and eastern highlands in areas of native grassland, woodland and sedgeland above about 300 m altitude, where the cover of tussock grass (*Poa* species) is greater than about 15%.
- Surrey Hills
- Vale of Belvoir
- Middlesex Plains
- Borradaile Plains

Key Threats

- Loss and fragmentation of tussock grassland due to clearing, especially for pasture and forestry plantation.
- Draining and disturbance to the water table.

- Too frequent and repeated burning of tussock grass habitat.
- Overgrazing, resulting in the loss of native food plants.

Management Recommendations for Commercial Forestry

- Detailed recommendations are provided to Forest Practices Officers under the Forest Practices Code.

Habitat Management

- Maintain native grasslands and grassy woodlands in good condition for the butterfly by light grazing only. Do not stock heavily for extended periods as this quickly reduces the quality and extent of the tussock grassland, including specific highly palatable species, and also leads to patches of bare ground allowing weed invasion. It is better to lightly graze or adjust your stock levels to allow grasses to grow, spelling them over the spring and summer.
- Cool burn grasslands in a mosaic pattern, rotating different patches burnt each year on a cycle of approximately 4 to 7 years. This pattern reduces fuel loads and maintains grassy elements without damaging the tussocks. Cool fires in winter or autumn are recommended as they are less likely to kill caterpillars living in the base of the tussocks. Fires in the adult flight season (February to April) should be avoided completely. Don't burn during drought as re-growth will be slow and the ground will be bare for longer.
- Many butterfly colonies are small (1 ha) and fencing to avoid trampling or overgrazing by stock would be ideal when problems arise.
- Avoid ground disturbance in or near colonies during winter or in wet conditions, especially vehicle use, roading and indiscriminate tracks. These lead to further fragmentation of colonies and increased fire and weed invasion.
- Avoid any alteration to drainage in or near colonies as this may affect tussock growth. The butterfly prefers flat, boggy areas and will be sensitive to changes in water level and water quality. This includes direct contact or spray drift from chemical applications used for weed control or pasture development.
- Plantation development and clearing of tussocks destroy the butterfly's habitat and should not occur in or near colonies. Light selective logging is preferable and may even promote tussock growth in some cases. Please seek advice.
- Areas of potential habitat should be surveyed for presence of the butterfly (during the adult flight period) before considering any conversion of native grassland for other use. Please contact the Threatened Species Unit for advice.
- If you manage land containing ptunarra brown butterfly colonies consider some form of long-term protection, e.g. wildlife sanctuary, management agreement, covenant, etc. Contact the Threatened Species Unit, we may be able to help. A number of forest reserves and wildlife priority areas are in place for these species which may be nearby or on the boundary of your property. These could be extended with your help.

Other ways to Help

- Learn how to identify Tasmania's unique species of butterfly using the guide produced by the Tasmanian Field Naturalists Club (1994). Be aware of the species' special link with *Poa* tussock vegetation.
- If you manage land containing a colony, keep records of the butterfly's habits, including changes to nearby areas. Long-term monitoring of the species will help us understand its population cycle and distribution pattern.

More Information

Bell, P. (1998). The ptunarra brown butterfly *Oreixenica ptunarra* Recovery Plan 1998 - 2003. Nature Conservation Branch, Parks and Wildlife Service, Tasmania.

Couchman, L. E and Couchman R. (1978). The butterflies of Tasmania. Tasmanian Year Book 1977 No. 11: 66-96.

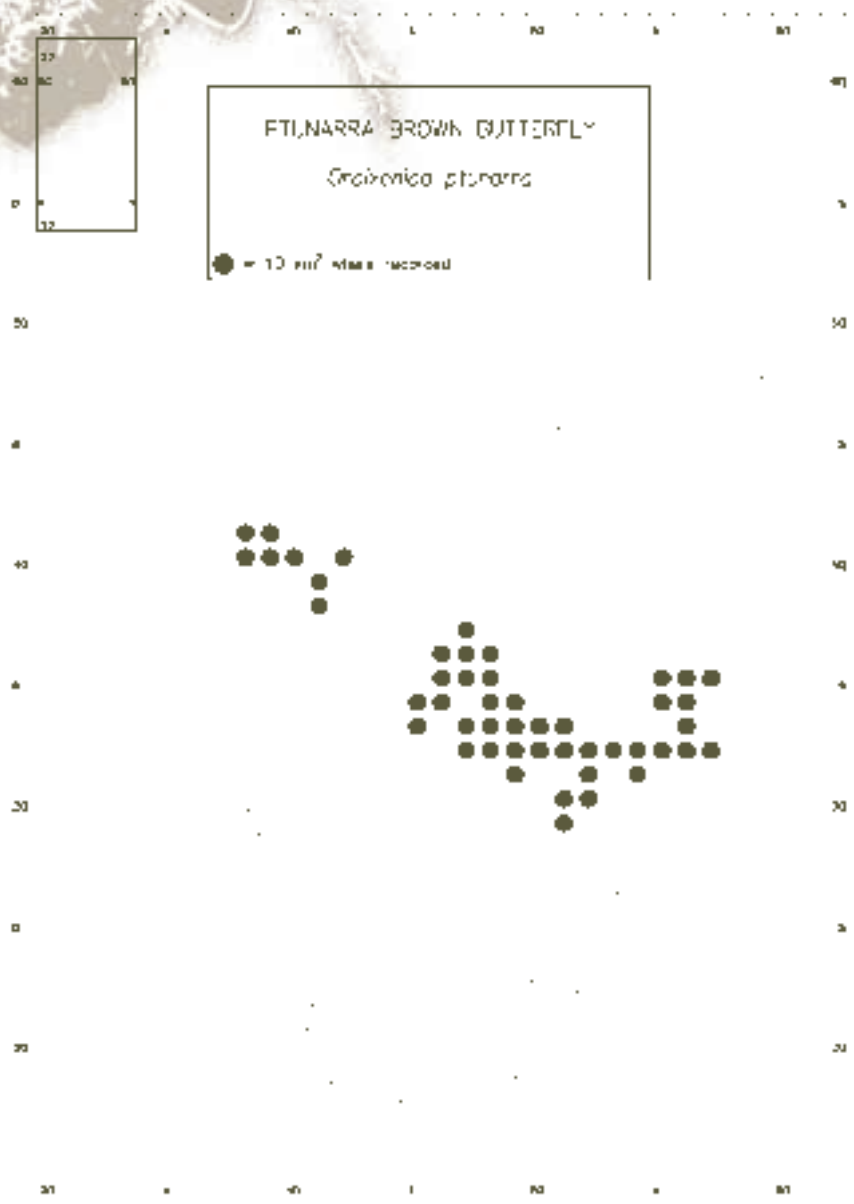
Neyland, M. G. (1992). The ptunarra brown butterfly *Oreixenica ptunarra* Conservation Research Statement. Australian National Parks and Wildlife Service, Endangered Species Project No 3. Canberra, ACT.

Neyland, M. G. (1993). The ecology and conservation management of the ptunarra brown butterfly *Oreixenica ptunarra* (Lepidoptera; Nymphalidae; Satyrinae) in Tasmania, Australia. Papers Proceedings Royal Society Tasmania 127: 43-48.

Tasmanian Field Naturalists Club (1994). Butterflies of Tasmania. Tasmanian Field Naturalists Club Inc., GPO Box 68, Hobart, Tasmania.

1: 25 000 TASMAP sheets with known sites and potential habitat

Achilles
Ada
Arthurs Lake
Baretop
Block
Borradaile
Bothwell
Bradys Lookout
Breona
Bronte
Campbell Town
Cathedral
Cethana
Charter
Cluny
Colonels
Cradle
D'Arcys
Dee
Dennistoun
Echo
Ellinthorp
Faddens
Guildford
Hermitage
Ina
Interlaken
Kempton
Lake Mackenzie
Lea
Leake
Lemont
Liena
Loongana
Luina
Miena
Millers
Monpeelyata
Morriston
Oatlands
Olive
Parrawe
Pearse
Pencil Pine
Penny
Poatina
Pillans Lake
Ross
Rowallan
Royalty
Roys
Snow
Split Rock
Steppes
Stonor
Table
Tooms
Tunbridge
Vincents
Waddamana
Waratah
Wihareja
Will


FITZNARRA BROWN BUTTERFLY
Oreixenica ptunarra

BROAD-STRIPED GHOST MOTH

Fraus latistria (Hepialidae)

[Illustration by Karen Richards]

Status

Tasmania's *Threatened Species Protection Act 1995* - Rare
Commonwealth *Endangered Species Protection Act 1992* - not listed

Description

The broad-striped ghost moth is a medium sized moth with a slender body. Adult males have a wingspan of about 25 to 30 mm, female wingspans being slightly smaller at 25 to 28 mm. The thorax is pale brown and the fore wings are pale yellowish brown with a distinct white streak from the base almost to the outer margin. The white streak has parallel sides and is surrounded by dark brown colouring in the male and greyish brown in the female. The hind wing is pale brownish grey in males and greyish white in females with tufts of hair at the base. As only adults have been collected little is known of the other stages (eggs, caterpillars and pupae).

Distribution, Habitat and Biology

The broad-striped ghost moth occurs only in Tasmania and is known historically from five widely separated areas: Launceston, Scotts Peak, Ridgeway, Blackmans Bay and Kingston. Searches in other areas of potential habitat such as on the Hobart Domain, Mt Nelson, Mt Wellington and Snug Tiers have been unsuccessful. The species was first collected in 1946 at Kingston. Since then it has been recorded in the north and southwest, the last collecting site being at Scotts Peak Dam in 1985. Habitat requirements of the species are largely unknown as moths have been collected using light traps from buttongrass moorland at Scotts Peak and from shrubby eucalypt woodland near Hobart. A possible common feature of the known locations is the presence of sedges of the Cyperaceae and Restionaceae families. It is likely that most of their traditional range has been cleared for urbanisation.

Little is known of the life history of this moth except that adults have a brief flight period in March to April. They are nocturnal, emerging after dusk in dry conditions. Adults of the hepialid family have reduced mouth parts and do not feed. The caterpillar stage has not been collected, but it is likely they have a similar biology to other species of ghost moth. Females probably deposit their eggs on the ground after mating and larvae tunnel into the soil, coming to the surface at night to feed on grasses and sedges. The larval stage probably lasts from May to December, followed by the subterranean pupal stage which lasts until autumn when the adults emerge.

Key Sites

Known past and present localities are widely dispersed and include:

- Launceston
- Scotts Peak Dam
- Ridgeway
- Kingston
- Blackmans Bay

Key Threats

- Continued loss of native vegetation habitat through expanding urbanisation.
- Insufficient information on range, habitat and ecology of the species to determine management needs.

Management Recommendations and Other Ways to Help

- Information on current distribution is severely limited. A specialist survey and conservation assessment should be undertaken. Areas of potential habitat which should be surveyed for the broad-striped ghost moth include Coffee Creek (Huntingfield), Ida Bay area, Bruny Island heathland, Wielangta State Forest, Binalong Bay area and Condominium Creek area (Scotts Peak Road).
- Retain and rehabilitate as many areas of undisturbed native vegetation as possible, especially those containing sedge species in areas where the broad-striped ghost moth is known to occur or could potentially occur.
- Learn to identify this species and its possible food plants in the Cyperaceae, Restionaceae and *Gahnia* groups. Information is lacking on all aspects of the species' life history.

More Information

Hardy, R. J. (1973). The biology of *Fraus simulans* Walker (Lepidoptera: Hepialidae). Journal Australian Entomological Society 30: 113-120.

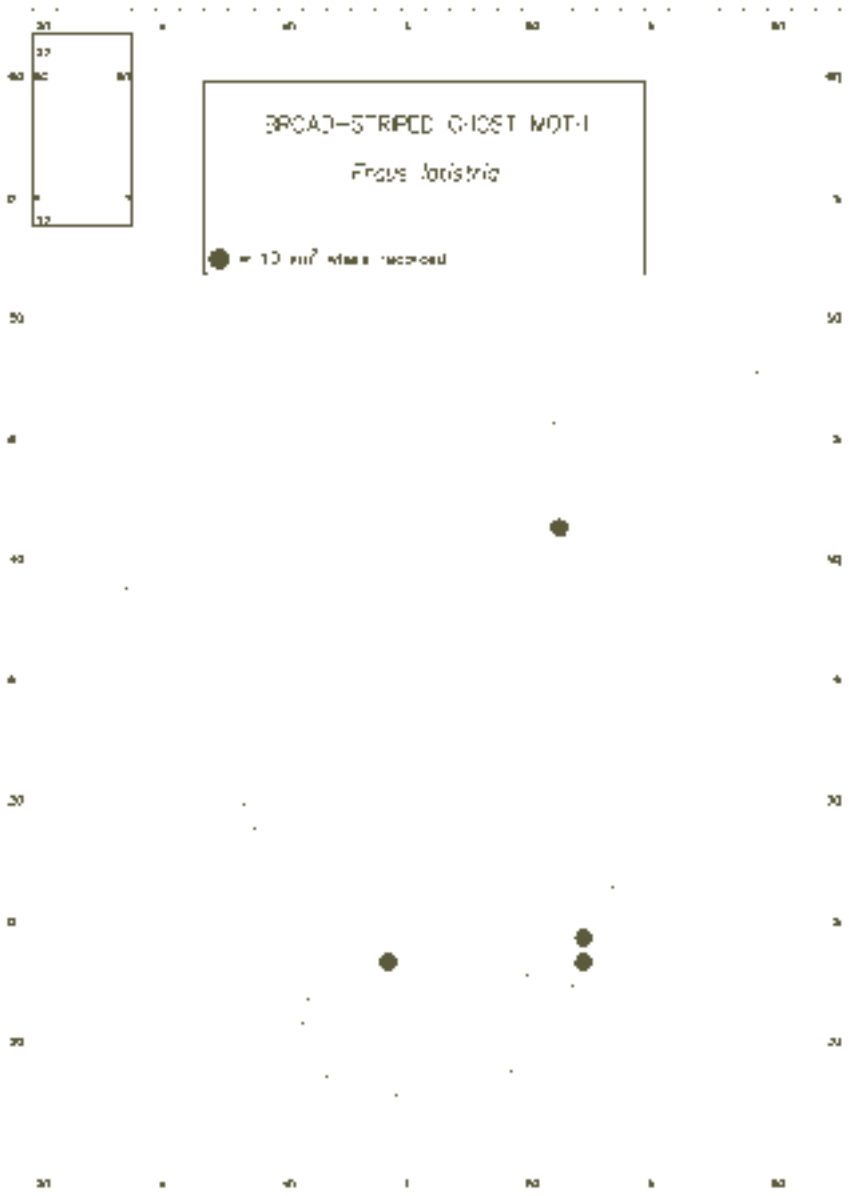
Nielsen, E. S. and Kristensen, N. P. (1989). Primitive Ghost Moths: Morphology and taxonomy of the Australian Genus *Fraus* Walker (Lepidoptera: Hepialidae s. lat.). p138-139 in Monographs on Australian Lepidoptera Vol. 1. CSIRO Publications, Melbourne.

Threatened Species Unit (1999). Listing Statement: Broad-striped ghost moth *Fraus latistria.* Parks and Wildlife Service, Tasmania.

1: 25 000 TASMAP sheets with known sites and potential habitat

Adventure Bay	Anne	Barnes Bay	Binalong
Blackmans Bay	Cloudy	Fluted Cape	Great Bay
Hastings	Kellevie	Launceston	Leprena
Partridge	Sandspit	Scotts	Taroona

BROAD-STRIPED GHOST MOTH



PENCIL PINE MOTH

Dirce aesiodora (Geometridae: Archiearinae)

[Illustration by Karen Richards]

Status

Tasmania's *Threatened Species Protection Act 1995* - Vulnerable
Commonwealth *Endangered Species Protection Act 1992* - not listed

Description

A small moth with a wingspan ranging from 20 to 30 mm. The fore wings are black and white and the hind wings are black with a bright orange-yellow patch. The cryptic fore wings provide camouflage when the moth is at rest, while the flash of colour on the hind wings acts to confuse predators during flight. The larvae are termed 'loopers' due to their moving by stretching first with their front half then to the same position with their rear half. They are thin, cylindrical and green, making them well camouflaged in pencil pine foliage.

Distribution, Habitat and Biology

Pencil pine moths occur only in Tasmania and are restricted to high altitude montane habitats above 960 m. The species was first collected in 1917 at Cradle Mountain and for many years was only known at four sites: Cradle Mountain, Mt Doris, Lake Ada and parts of Mt Field National Park. Recent surveys by P. Bell (1998) have greatly expanded the species' distribution and it is likely that its threatened status may be reassessed.

Pencil pine moths belong to a primitive group of cosmopolitan moths known as Archiearinae, which are believed to be relics from Gondwanan times. Pencil pine moths are associated with high altitude alpine and sub-alpine forests wherever the endemic conifer pencil pine *(Athrotaxis cupressoides)* occurs. They live in pencil pines either as single trees, within small or throughout extensive pure or mixed stands of pencil pine. Understorey species can range from grass, heath, shrub and sphagnum. Although well reserved, about 40% of pencil pine rainforest in Tasmania has been destroyed by fire, and will never regenerate. More recently a cold tolerant *Phytophthora* related disease has been discovered which has killed stands of pencil pines near Pine Lake on the Central Plateau. This disease has only previously been recorded in North and South America.

Little is known of the life history of the pencil pine moth. They fly during the day and are active around the canopy of pencil pines in summer during calm, sunny conditions. Adult males are territorial and will drive off other males during the breeding season. Pencil pine moths probably breed once a year in summer and have a two year life cycle. Females lay their eggs singly or in clusters on the leaves of pencil pines. The hatched caterpillars, 'loopers', are thought to stop growing over winter, and begin growing again when the weather warms up to pupate in spring of the next year, and emerge as adults the following summer.

Key Sites

All high altitude alpine forest, sub-alpine forest and rainforest containing pencil pine *Athrotaxis cupressoides*, especially:

- Lake Skinner (Snowy Range)
- Shadow Lake and Forgotten Lake (slopes of Mt Rufus)
- Near Lake St Clair
- Along Dove River between Pencil Pine and Lake Dove
- Solomons Jewels, Dixons Kingdom, Lake Ball and Lake Fanny (Walls of Jerusalem)
- Between Lake Ada and Tulleh Lagoon
- Between Lady Lake and Lake Nameless
- Lake Seal and Tarn Shelf
- South of Laughing Jack Lagoon (Wentworth Hills Forest Reserve)

Key Threats

Any loss of pencil pine in known range, particularly from:

- Fire
- Cold tolerant *Phytophthora* pathogen

Habitat Management and Ways to Help

- Although most areas of habitat are reserved, fire is a major threat as high altitude rainforest cannot regenerate after fire. If camping in or visiting such sensitive areas, please observe all regulations relating to the use of fuel stoves. It is illegal to light fires on peat soils because of their slow, smouldering capacity.
- Avoid transporting any traces of soil to these areas as it may carry plant diseases. Thoroughly wash muddy machinery, vehicles and bushwalking gear, such as boots, gaiters and tent pegs, and safely dispose of the water afterwards (i.e. through the sewerage system).
- Observe all signs and barriers relating to 'No Go' zones for quarantine.

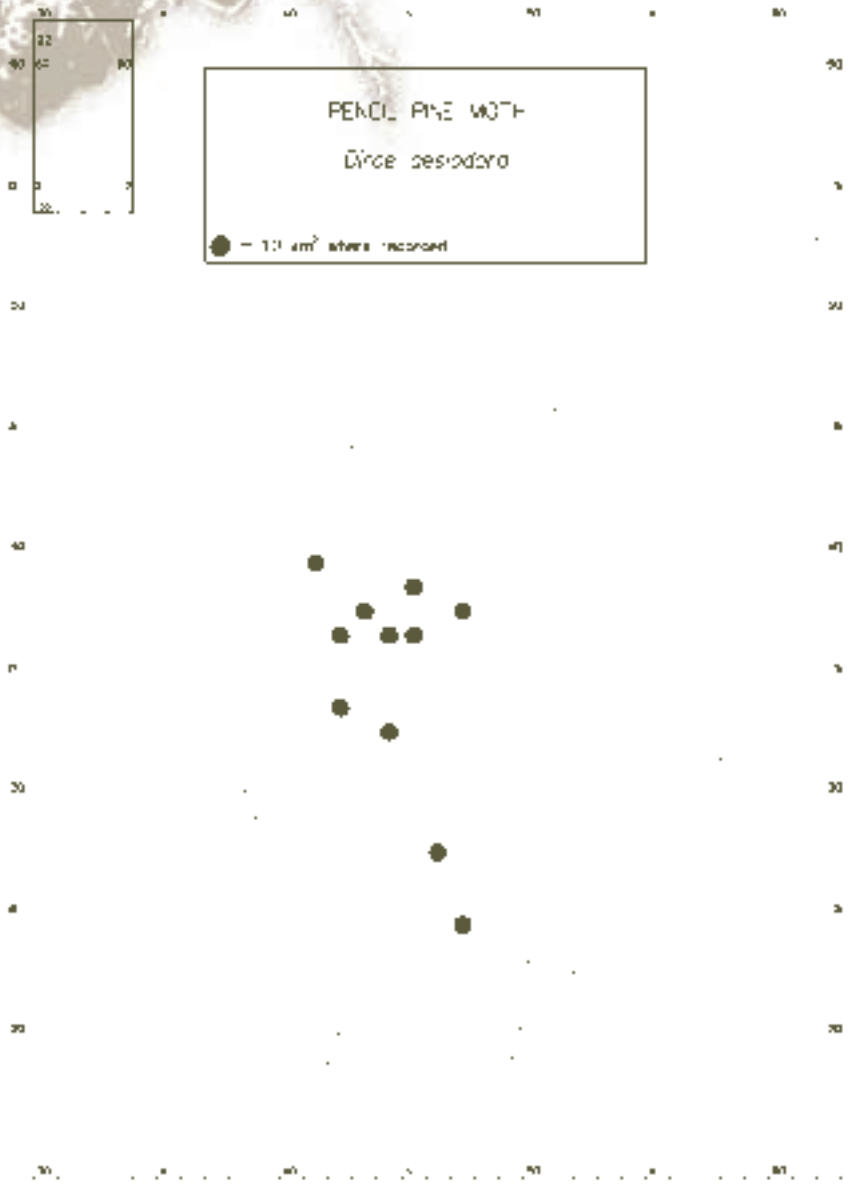
More Information

Bell, P (1998). Pencil Pine moth *Dirce aesiodora*: results of a survey undertaken January to February 1998. Report to World Heritage Area, Parks and Wildlife Service, Tasmania.

Threatened Species Unit (1999). Listing Statement: Pencil pine moth *Dirce aesiodora*. Parks and Wildlife Service, Tasmania.

1: 25 000 TASMAP sheets with known sites and potential habitat

Achilles	Ada	Anne	Arrowsmith
Breona	Bronte	Cathedral	Collingwood
Cradle	D'Arcys	Dobson	Dome
Du Cane	Dundas	Glovers	Gordonvale
Gormanston	Goulds	Lake Mackenzie	Miena
Nevada	Oceana	Olympus	Pencil Pine
Pillans Lake	Poatina	Precipitous	Quamby Bluff
Rowallan	Rufus	Strahan	Tullah
Tyndall	Waterloo	Will	


PENCIL PINE MOTH
Dirce cesiodora

SALTMARSH MOTHS (2 species)

Chevron looper moth *Amelora acontistica* **(Geometridae: Ennominae)**
Saltmarsh looper moth *Dasybela achroa* **(Geometridae: Sterrhinae)**

[No illustrations or photos available]

Status

Chevron looper moth

Tasmania's *Threatened Species Protection Act 1995* - Vulnerable
Commonwealth *Endangered Species Protection Act 1992* - not listed

Saltmarsh looper moth

Tasmania's *Threatened Species Protection Act 1995* - Vulnerable
Commonwealth *Endangered Species Protection Act 1992* - not listed

Description

The chevron looper moth and saltmarsh looper moth belong to the family Geometridae (loopers) and are characterised as being small sized moths with broad wings. The larvae are termed 'loopers' due to their moving by stretching first with their front half then to the same position with their rear half. Adult chevron moths are dull coloured but distinctive in appearance, with white hind wings, and fore wings that are whitish with dark chevron patterns. Saltmarsh moths are well camouflaged with mottled pale brown fore wings with darker transverse lines, and mottled orange-brown hind wings.

Distribution, Habitat and Biology

Prior to its discovery at Cremorne, south of Hobart, the chevron looper moth was found only on Kangaroo Island in South Australia. It is now known to be at two sites east of Hobart: Cremorne and the Lauderdale tip area. The saltmarsh looper moth is endemic to Tasmania, the first record being collected in 1902 and labelled as collected in the 'Hobart area'. The species was rediscovered at the Lauderdale tip extension site in 1994. Although both species occur in saltmarshes, very little is known about their habitat requirements and life history. The food plants of the caterpillars are unknown. The species have not been found in other likely saltmarsh at nearby Marion Bay or Barilla Bay.

Adults of both species are active at night and are attracted to light. They probably feed on nectar from flowers of saltmarsh plants. Chevron moths fly in late summer and autumn and have an annual life cycle.

Key Sites

Chevron looper moth

- Near Pipe Clay Lagoon at Cremorne
- The Lauderdale tip area

Saltmarsh looper moth

- The Lauderdale tip area

Key Threats

Destruction of the saltmarsh habitat through any activity such as:

- Expansion of and existing tip activities
- Driving off-road vehicles on saltmarsh
- Stock grazing, leading to displacement of native plants, weed invasion and soil compaction
- Changes to drainage pattern

Habitat Management and Other Ways to Help

- Both these moth species are very restricted in location therefore it is essential to protect existing habitats. Saltmarshes are a unique ecosystem which are easily degraded. Retain any existing areas of saltmarsh in an undisturbed condition. Often the best management practice is to 'leave alone'.
- Avoid building drains or levees that alter drainage patterns or direct fluids and waste on to saltmarsh areas.

- Prohibit vehicles and stock from grazing and trampling saltmarsh vegetation and introducing weed species.
- Fence areas if necessary to retain saltmarsh integrity and to prevent further dumping of rubbish and chemicals.
- Full surveys should be undertaken prior to any expansion or redevelopment in the Lauderdale tip or Pipe Clay Lagoon areas.

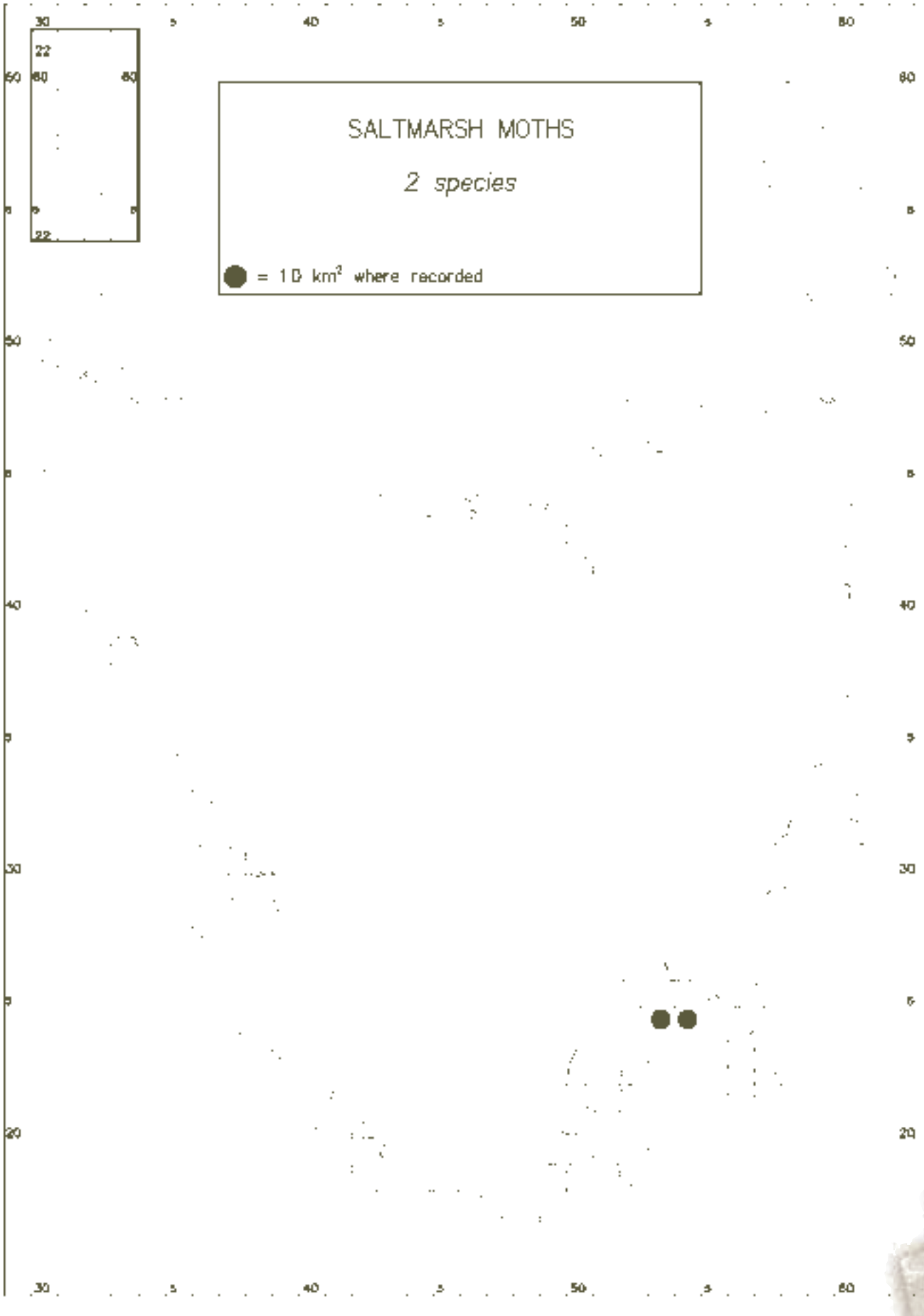
More Information

Common, I. F. B. (1990). Moths of Australia. Melbourne University Press, Melbourne.

1:25 000 TASMAP sheets with known sites and potential habitat

Chevron looper
Cremorne, Taroona

Saltmarsh looper
Cremorne, Taroona


SALTMARSH MOTHS
2 species
= 10 km² where recorded

TUNBRIDGE LOOPER MOTH

Chrysolarentia decisaria (Geometridae)

[No illustration or photo available]

Status

Tasmania's *Threatened Species Protection Act 1995* - Extinct (status to change as recently rediscovered)
Commonwealth *Endangered Species Protection Act 1992* - not listed

Description

A patchy brown coloured moth with pale and dark transverse bands on the fore wings.

Distribution, Habitat and Biology

The Tunbridge looper moth was previously recorded in both Victoria and Tasmania, with many records collected during the 1880s to 1900. In Victoria it occurred on the basalt plains northwest of Melbourne but it no longer occurs there due to intensive urbanisation. In Tasmania the moth was recorded in grassy woodland and grassland at Billop near Cressy and Epping Forest, but is now extinct at these sites due to changes in habitat. In 1995 the moth was discovered at Township Lagoon near Tunbridge, where it was found to occupy remnant native saline grassland vegetation. The population at this site was estimated to be about 100 individuals.

Tunbridge looper moths fly during the day and adults can be found for only about one week in March. It is thought that the caterpillar probably eats succulent native annual plants, such as native geraniums or buttercups, which grow between tussocks or at ground level.

Key Site

- Only currently known from Township Lagoon near Tunbridge

Key Threats

Destruction of vegetation occurring near saline soaks by:

- Grazing by livestock which denude vegetation, introduce weeds and compact the soil
- Clearing for pasture or any other purpose
- Inappropriate burning intervals leading to loss of key native grasses and invasion of exotics
- Weed invasion, especially by gorse and blackberry
- Alterations to drainage which changes the saltlake ecology
- Lack of information on the species, distribution, ecology and life history

Habitat Management and Other Ways to Help

- Control weed invasion (especially gorse) in the Township Lagoon area. Seek advice for the most current advice on appropriate techniques.
- Avoid trampling vegetation with stock and vehicles. This may best be managed through fencing either of access routes or around intact vegetation within the Lagoon area.
- Maintain natural drainage patterns to the Lagoon and surrounding area.
- To maintain the integrity of tussock grassland habitat at Tunbridge Lagoon a fire regime of a 2 to 3 year interval is probably most appropriate if undertaken on a small patchwork mosaic at different times of the year. This means that at any one time there remain areas of unburnt vegetation reaching ten years or older. Before undertaking fire management seek advice from the Flora Section of Parks and Wildlife on the best method.
- Very little is known of the ecology and life history of this species and more surveys are needed in other areas of similar habitat. Become familiar with the species' identification and target it when you are out and about on warm summer days.

More Information

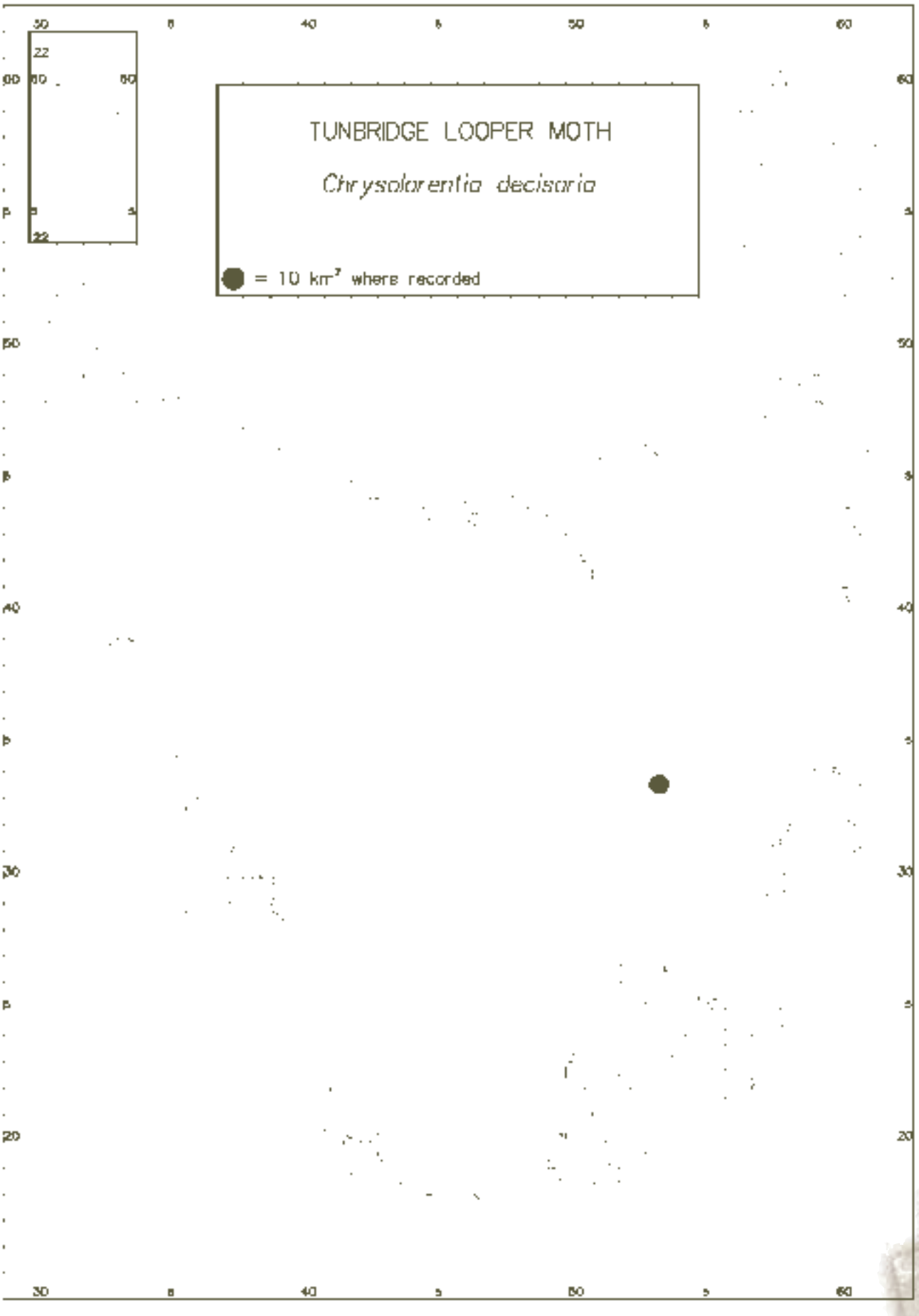
Common, I. F. B. (1990). Moths of Australia. Melbourne University Press, Melbourne.

Zacharek, A. R., Gilfedder, L. and Harris, S. (1997). The Flora of Township Lagoon Nature Reserve, and its management, Tunbridge, Tasmania. Papers Proceedings Royal Society Tasmania 131: 57-66.

1:25 000 TASMAP sheets with known sites and potential habitat

Tunbridge

TUNBRIDGE LOOPER MOTH



SCHAYERS GRASSHOPPER

Schayera baiulus (Acrididae)

[Photo from Key 1991]

Status

Tasmania's *Threatened Species Protection Act 1995* - Endangered
Commonwealth *Endangered Species Protection Act 1992* - not listed

Description

A flightless grasshopper of pale brown colour mottled with black. Body and head are about 3.5 cm long and the antennae are short. The immature stages, i.e. nymphs, are a uniform pale grey to beige colour. Adult males of the species have never been found.

Distribution, Habitat and Biology

This grasshopper was historically collected from Cape Grim, Woolnorth in the 1840s but despite intensive searching for about 150 years it was only rediscovered in the late 1980s. The species is currently only known at two disjunct locations, one near the original site at Cape Grim and the other near the 'Red Hills' property, northwest of Gladstone. It is likely that it may have once and possibly still does occur in very isolated patches across the northern coastline of Tasmania. Habitat where nymphal specimens have been found are generally remnant coastal heathland and open forest.

Little is known of the life history of Schayers grasshopper other than during the winter it is in the nymphal stage, giving rise to adults in the spring which disappear by about January. Due to extremely small wing rudiments it is likely that the adults are flightless. The time taken to moult through the instar stages to the adult form is exceptionally long (about 3 months). Feeding observations of a captive specimen suggest the species may be very specific to a plant source but this is unknown.

Key Sites

- Cape Grim area surrounding Suicide Bay, Victory Hill and Valley Bay
- East of 'Red Hills' on Tuckers Road, northwest of Gladstone

Key Threats

- Lack of information on the life history requirements of the species which prevent detailed management recommendations.
- Any activities altering the heathy woodland habitat, such as overgrazing and conversion to improved pasture at the known sites.

Management Recommendations for Commercial Forestry

- Detailed recommendations are provided to Forest Practices Officers under the Forest Practices Code.

Habitat Management and Other Ways to Help

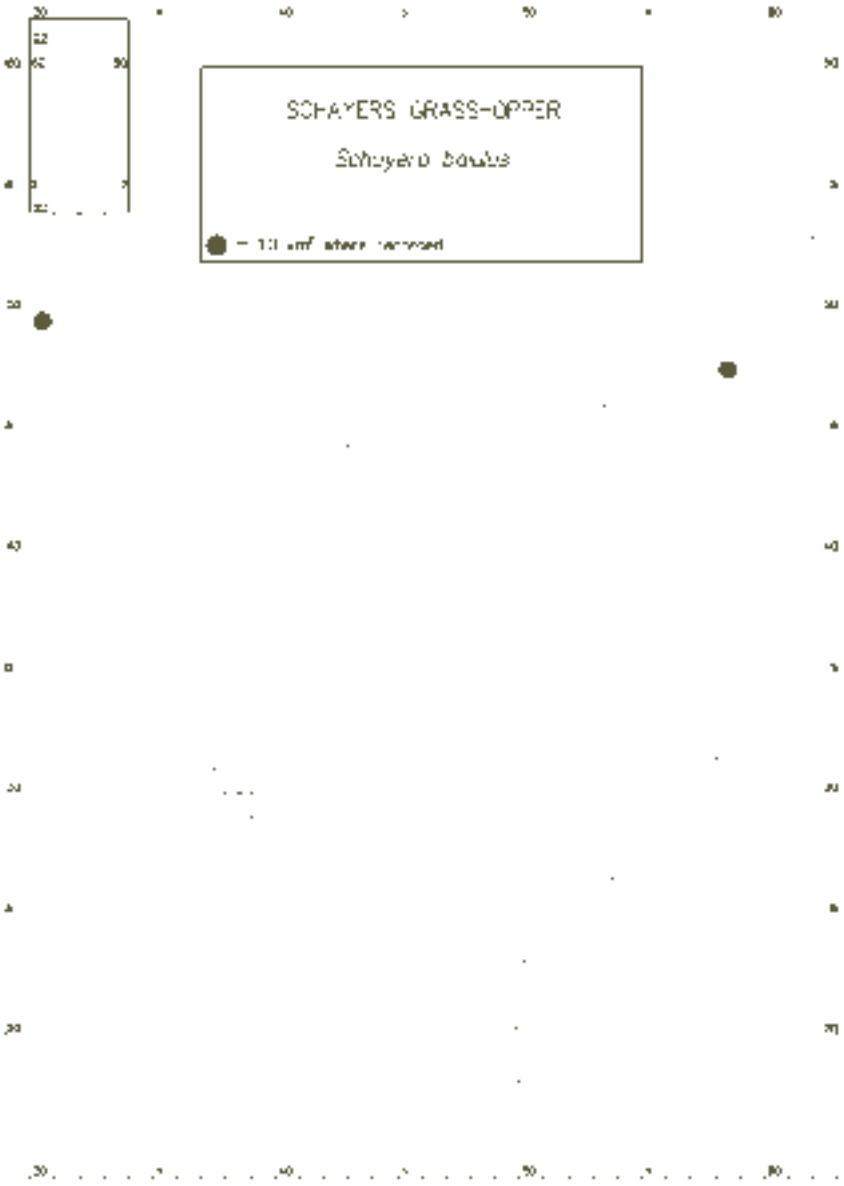
- No logging or clearing for any purpose should occur at the two known locations.
- Survey information on this species is extremely limited. If you own property or are visiting these areas, learn how to identify this species or seek advice if you collect a specimen fitting its description.
- Surveys for the species should target (1) the coastal area between Cape Grim and Studland Bay, (2) northwestern offshore islands of Robbins, Hunter, and Three Hummock islands (3) Rocky Cape National Park (4) Ringarooma Tier (5) islands of the Furneaux Group, especially areas characterised by *Allocasuarina verticillata* forest.
- October is the best time to undertake survey work.

More Information

Key, K. H. L. (1991). Rediscovery of the Tasmanian grasshopper *Schayera baiulus* (Orthoptera: Acrididae) in the field. Australian Journal of Zoology 39: 655-660.

1:25 000 TASMAP sheets with known sites and potential habitat

Grim, Musselroe


SCHAYERS GRASS-HOPPER

CADDISFLIES (17 species)

17 species of caddisfly (Order Trichoptera)

[Illustrations of adult and larva from Neboiss 1981]

Status

Tasmania's *Threatened Species Protection Act 1995* - status as shown below
Commonwealth *Endangered Species Protection Act 1992* - not listed

Species and Key Sites

Threatened Species	Tas. Status	Key Sites
Costora iena	Extinct	Great Lake, Shannon River and near Miena
Diplectrona castanea	Extinct	Mt Field National Park area
Diplectrona lyella	Rare	Hellyer Gorge, Little Florentine River, Nelson Falls
Ecnomina vega	Rare	Macquarie River 8 km west of Campbell Town
Hydrobiosella armata	Rare	Mt Wellington area
Hydrobiosella sagitta	Rare	St Columba Falls near Pyengana
Hydroptila scamandra	Rare	Scamander River at Upper Scamander
Leptocerus souta	Rare	Macquarie River west of Campbell Town
Oecetis gilva	Rare	South Esk River near Evandale
Orphninotrichia maculata (spotted microcaddisfly)	Rare	Wedge River, Gelignite Creek at Scotts Peak, Suckling Creek Nubeena
Orthotrichia adornata	Rare	Derwent River at Bushy Park
Oxyethira mienica (Miena caddisfly)	Rare	Ouse River near Miena, Scotts Peak Dam Road
Ramiheithrus kocinus	Rare	Small creek near Corinna
Stenopsychodes lineata	Rare	Bluff Hill Creek 12 km south of Marrawah
Tasimia drepana	Rare	Huon River 2 km upstream of Picton River
Taskiria mccubbini (McCubbins caddisfly)	Endangered	Lake Pedder (before flooding), near Coronation Creek
Taskiropsyche lacustris (Lake Pedder caddisfly)	Endangered	Lake Pedder (before flooding), near Teds Beach

Note: *Costora iena* is also included in the profile for the Great Lake ecosystem.

Description

Adult caddisflies are small insects similar in appearance to moths except that they do not have a coiled sucking proboscis (mouth parts) and their wings are covered with hairs rather than scales. Most species are dull coloured and adults and larvae range in size from 4 to 20 mm. Larvae of most caddisflies are aquatic and live on or under rocks within streams and many other aquatic habitats. Many larvae build protective covers over their abdomen, resembling wooden stick cases or shells from sand or plant fragments. Larvae have a distinct head and thorax with three pairs of walking legs and a slender pale soft abdomen.

Distribution, Habitat and Biology

There are approximately 170 species (in 21 families) of caddisflies in Tasmania, of which about 70% are endemic. Adult caddisflies are found near most types of freshwater habitats, including springs, streams, lakes and swamps. Because of their low tolerance to high nutrients and sedimentation loads, caddisflies are important indicators of rivers and streams in reasonably good condition.

Adult caddisflies depend on stream side vegetation for shelter and food. Most species fly in the evening and rest in vegetation during the daytime, although some species fly in daylight. Eggs are laid in water, where the larvae hatch. Larvae may be free-living, build a fixed net or shelter, or construct a portable case of which there are many varieties. Larvae may be predatory or feed on algae or detritus. They are the most recognisable stage of the caddisfly, because of their hard, often stick-like case, and are relatively long lived compared to adults.

The species of caddisflies listed as threatened belong to 10 families and include various forms of free-living, net-spinning, shelter-making and case-making larvae. Most are very restricted and localised in distribution, some being found at only one, unreserved site. The two extinct species have not been located since the 1930s. *Costora iena* has not been sighted since the hydro development at Great Lakes and *Diplectrona castanea* was only known in rivers and streams in the Mt Field National Park area but has not been identified since 1936.

Key Threats

The larvae of most caddisflies are aquatic and affected by water quality and changes in stream hydrology.

- Changes in water quality, e.g. increases in nutrients, siltation, pollution, etc.
- Changes in water quantity and flow patterns (e.g. insufficient environmental flow)
- Physical disturbance to stream beds, e.g. removal of stream shingle, gravel, machinery, etc.
- Removal or degradation of bank vegetation by clearing, grazing, weed invasion, weed removal, etc.

Management Recommendations for Commercial Forestry

- Detailed recommendations are provided to Forest Practices Officers under the Forest Practices Code.

Recommendations for Habitat Management

If you manage land with threatened aquatic animals, please consider these practices:

Vegetation Clearing and Buffers

- Avoid clearing native vegetation from stream side zones or stream banks. Vegetation provides shelter, shade (maintains water temperature), and essential food for insects, crayfish and other aquatic fauna. It also filters surface runoff (reducing nutrients and sediments), limits light levels, and maintains slope and bank stability.
- Stream zones should contain a mix of native understorey and overstorey plants where appropriate, including reeds, grasses, shrubs and trees. Diversity of vegetation along stream banks is important as trees, shrubs and ground cover all play different and important roles in stream bank stability. Establish vegetation as far down the base of the bank as possible. This may require special work to stabilise the toe of the bank or reduce its steepness to enable vegetation to establish.
- The width of vegetation buffers depends on the situation. The greater the buffer width, the greater the protection, the more diverse the buffer vegetation, the better the protection. In any case, for small, seasonally dry water channels buffers should be no less than 10 m wide each side, grading up to at least 60 m wide each side for larger stream zones. Two methods for calculating minimum buffer width are: a distance equivalent to the average dominant tree height, or if there are no trees, the amplitude distance between bends.
- Buffers are especially important at points where surface water enters small river channels or landscape depressions, and where flow concentrates.
- An effective buffer zone should also provide for the continuing input of large woody debris and leaf litter into the stream.

Weed and Willow Removal

- Cut and paint weeds with poison, leaving roots (and stumps of willows) intact to aid bank stability. Painting will also eliminate re-sprouting from suckers, e.g. willows.
- Removal of willows or dense weed mats must coincide with a re-vegetation program so that stream banks are not exposed to excessive erosion, light or loss of foliage. Remember that most aquatic animals like cool, shady places.
- Prevent any large, heavy machinery or structures from entering the wetland or stream bed, e.g. tractors, excavators, bridge supports, etc., even if they are being used for restoration activities. This will not only directly kill localised species and alter habitat for other aquatic animals, but the sedimentation caused by the disturbance will accumulate on the stream bed and smother fragile habitats.

- Do not remove gravel or large quantities of rock from the stream bed. This contains aquatic fauna, provides cover and disperses water flow. The removal of shingle from the river can alter the stream hydrology and lead to erosion of the stream bed and channel.
- Use only herbicides which are registered as suitable in watercourses (e.g. Roundup Biactive®). Seek advice from the Parks and Wildlife Service on types of herbicides and preferred alternatives.
- If introduced cumbungi (bullrush) is invading the site it should be destroyed as early as possible, e.g. young or early growth stages. Manual (hand) or mechanical removal must remove the entire plant, including the roots and rhizomes. If using Roundup Biactive® only apply during the flowering period (December to March).

Snags or Woody Debris

Woody debris, including snags, are a natural and important part of the river system. Snags are essential for creating a range of flow conditions, enabling a diversity of plants and animals to establish. They provide shade and shelter, and their gradual decay and trapping of leaf litter provides the food for many aquatic animals (e.g. frogs, crayfish, insects).

- Do not remove woody debris or snags from the river system. If a snag is completely blocking water flow seek advice on how to realign it to a 20 to 40 degree angle to the stream bank.
- Lop selected branches from snags near the water surface if they tend to trap debris and cause log jams.
- If the woody debris requires removal from the main stream channel, try relocating it to a position of low water velocity in the stream or place it on the outside of banks to improve stability.
- In streams which have been modified or degraded consider re-introducing woody debris into the stream system. Seek advice on the best way to undertake this.

Fertilisers, Chemicals, etc.

- Use only chemicals which are registered as suitable in watercourses as caddisflies (adults and larvae) and many other animals are extremely sensitive to chemicals, even in light doses (e.g. pyrethrin is lethal to crayfish).
- Time any fertiliser or chemical application to avoid periods of intense runoff. Instead of broadcast applications, try direct placement in the soil or place under a blanket of stubble mulching, etc.
- Trial the use of alternative 'environmentally friendly' applications, which may also be safer for stock and human health.

Managing Stock Access

Stock naturally favour wetlands and riversides and if poorly managed will completely degrade crossings, watering points and foul the water. This results in bank erosion, loss of plant species, soil compaction, weed invasion, and a build up of bacteria and viruses in the water. If at all possible 'Keep Stock Out'.

- Fencing and smart planning will enable you to manage the riparian zone and your stock. Hanging fences, electric and electronic fences, drop fences, and alternative watering points, even troughs, should be used depending on the situation.
- Timing, intensity and duration of stock in sensitive riparian zones can also be regulated to maintain the area.

Culverts, Dams, Weirs, etc.

Many aquatic animals (especially platypus, lobsters, insect larval stages and nymphs) avoid or are unable to go through culverts. Culverts channel the water flow over the smooth concrete surface and increase flow velocity. Poorly designed or poorly embedded culverts prevent upstream movement and natural mixing of aquatic species and also force larger species like lobster onto roadsides or into open situations.

- Wherever possible use bridges instead of culverts. Try alternative inverted 'U' shaped designs or irregular shapes. If round culverts are necessary they should be fully embedded in the stream bed and ideally should have an artificial substrate provided down the mid-line of the pipe (e.g. cemented rocky gravel).
- Do not construct dams, weirs, etc. anywhere in the catchment. Please seek advice. Barriers will significantly alter environmental flow regimes and may make the site totally unsuitable for many plant and animal species.

Other Ways to Help

- Become familiar with Tasmania's insect fauna. Good field guides are available from the Tasmanian Museum and Art Gallery, the Queen Victoria Museum and as part of the Fauna Handbook Series available from the University of Tasmania.
- Always use good conservation practices near streams and rivers. Never leave rubbish, fires or destroy riparian vegetation that is essential for food and water quality for aquatic life.

More Information

Fauna Handbook Series. Zoology Department, University of Tasmania, GPO Box 252C, Hobart, Tasmania 7001.

Land and Water Resources R&D Corporation (1996-1998). Riparian Management Fact Sheets 1-7. LWRRDC, GPO Box 2182, Canberra.

Land and Water Resources R&D Corporation (in press). Management and Rehabilitation of Riparian Land - Interim Technical Guidelines. LWRRDC, GPO Box 2182, Canberra.

Munks, S. A. (Ed) (1996). A Guide to Riparian Vegetation and its Management. Dept of Primary Industries and Fisheries, Tasmania.

Neboiss, A. (1981). Tasmanian Caddis-flies. Fauna of Tasmania Handbook No. 4. University of Tasmania, Hobart.

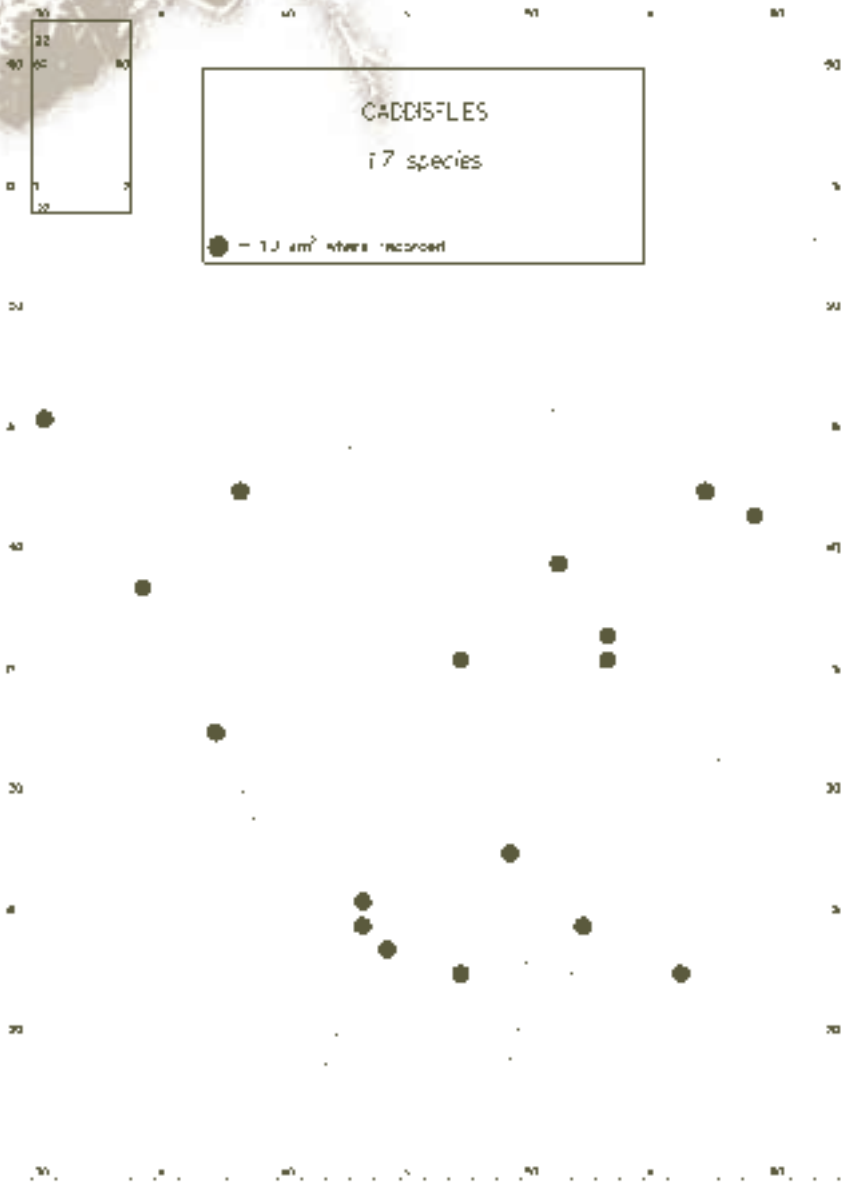
Queen Victoria Museum, Wellington Street, Launceston, Tasmania.

Tasmanian Museum and Art Gallery, Macquarie Street, Hobart, Tasmania, 7000.

Zborowski, P and Storey, R. (1996). A field guide to insects in Australia. Reed Books, Salmon Street, Port Melbourne, Vic, 3207.

1:25 000 TASMAP sheets with known localities

Adamsfield	Bluff	Bowes	Brilliant
Bushy Park	Collinsvale	Conara	Dobson
Evandale	Hobart	Jacobs	Livingstone
Longford	McPartlan	Miena	Owen
Parrawe	Picton	Port Arthur	Scotts
Solitary	Strathgordon	Teepookana	Victoria



Adult

Larva

MIENA JEWEL BEETLE

Castiarina insculpta (Buprestidae: *Castiarina*)

[Illustration from Carter 1934]

Status

Tasmania's *Threatened Species Protection Act 1995* - Extinct
Commonwealth *Endangered Species Protection Act 1992* - not listed

Description

Previously known as *Stigmodera insculpta*. A beautiful bright metallic green jewel beetle with characteristic bright yellow blotches down the grooved elytra (wing coverings), which sit folded on the abdomen. The blotches are arranged as three ovoid pairs down the abdomen and a single ovoid blotch each side extending toward the middle pair of legs. The elytra merge at the base of the abdomen curving to a sharp, short spine. This apical elytral extension (bat-like spine) is a diagnostic feature. This family of beetles all possess heavily sclerotised and rigid bodies with short, serrated antennae and three pairs of legs. The adult Miena jewel beetle has a total body length of about 12 mm and is 4.5 mm wide, making it slightly smaller than two similar species. The larvae are soft bodied with a large expanded yet flattened head, short antennae, and paired appendages on the lower abdominal segments.

Distribution, Habitat and Biology

Little is known of this species as it has not been collected since the 1920s, despite active searching during the 1980s by S. Barker, D. Cowie and others. The Miena jewel beetle belongs to one of the largest jewel beetle sub-family (Buprestinae) and has close relatives in South and Central America. Specimens of this species exist in the British Museum and the Department of Primary Industry's Entomological Collection. They were obtained from two sites in the Great Lake district near Miena.

Jewel beetles of the family Buprestidae are best recognised by their vivid jewel-like colours and patterns. The adults fly during the day and are most active in hot weather and bright sunlight. This species flies and is best identified in January. The group are nectar feeders and they typically cluster in nectar bearing flowers and trees, especially *Melaleuca* and *Leptospermum*. Beetles in this family use protective mechanisms such as chemical defence, mimicry of other insects, or camouflage. While very little is known of this particular species, adults are likely to be highly specialised to one type of food plant, most likely *Leptospermum* and/or *Baeckea*. This specificity makes the insects important pollinators of myrtaceous and myoporaceous trees and shrubs. The larvae are known to bore into the stems of woody shrubs either just beneath the bark or in the root system.

Key Site

- Only recorded in open alpine woodland above 900 m on the Central Plateau at Miena, Great Lake District

Key Threats

- Unknown

Management Recommendations and Other Ways to Help

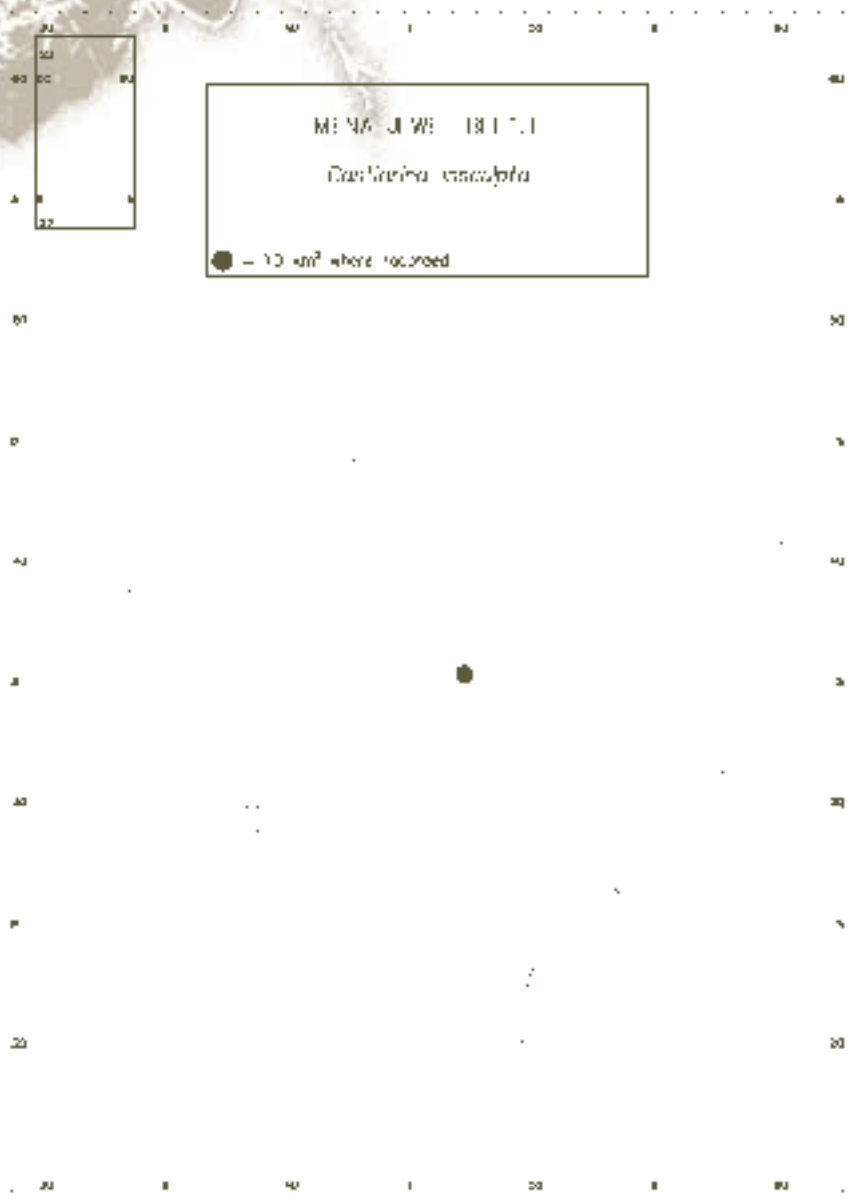
- Little is known of this species' distribution or habitat requirements. Active searches for the species should be undertaken whenever possible. Please apply for a permit from the Threatened Species Unit.
- The Miena jewel beetle is protected under the *Threatened Species Protection Act 1995* and it is an offence to collect, possess, display or trade in this species unless under permit. Please report any offences to the Threatened Species Unit.

More Information

Carter, H. J. (1934). Australian and New Guinea coleoptera. Proceedings Linnean Society NSW 598: 252-269.
Cowie, D. (in prep). Taxonomy and checklist of the Buprestidae in Tasmania.
Mathews, E. G. (1985). A guide to the Genera of beetles of South Australia. Part 4. Special Educational Bulletin Series (No. 7). South Australian Museum, Adelaide.
Moore, B. P. (1983). Beetles of South-eastern Australia. Fascicle 5: 69-84. Australian Entomological Press, NSW.

1: 25 000 TASMAP sheet with known location

Miena



CATADROMUS CARABID BEETLE

Catadromus lacordairei (Carabidae)

[Photo from Moore 1983]

Status

Tasmania's *Threatened Species Protection Act 1995* - Rare
Commonwealth *Endangered Species Protection Act 1992* - not listed

Description

This species belongs to the family Carabidae, or ground beetles, of which there are about 200 species in Tasmania. It is a black and shiny beetle with bright golden-green margins along the length of the wing covers. The wing covers, which fold completely across the long abdomen, are grooved with longitudinal lines. It is quite a large beetle with a body length of 28 to 37 mm. Wings are present and the legs are long and slender. The jaws are prominent and serrated or 'secateur-like'.

Distribution, Habitat and Biology

Carabid beetles are a dominant group of terrestrial predators and occur in a wide variety of habitats. In Tasmania *Catadromus lacordairei* is known at only one site, below Macquarie Tier west of Campbell Town, but the species also occurs over parts of southeastern Australia. In Tasmania they live in dry forest and grassy woodland on basaltic clay soils (gilgai). These cracking, 'self-mulching' soils are rare in Tasmania. While little is documented on the species' habitat requirements, this beetle group generally prefers ground cover and a deep litter layer.

Most carabid beetles are carnivorous and the diet of *Catadromus lacordairei* has been reported to be mainly earthworms but may also include small froglets. Like many other carabids, it can spray an odorous defensive secretion from the end of its body if roughly handled.

Key Site

- Only known in Tasmania below Macquarie Tier west of Campbell Town.

Key Threats

- Loss of grassy woodland habitat through clearing for any purpose, e.g. pasture, development, etc.
- Hot and/or frequent fires which destroy the leaf litter and surface soil layer.

Management Recommendations and Other Ways to Help

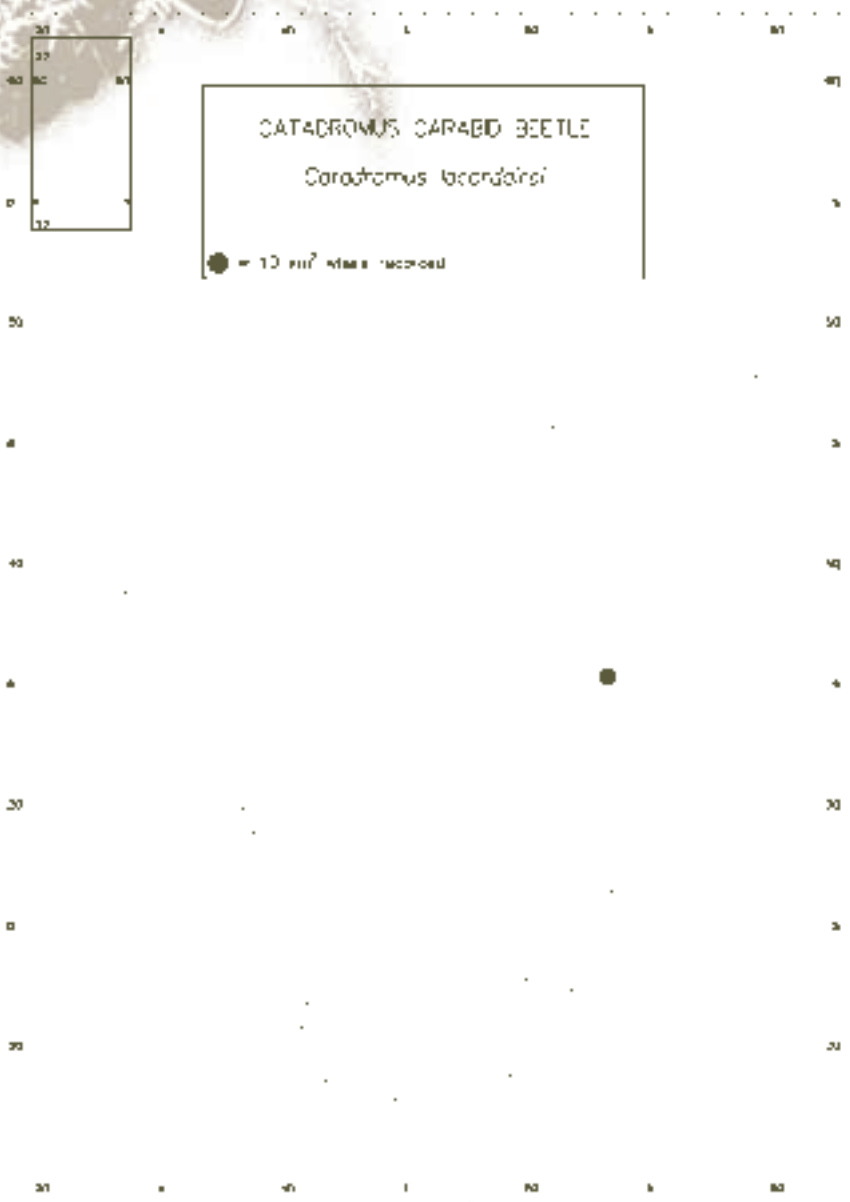
- Retain and rehabilitate areas of native grassy woodland on cracking basaltic clay soils in the Campbell Town area. Cool mosaic burns are preferred which do not penetrate the litter layer. Please contact the Flora Section of Parks and Wildlife for information on how best to protect and rehabilitate this vegetation type.
- More information is needed on this species, particularly surveys to more accurately define its range in Tasmania. Please contact the Threatened Species Unit for a permit.
- The catadromus carabid beetle is protected under the *Threatened Species Protection Act 1995* and it is an offence to collect, possess, display or trade in this species unless under permit. Please report any offences to the Threatened Species Unit.

More Information

Flora Section. Parks and Wildlife Service, GPO Box 44, Hobart Tasmania 7001.
Moore, B. P. (1983). Beetles of South-eastern Australia. Fascicle 5: 69-84. Australian Entomological Press, NSW.
Sloane, T. G. (1920). The Carabidae of Tasmania. Proceedings Linnean Society NSW 45: 113-178.

1: 25 000 TASMAP sheet with known location

Jacobs


CATADROMUS CARABID BEETLE
Catadromus lacordairei

SOUTHEAST STAG BEETLES (2 species)

Broad-toothed stag beetle *Lissotes latidens* (Lucanidae)

Mt Mangana stag beetle *Lissotes menalcas* (Lucanidae)

[Illustrations by Karen Richards]

Status

Broad-toothed stag beetle

Tasmania's *Threatened Species Protection Act 1995* - Endangered
Commonwealth *Endangered Species Protection Act 1992* - not listed

Mt Mangana stag beetle

Tasmania's *Threatened Species Protection Act 1995* - Vulnerable
Commonwealth *Endangered Species Protection Act 1992* - not listed

Description

Both these species of stag beetle are flightless and ground-dwelling. Their bodies are obviously divided into three segments with large elongated, clasping jaws protruding from the head (noticeably and significantly smaller jaws in females). The species have hardened wing shells forming a fused elytron (or abdominal covering). The broad-toothed stag beetle is dull black in colour with a body length 13 to 18 mm. The males have prominent 'bulls horn' shaped jaws.

The Mt Mangana stag beetle is easily identified by its humped or peaked thorax (best viewed by the side profile) and a large hollow on the back of the head. It is readily distinguished from other stag beetles by its black, highly polished or enamelled appearance, which is more extreme in the male than the female. Adults have a body length of 16 to 25 mm. The mouth parts are modified for chewing and the jaws have two teeth (notches), which when closed form a large, oval space.

Distribution, Habitat and Biology

The endemic broad-toothed stag beetle is found in about 34 localities in southeast Tasmania, in the area approximately between Orford and Copping and also on Maria Island. The range of the species is approximately 280 km squared, centred around the Wielangta State Forest, with about half occurring on private land. Recent survey work has targeted likely habitat on the Tasman and Forestier Peninsulas but the species has not been located. Their preferred habitat is wet eucalypt forest dominated by *Eucalyptus obliqua, E. regnans* and *E. globulus* which may occur either as extensive stands of wet forest or as patches in dry eucalypt forest (especially drainage lines and wet gullies) or rainforest.

Until the recent work of J. Meggs little was known of the habitat requirements of the broad-toothed stag beetle. Historically, the species was thought to be log-dwelling but active outside logs for part of the year. However, it is now known that both adults and larvae live in the soil. Decaying logs are still an important part of the beetle's habitat as they provide shelter from desiccation, predation and habitat disturbance such as wildfire. Adults probably live for two to three years.

The Mt Mangana stag beetle has a broad range throughout the southeast of Tasmania, including parts of the Wellington Range, South Bruny Island, and Tasman and Forestier Peninsulas. Most sites are below 650 m altitude. They are found in a variety of wet forest types from mature mixed forest to advanced wet eucalypt regrowth. The most essential habitat element is old large logs on the ground in wet situations. The Mt Mangana beetle is not found throughout areas of suitable habitat but is irregularly distributed in patches.

Adult and larvae Mt Mangana beetles live entirely within rotting logs where the larvae feed on fungi. The species is therefore dependent on a continuing supply of rotting logs on the ground and maintenance of their surrounding moist micro-climate. The species can survive cool bushfire and selective logging provided the decaying log habitat remains intact. The species is known to be relatively long lived at five to six years.

Key Sites

Broad-toothed stag beetle

- Southeastern area between Orford and Copping, including Runnymede and Buckland
- Particularly at Weilangta State Forest and Adams Hill
- Maria Island

Mt Mangana stag beetle

- South Bruny Island
- Mt Wellington Range
- Tasman and Forestier Peninsulas

Key Threats (both species)

- Loss of native forest habitat, especially wet elements through clearing.
- Extensive conversion of native forest to plantation (either eucalypt tree farm or pine plantation).
- Rotation of forestry activities on a cycle of less than 80 years.
- Frequent or hot burns leading to loss of ground litter layer and decaying logs.
- Targeted removal of decaying logs, including firewood collection or heaping for burning.
- Illegal collecting.

Management Recommendations for Commercial Forestry

- Detailed recommendations are provided to Forest Practices Officers under the Forest Practices Code.

Habitat Management

- Maintain large areas of native undisturbed forest, especially linked as corridors or as wildlife habitat clumps. Particularly retain as much undisturbed native vegetation as possible along wet gullies or drainage lines. Favour areas with decaying logs on the ground.
- If clearing is necessary, light selective log only to create a mosaic of cleared and retained native habitat.
- If you manage land containing these species consider some form of long-term protection, e.g. wildlife sanctuary, management agreement, covenant, etc. Contact the Threatened Species Unit, we may be able to help. A number of forest reserves and wildlife priority areas are in place for these species which may be nearby or on the boundary of your property. These could be extended with your help. See Section I for site details.
- Avoid any high-intensity or frequent burning which destroys the leaf litter layer and the quality of decaying logs on the ground. The fire interval for this vegetation type is about 40 years or more, with burns conducted in winter or autumn on a rotational basis and in a mosaic of small patches (1 to 3 ha), leaving burnt and unburnt vegetation. Seek advice from the Parks and Wildlife Service before undertaking any burning.
- Control intensive firewood collection. Decaying logs are the existing and future habitat for these species. They can take 20 to 50 years to decay to a suitable stage for the beetle and other invertebrate fauna.

Vegetation Clearing and Buffers

- Avoid clearing native vegetation from stream side zones or stream banks as these are often good sites for stag beetles.
- If undertaking some clearing, then retain as wide a strip of native vegetation as possible to act as a buffer or corridor to naturally link areas of suitable habitat.
- The width of vegetation buffers depends on the situation. The greater the buffer width, the greater the protection, the more diverse the buffer vegetation, the better the protection. In any case, for small, seasonally dry water channels buffers should be no less than 10 m wide each side, grading up to at least 60 m wide each side for larger stream zones. Two methods for calculating minimum buffer width are: a distance equivalent to the average dominant tree height, or if there are no trees, the amplitude distance between bends.
- Buffers are especially important at points where surface water enters small river channels or landscape depressions, and where flow concentrates.

Other Ways to Help

- When collecting firewood make sure that ample old logs at different stages of decay are left on the forest floor. Never 'clean up' the bush by over-correcting or heaping decaying wood. Rotting is a natural part of the decay process and provides food, refuge and corridors for movement for a host of invertebrates, including stag beetles.
- More information is required on distribution and life history of both species. If you own property within the range of these species or containing likely habitat on the Tasman or Forestier Peninsulas and find stag beetles, please contact the Threatened Species Unit or Forest Practices Board Zoologist to have them identified.
- The broad-toothed stag beetle and Mt Mangana stag beetle are protected under the *Threatened Species Protection Act 1995* and it is an offence to collect, possess, display or trade in these species unless under permit. Please report any offences to the Threatened Species Unit.

More Information

Lea, A. M. (1910). Notes on the genus *Lissotes* with descriptions of new species. Papers Proceedings Royal Society Tasmania 1910: 346-366.

Meggs, J. M. (1996). Distribution and conservation status of two threatened species of lucanid beetle in Tasmania. Unpublished report to Forestry Tasmania and the Australian Heritage Commission.

Meggs, J. (1998). Distribution, Habitat and Conservation Requirements of *Lissotes latidens* (Broad-toothed stag beetle). Report to the Forest Practices Board and Forestry Tasmania.

Meggs, J. M. and Taylor, R. J.(1998). Distribution and conservation status of the Mt. Mangana stag beetle *Lissotes menalcas* (Coleoptera: Lucanidae). Internal Report, Forest Practices Board, Hobart.

Zborowski, P and Storey, R. (1996). A field guide to insects in Australia. Reed Books, Salmon Street, Port Melbourne, Vic, 3207.

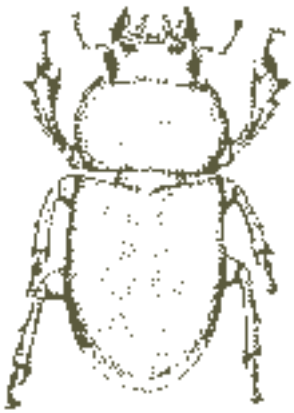
1: 25 000 TASMAP sheets with known sites and potential habitat

Broad-toothed stag beetle

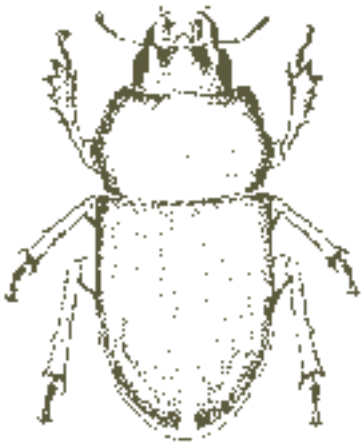
Buckland	Communication	Cremorne	Darlington
Dunalley	Hippolyte	Kellevie	Murdunna
Orford	Port Arthur	Raoul	Runnymede
Sandspit	Taranna	Tasman	

Mt Mangana stag beetle

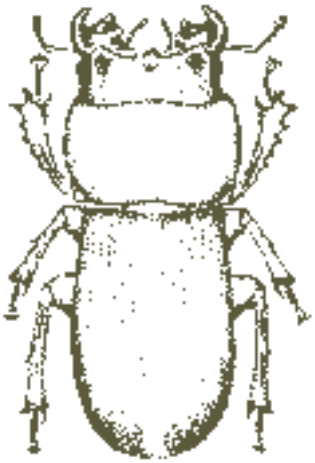
Adventure Bay	Burgess	Collinsvale	Communication
Cygnet	Dover	Fluted Cape	Geeveston
Glen Huon	Hastings	Hippolyte	Huonville
Leprena	Longley	Lonnavale	Lymington
Murdunna	Partridge	Picton	Port Arthur
Raminea	Raoul	Recherche	Taranna
Tasman	Waterloo	Weld	



Broad-toothed Stag Beetle - Female



Mt Mangana Stag Beetle - Female



Broad-toothed Stag Beetle - Male

Mt Mangana Stag Beetle - Male


MT MANGANA STAG BEETLE
BROAD TOOTHED STAG BEETLE
= 10 km² where recorded

NORTHEAST STAG BEETLES (3 species)

Bornemisszas stag beetle *Hoplogonus bornemisszai* (Lucanidae)
Vanderschoors stag beetle *Hoplogonus vanderschoori* (Lucanidae)
Simsons stag beetle *Hoplogonus simsoni* (Lucanidae)

[Illustrations by Karen Richards]

Status

Bornemisszas stag beetle

Tasmania's *Threatened Species Protection Act 1995* - Endangered
Commonwealth *Endangered Species Protection Act 1992* - not listed

Vanderschoors stag beetle

Tasmania's *Threatened Species Protection Act 1995* - Vulnerable
Commonwealth *Endangered Species Protection Act 1992* - not listed

Simsons stag beetle

Tasmania's *Threatened Species Protection Act 1995* - Vulnerable
Commonwealth *Endangered Species Protection Act 1992* - not listed

Description

Large, attractive, hard shelled beetles of body length up to 24 mm. The body is obviously divided into three segments with large elongated, clasping jaws protruding from the head (noticeably and significantly smaller jaws in females). The species are all ground-dwelling and flightless with the hardened wing shells forming a fused elytron (or abdominal covering). The three species are a sheen black colour and distinguished from other all other species of stag beetle by having two obvious pairs of humeral spines. One pair of spines is located at the bottom edge of the thorax directly above the second pair which is located on each corner of the abdominal wing covers. Male Simsons stag beetles have relatively straight jaws with one notch, male Bornemisszas jaws are quite rounded with three notches, and male Vanderschoors jaws have two notches.

Distribution, Habitat and Biology

These species have a very restricted distribution in northeast Tasmania. The range of Simsons stag beetle is centred around Blue Tier in a 'doughnut' shape with a large hole in the middle corresponding to the higher altitudes of Blue Tier. Bornemisszas stag beetle is known at only a few locations approximately 1 km to the east of the range of Simsons. Vanderschoors stag beetle is found to the south of Blue Tier along South George River. There is no overlap in the range of the three species.

The preferred habitat of the three species is tall, relatively undisturbed wet eucalypt forest. They also occur in mixed forest, rainforest, and the zone of change between wet and dry eucalypt forest. This indicates that the beetles probably require a cool, moist micro-climate and a long absence of fire. Optimal habitat is defined as wet eucalypt forest below 300 m, slope less than five degrees, with possibly a flat topography but not in the flood plain of streams. There should be a deep leaf litter layer (probably more than 3 cm), easterly and southerly aspect, well developed forest structure with a well developed canopy and a relatively open understorey. Wet eucalypt forest, mixed forest and rainforest between 300 and 500 m altitude, 5 to 20 degree slope and leaf litter depth of 1 to 3 cm is also suitable habitat.

Little is known about the biology and habitat requirements of Bornemisszas and Vanderschoors stag beetles, but as they are closely related to Simsons they are probably similar. The larval stages of Simsons stag beetles live in the soil and may have a life span of up to two years. Adults are ground-dwelling and free living, wandering among the leaf litter during the night, and sheltering under rocks, logs and other substrates during the day. The adult lifespan is possibly two to three years, making them a relatively long lived beetle.

Key Sites (all species)

- Northeast around Blue Tier, including Weldborough, Pioneer, Terrys Hill, Goulds Country, Pyengana areas

Key Threats (all species)

Loss and disturbance to the soil and litter layer through:

- Conversion of native forest to plantation (eucalypt tree farm or pine plantation)
- Vegetation clearing resulting in soil disturbance and loss of ground layer elements, like litter and logs
- Over burning, particularly moderate to hot burns which destroy the litter layer
- Cultivation of the ground layer, resulting in soil disturbance
- Illegal collecting

Management Recommendations for Commercial Forestry

- Detailed recommendations are provided to Forest Practices Officers under the Forest Practices Code.

Habitat Management

- Maintain large areas of undisturbed native forest, especially linked as corridors or as wildlife habitat clumps. Particularly retain as much undisturbed native vegetation as possible along wet gullies or drainage lines in a minimum 30 m wide strip. Good habitat is wet eucalypt forest, mixed forest and rainforest below about 500 m in altitude, on slopes of less than 20 degrees, and with a deep layer of composting leaf litter.
- If you manage land containing these species consider some form of long-term protection, e.g. wildlife sanctuary, management agreement, covenant, etc. Contact the Threatened Species Unit, we may be able to help. A number of forest reserves and wildlife priority areas are in place for these species which may be nearby or on the boundary of your property. These could be extended with your help. Consult Section I for site details.
- If clearing is being undertaken, light selective logging will retain the forest elements needed to provide wet, moist conditions. Leave a mosaic of untouched areas, especially in wet areas and gullies.
- Avoid any burning, especially high-intensity or frequent burning which destroys the leaf litter layer and the quality of decaying logs on the ground. The natural fire interval for wet eucalypt forest vegetation is 100 years or more. Fire should be avoided in mixed or rainforest vegetation at all times. Seek advice from the Parks and Wildlife Service.
- In areas of wet forest within the species' range, avoid activities which disturb the soil and litter layer. For example, raking and cultivating deep forest soil.
- Control intensive firewood collection. Decaying logs are the existing and future habitat for this species. They can take 20 to 50 years to decay to a suitable stage for beetles and other invertebrate fauna.

Vegetation Clearing and Buffers

- Avoid clearing native vegetation from stream side zones or stream banks as these are often good sites for stag beetles.
- If undertaking some clearing, then retain as wide a strip of native vegetation as possible to act as a buffer or corridor to naturally link areas of suitable habitat.
- The width of vegetation buffers depends on the situation. The greater the buffer width, the greater the protection, the more diverse the buffer vegetation, the better the protection. In any case, for small, seasonally dry water channels buffers should be no less than 10 m wide each side, grading up to at least 60 m wide each side for larger stream zones. Two methods for calculating minimum buffer width are: a distance equivalent to the average dominant tree height, or if there are no trees, the amplitude distance between bends.
- Buffers are especially important at points where surface water enters small river channels or landscape depressions, and where flow concentrates.

Other ways to Help

- When collecting firewood make sure that ample old logs at different stages of decay are left on the forest floor. Never 'clean up' the bush by over-correcting or heaping decaying wood. Rotting is a natural part of the decay process and provides food, refuge and corridors for movement for a host of invertebrates including stag beetles.
- More information is required on distribution. If you live within the range of this species or in likely habitat in the northeast around Blue Tier and find stag beetles on your property, please contact the Threatened Species Unit or Forest Practices Board Zoologist to have them identified.
- These three stag beetles are protected under the *Threatened Species Protection Act 1995* and it is an offence to collect, possess, display or trade in them unless under permit. Please report any offences to the Threatened Species Unit.

More Information

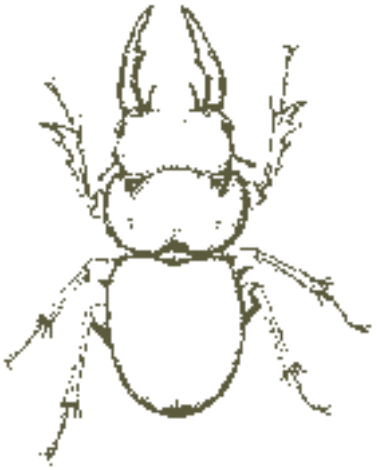
Meggs, J. M. (1996). Distribution and conservation status of two threatened species of lucanid beetle in Tasmania. Tasmania: Report to Forestry Tasmania and the Australian Heritage Commission.

Meggs, J. M. (1997). Simsons stag beetle, *Hoplogonus simsoni*, in north-east Tasmania: Distribution, habitat characteristics and conservation requirements. Report to the Forest Practices Board and Forestry Tasmania. Forest Practices Unit, Launceston.

Richards, K. (1999). Occurrence of *Hoplogonus bornemisszai* (Bornemisszas stag beetle) and *H. vanderschoori* (Vanderschoors stag beetle) in priority coupes, north-east Tasmania. Report to Forestry Tasmania and Forest Practices Board, Tasmania.

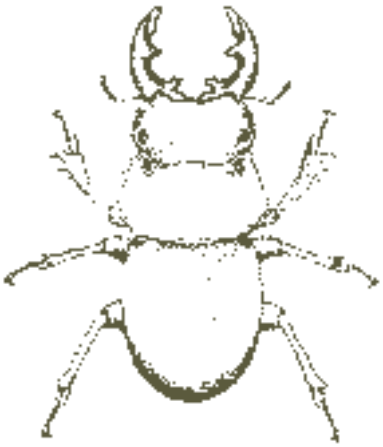
1: 25 000 TASMAP sheets with known sites and potential habitat for the three species

Blue Tier
Derby
Pyengana
Ringarooma
Spurrs Rivulet
Victoria

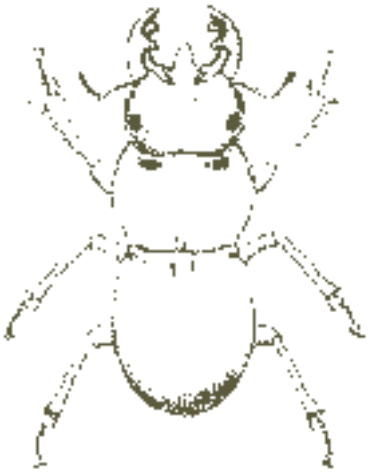


Simpsons - Male

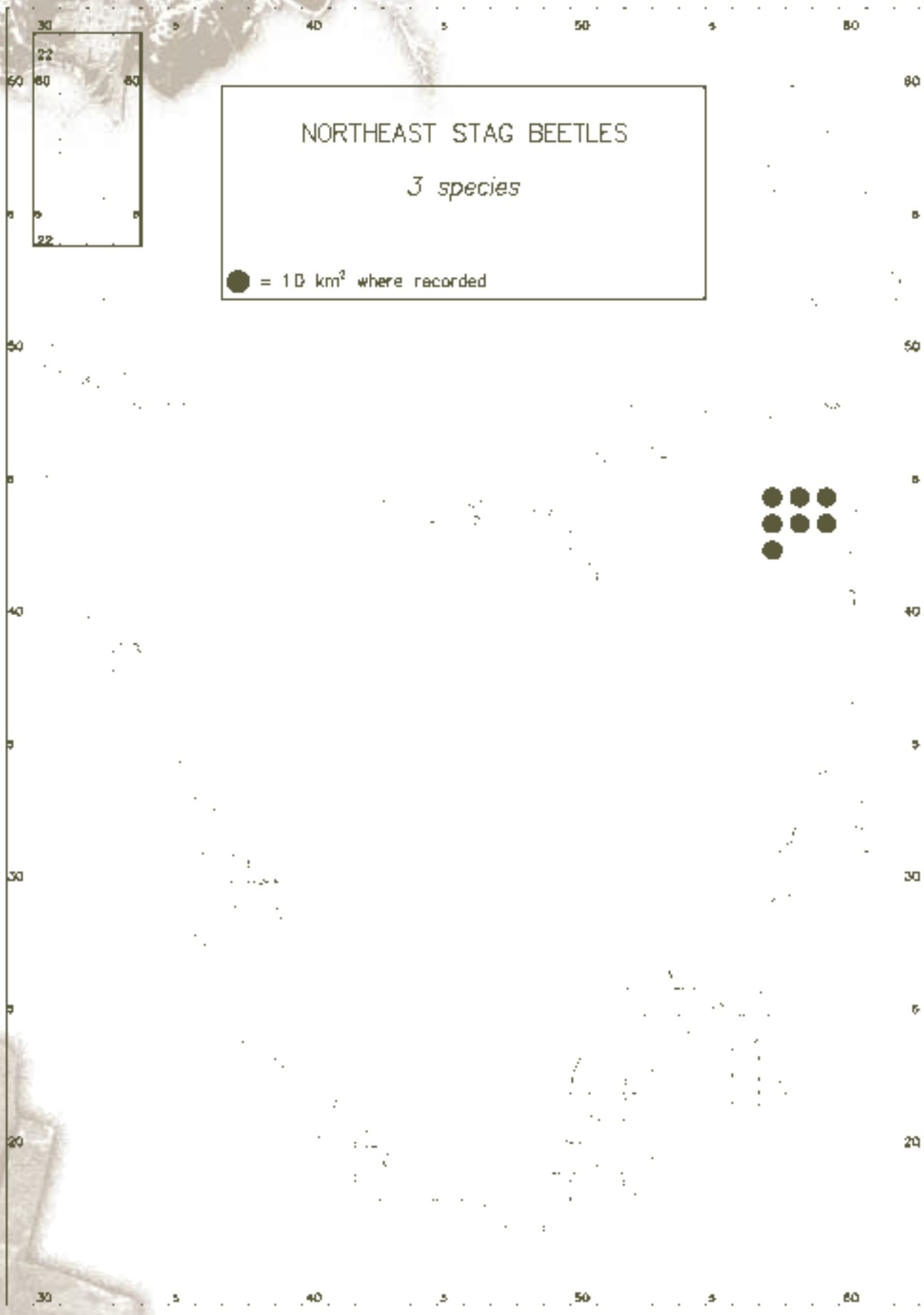
Simpsons - Female



Vanderschoors - Male



Bornemisszas - Male


NORTHEAST STAG BEETLES
3 species
= 10 km² where recorded

BURGUNDY SNAIL

Helicarion rubicundus (Helicarionidae)

[Illustration from Smith and Kershaw 1981]

Status

Tasmania's *Threatened Species Protection Act 1995* - Rare
Commonwealth *Endangered Species Protection Act 1992* - not listed

Description

A land snail with a small, thin, transparent and fragile shell with 3 to 3.5 whorls. The shell is glossy, greenish yellow in colour, and measures 16 to 22 mm in width. The shell is flattened and the snail's body can be only partly withdrawn into the shell. The body colour is grey with bright red (burgundy) and green patterns. The mucus colour is red, a trait which distinguishes the species from the similar *Helicarion cuvieri*. They are very active and possess mantle flaps or lappets which overlay the shell when the animal is crawling. The foot is blunt posteriorly and deep purple in colour.

Distribution, Habitat and Biology

This large diverse family of snails with thin shells ranges from Africa throughout South East Asia to Australia and the Pacific. The two Tasmanian species are termed 'semi slugs', having reduced, very fragile shells with very wide apertures. Burgundy snails are naturally restricted and occur specifically in wet eucalypt forest on the Tasman and Forestier Peninsulas. They are widespread within wet forests on the Forestier Peninsula but seem to be much rarer on the Tasman Peninsula. Burgundy snails have been found in a variety of wet forest ages, including 20 year old regrowth, previously cut-over forest and old growth. They occur in many situations throughout the forest, such as close to creek lines, on slopes and on flatter ridge tops. The species is most active at night. During the day it shelters in a variety of places such as under rocks and fallen trees, in the litter accumulated at the bases of trees and sedges, and in rolled eucalypt bark.

Key Sites

- Only known in wet eucalypt forests on the Forestier and Tasman Peninsulas.

Key Threats

- Destruction of native habitat by clearing for forestry, agriculture or any other purpose.
- Conversion of native forest to plantation (eucalypt tree farm or pine).
- Fire, especially hot, uncontrolled fire which destroys all elements of the vegetation layers.

Management Recommendations for Commercial Forestry

- Detailed recommendations are provided to Forest Practices Officers under the Forest Practices Code.

Habitat Management

- Maintain large areas of undisturbed native forest, particularly linked as corridors or as wildlife habitat clumps. Especially retain as much undisturbed native vegetation as possible in a variety of situations, e.g. gullies, ridge tops, etc.
- If you own land containing this species consider some form of long-term protection, e.g. wildlife sanctuary, management agreement, covenant, etc. Contact the Threatened Species Unit, we may be able to help. Several special forestry zones are in place for this species which may be nearby or on the boundary of your property. These could be extended with your help. Consult Section I for site details.
- If clearing is being undertaken, light selective logging will retain the forest elements needed to provide wet, moist conditions. Leave a mosaic of untouched areas, especially in wetter areas and gullies.
- Avoid any burning, especially high-intensity or frequent burning, which destroys all elements of the vegetation layer. The natural fire interval for wet eucalypt forest vegetation is 100 years or more so no active burning is required. Seek advice from the Flora Section, Parks and Wildlife Service for management advice.

Vegetation Clearing and Buffers

- Avoid clearing native vegetation from stream side zones or stream banks as these are often good sites for snails.
- If undertaking some clearing, then retain as wide a strip of native vegetation as possible to act as a buffer or corridor to naturally link areas of suitable habitat.

- The width of vegetation buffers depends on the situation. The greater the buffer width, the greater the protection, the more diverse the buffer vegetation, the better the protection. In any case, for small, seasonally dry water channels buffers should be no less than 10 m wide each side, grading up to at least 60 m wide each side for larger stream zones. Two methods for calculating minimum buffer width are: a distance equivalent to the average dominant tree height, or if there are no trees, the amplitude distance between bends.

Other ways to Help

- More information is required on distribution. If you live within the range of this species or in likely habitat on the Tasman or Forestier Peninsulas and find unusual snails on your property, please contact the Threatened Species Unit or the Forest Practices Board Zoologist to have them identified.

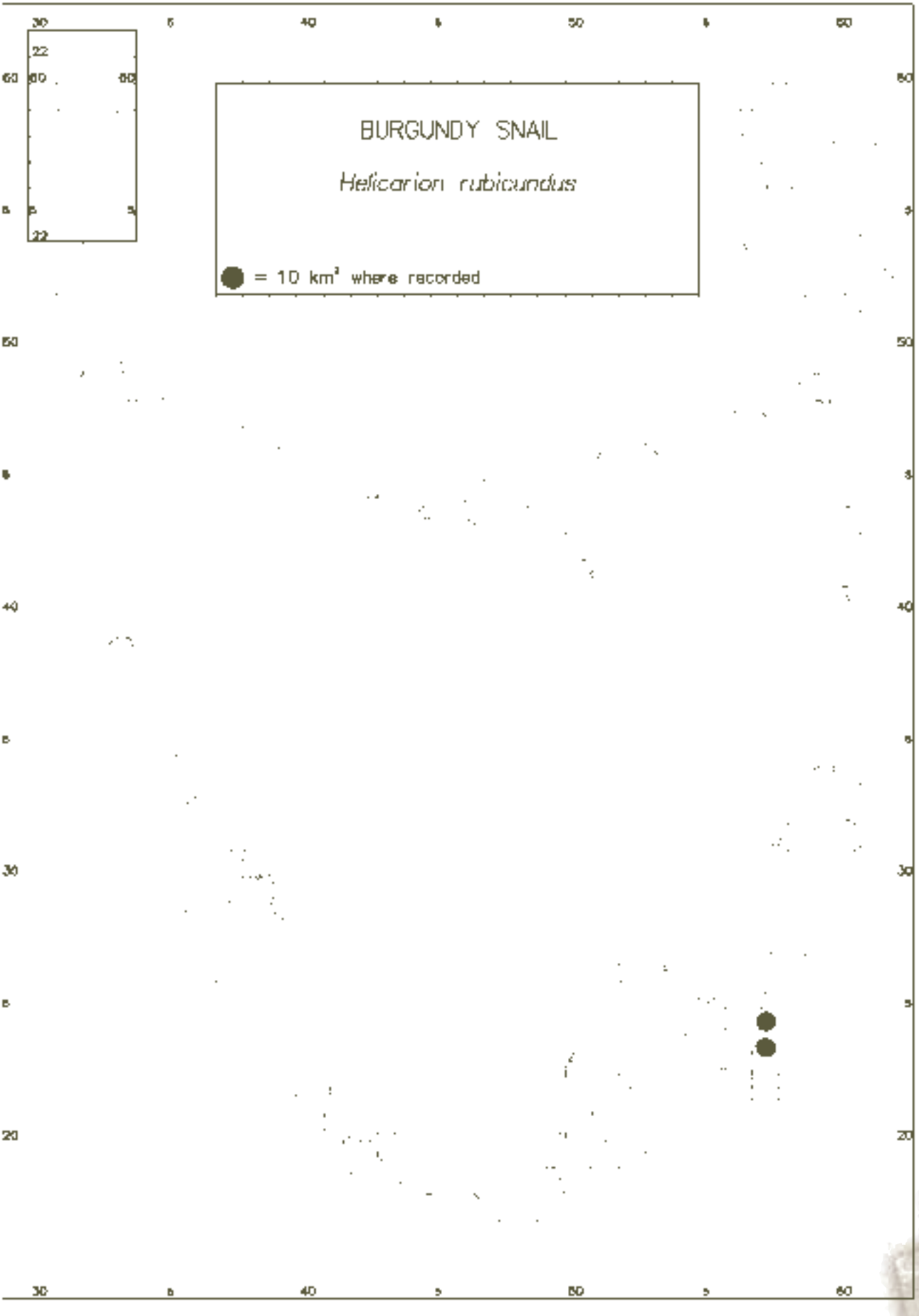
More Information

Bonham, K. J. (1998). Reassessment of the status of Tasmanian native land snails. Report to the Threatened Species Unit, Parks and Wildlife Service, Tasmania.

Taylor, R. J. (1991). Distribution and habitat of *Helicarion rubicundus* (Pulmonata: Helicarionidae), a rare land snail. Papers and Proceedings Royal Society Tasmania 125: 27-28.

1:25 000 TASMAP sheets with known sites and potential habitat

Hippolyte Murdunna Port Arthur Raoul
Taranna


BURGUNDY SNAIL
Helicarion rubicundus
= 10 km² where recorded

KEELED SNAIL

Tasmaphena lamproides (Rhytididae)

[Illustration from Smith and Kershaw 1981]

Status

Tasmania's *Threatened Species Protection Act 1995* - Rare
Commonwealth *Endangered Species Protection Act 1992* - not listed

Description

A land snail with a heavy shell which is a dark yellow to chestnut colour and flattened with 4 to 4.5 whorls. Adults have a shell width of 16 to 29 mm across. The whorls are low-spired and have a bluntly angular lateral edge, hence the common name 'keeled snail'. Specimens collected from Three Hummock Island are smaller in average width (c. 17 mm) and a darker red colour.

Distribution, Habitat and Biology

This snail occurs in deep damp litter in forest in northwest Tasmania, on Three Hummock Island, and on Wilsons Promontory in southern Victoria. Its stronghold in Tasmania is in areas north and west of Christmas Hills. At present the known extent of occurrence of this species is estimated to be about 1 200 sq km, extending in an area of approximately 80 by 40 km. The species lives in a wide range of wet, mixed and old growth forest habitats of 50 years or older, including older regenerated areas. Blackwood swamps and wet eucalypt forest containing fallen logs, rock piles, thick scrub and understorey for shelter and varying topography appear most suitable. The Togari forest block (northwest of Smithton) represents prime habitat. Populations appear to be most strongly correlated with forest having a healthy, deep litter layer. They prefer to shelter under logs and stones, and in deep litter. As the species is relatively large and has considerable demands for food resources, populations never reach high densities. K. Bonham estimates that the keeled snail occurs at a density of around seven individuals per ha. It is a particularly cryptic and naturally rare species yet it is reasonably tolerant to a wide range of environmental conditions.

The species is carnivorous and its diet includes worms, snails and a range of other small invertebrates found in the litter layer.

Key Sites

- Wet forests in areas north and west of Smithton, especially Christmas Hills, including the Togari Forest Block
- South and North Hummock on Three Hummock Island

Key Threats

- Loss and fragmentation of native forest habitat due to clearing.
- Conversion of native forest to plantation (eucalypt tree farm and pine).
- Hot and frequent fires which destroy the litter layer and ground elements needed for shelter.

Management Recommendations for Commercial Forestry

- Detailed recommendations are provided to Forest Practices Officers under the Forest Practices Code.

Habitat Management and Other Ways to Help

- On Three Hummock Island areas of wet sclerophyll forest with dogwood *(Pomaderris)*, musk *(Olearia argophylla)* or manferns *(Dicksonia)* in the understorey should be protected from fire. This vegetation type should not be burnt more than every 60 years. Any burning should be conducted during winter or autumn as a cool burn in a mosaic of 1 to 2 ha of burnt and unburnt patches.
- Wet forest in other areas within the species range in the northwest should be protected from fire, especially hot fires that destroy the litter layer. Gullies and areas where litter layers are deepest are the most important habitat for the species.
- Any clearing and conversion of native vegetation to plantation will destroy the species therefore please consider light selective logging only. Retain large areas of native vegetation as corridors throughout the landscape, linking neighbouring properties where possible. It is important to ensure wide buffers of native vegetation are maintained along stream sides zones as these are often the most fertile areas for litter decomposition.
- More information is needed on this species, especially its distribution and life history. If you manage property in this northwestern region, please learn the special features of the keeled snail and contact the Threatened Species Unit if you locate any populations or need help with identification.

More Information

Bonham, K (1997). Native land snails of King Island and the Hunter Group. The Tasmanian Naturalist 119: 10-22.

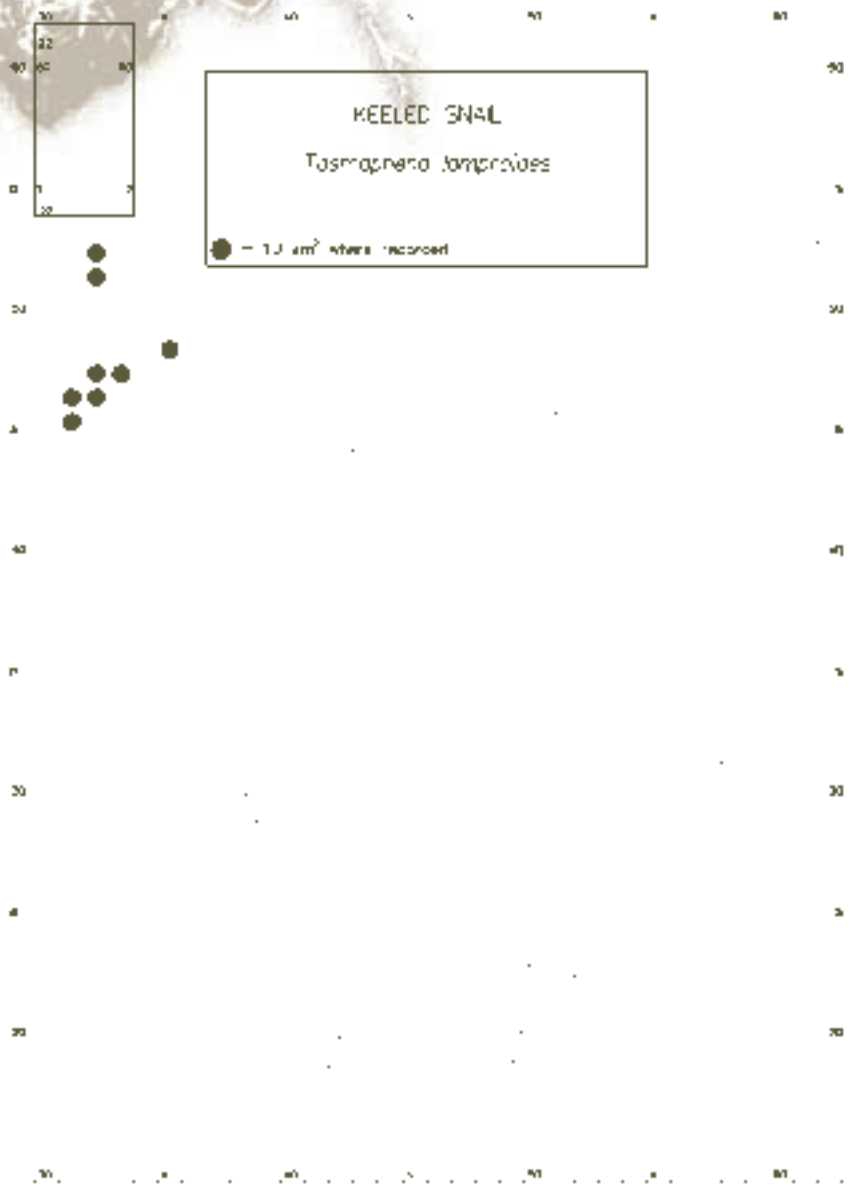
Bonham, K. and Taylor, R. J. (1997). Distribution and habitat of the land snail *Tasmaphena lamproides* (Pulmonata: Rhytididae) in Tasmania. Molluscan Research 18: 1-10.

Bonham, K. J. (1998). Reassessment of the status of Tasmanian native land snails. Report to the Threatened Species Unit, Parks and Wildlife Service, Tasmania.

Smith, B. J. and Kershaw, R. C. (1981). Tasmanian land and freshwater molluscs. Fauna of Tasmanian Handbook No. 5. Department of Zoology, University of Tasmania, GPO Box 252C, Hobart, Tasmania, 7001.

1:25 000 TASMAP sheets with known sites and potential habitat

Adamson	Bluff	Cameron	Cuvier
Keraudren	Lileah	Marrawah	Mella
Montagu	Rochon	Roger	Smithton
Stanley	Studland	Sumac	Sundown
Tayatea	Togari		


KEELED SNAIL
Tasmaphena lamproides

MT WELLINGTON SNAIL

Roblinella agnewi (Charopidae)

[Illustration from Smith and Kershaw 1979]

Status

Tasmania's *Threatened Species Protection Act 1995* - Rare
Commonwealth *Endangered Species Protection Act 1992* - not listed

Description

A small land snail with a shell 3 to 5 mm wide, usually light brown in colour. The spire is raised. The species is distinguished from some similar-shaped species of the genus *Pernagera* by its extremely fine silk-like sculpture. The pattern of riblets is similar to that in the genus *Planilaoma* (irregular and swept backwards from the shell whorls). Thus this species can be easily confused with other small species of the same family and all records should be verified by a specialist. The animal itself has not been closely observed.

Distribution, Habitat and Biology

As far as is known, this species occurs only on the eastern face of Mt Wellington, within the Mt Wellington Range Protected Area near Hobart. Persistent surveys further abroad, including in similar habitats at Mount Dromedary and in parts of the western Wellington Range, have failed to locate it. (A recent observation in December 1998 by K. Bonham suspected the species to be in a small fern gully in burnt, logged and relatively dry woodland at Victory Creek near Ben Lomond Rivulet, southwest of Stacks Bluff. This observation requires confirmation as the site is significantly different in habitat and range from known occurrences).

The species is found in extremely low numbers and appears to be restricted to areas between 600 to 1000 m altitude; the actual extent of the species entire range probably being less than 10 sq km. Historically, the Mt Wellington snail was also found on the lower slopes of the mountain but it is believed to have disappeared from these habitats as a result of either fire or habitat degradation, e.g. blackberries and other weed invasion.

The habitat of the Mt Wellington snail is mainly subalpine wet eucalypt forest where they live in leaf litter and under rocks. They are herbivorous and prefer to feed on the rare local tree daisy *Brachyglottis brunonis*.

Key Sites

All sites are on Mt Wellington

- Milles Track
- Organ Pipes Track
- Upper Lenah Valley Track

Key Threats

- Hot fires which destroy the litter layer.
- Lack of information on distribution and life history needed for management.

Habitat Management and Other Ways to Help

- Take care with fire when walking and camping in the Mt Wellington Range. High altitude and alpine habitats never recover from fire. Be sure to completely extinguish all fires, even if surrounded by wet vegetation. Wherever possible use a fuel stove only.
- Become familiar with the species and its identification as little is known of its life history. Target your walks in the Mt Wellington Range to the higher alpine areas above 600 m and take note of any snails you observe. Do not collect live specimens. Contact the Threatened Species Unit if help is needed with identification.

More Information

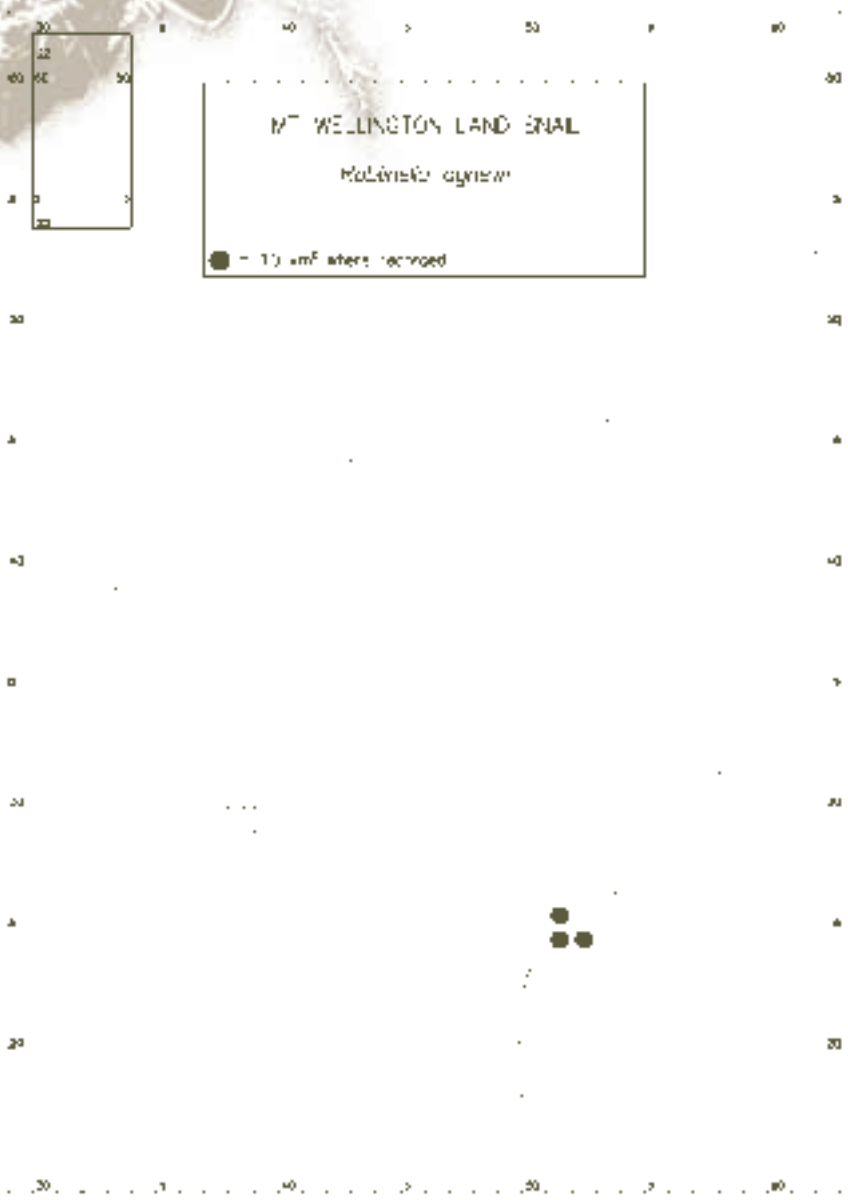
Bonham, K. J. (1998). Reassessment of the status of Tasmanian native land snails. Report to the Threatened Species Unit, Parks and Wildlife Service, Tasmania.

Smith, B. J. and Kershaw, R. C. (1979). Field guide to the non-marine molluscs of south eastern Australia. Australian National Uni. Press, Canberra.

Smith, B. J. and Kershaw, R. C. (1981). Tasmanian Land and Freshwater Molluscs. Fauna of Tasmania Handbook No. 5. University of Tasmania, Hobart.

1: 25 000 TASMAP sheets with known sites and potential habitat

Collinsvale, Longley


MT WELLINGTON LAND SNAIL

NORTHEAST FOREST SNAIL (Granulated snail)

Anoglypta launcestonensis (Caryodidae)

[Illustration from Smith and Kershaw 1981]

Status

Tasmania's *Threatened Species Protection Act 1995* - status under review
Commonwealth *Endangered Species Protection Act 1992* - not listed

Description

A large, attractive land snail with adult shells measuring 25 to 35 mm in width. Some variation in shell colour and patterning occurs across the species' range. Shells are typically characterised by their granulated sculpturing, conical shape, outer keel, and chocolate-brown base with a bright yellow band. Colour can vary from yellow to brown to a bronze colour. Five to eight obvious ridges of sculpture are usually present. Adults are identified by having over 5.4 whorls (i.e. the number of full spirals through which the shell has grown), sub-adults have 4.2 to 5.3 whorls with juveniles having less than 4 and being obviously smaller in size. The yellow band on the base of the shell averages 2 to 3 mm in width.

Distribution, Habitat and Biology

The northeast forest snail (also called the granulated snail) belongs to the family Caryodidae which includes the large mainland snails found mainly on the Great Dividing Range. Species in this family are typically large and characterised by a peculiar gland of unknown function and sculptured shells with banded patterning. Eggs are rarely seen but they are large and described as resembling small birds' eggs. The juveniles live under leaf litter and are miniature replicas of the adult. Specimens may be found individually or clustered together to form 'colonies' and may be very long lived (up to ten years). The species is naturally rare with low population levels.

The northeast forest snail is endemic to northeastern Tasmania. It is found in rainforest, mixed forest and wet sclerophyll forest that has rainforest elements, in areas where the annual rainfall is about 1400 mm. It especially prefers rainforest areas where the ground is well shaded by dense overhanging canopies and typically covered with ferns, low shrubs, decaying logs and litter. It appears less common on steep slopes and is probably rare or absent in sub-alpine areas. The species' range extends from Mt Arthur to the west and Goshen to the east, Roses Tier to the south and Mt Horror to the north. The area of occupancy according to K. Bonham is about 41 000 ha inside a 75 by 45 km rectangle, including about 13 reserves of various types. These parameters would suggest the species' survival and conservation is not threatened.

Little information is available but it is likely the species would be eliminated by clearfelling and associated hot regeneration burns, or by plantation establishment through removal of rotting logs and ground litter. It may take at least 90 years following clearfelling and burning for the species to fully recover in an area. Public concerns have been raised that a significant portion of this species' range is subject to commercial logging, particularly plantation, which will ultimately reduce the species' distribution and quality of habitat leading to a more threatened status.

Key Sites

- The area around Mt Michael-Little Mt Michael in the Blue Tier Reserve.
- Rainforest vegetation west of Gunns Road adjacent to the old Roses Tier settlement near Ikes Creek.

Key Threats

- Extensive clearfelling of native rainforest habitat.
- Replacement of native forest with plantation (either eucalypt tree farm or pine plantation).
- Frequent firing of wet or mixed forest and any fire in rainforest, as this destroys the litter and log element.

Management Recommendations for Commercial Forestry

- Detailed recommendations are provided to Forest Practices Officers under the Forest Practices Code.

Habitat Management and Other Ways to Help

- If you own land containing the northeast forest snail consider some form of long-term protection, e.g. wildlife sanctuary, management agreement, covenant, etc. Contact the Threatened Species Unit, we may be able to help.

- Retain wet forest where possible. If such habitat must be cleared, retain undisturbed patches and connecting strips of forest.
- Protect wet forest habitat from fire as fire destroys the leaf litter and rotting log habitats required by the northeast snail.
- More information is need on the life history and requirements of this species, particularly diet, northern and southern range extremity, life span and litter composition. Become familiar with identifying the species and help with surveying or monitoring movement and seasonal changes.

More Information

Bonham, K. (1996). Distribution, habitat and conservation status of the Tasmanian endemic land snail *Anoglypta launcestonen*sis (Reeve, 1853). A report to Forestry Tasmania, Melville Street, Hobart.

Bonham, K. (1996). Two new varieties of the Tasmanian caryodid snail *Anoglypta launcestonensis*. The Tasmanian Naturalist 118: 42-50.

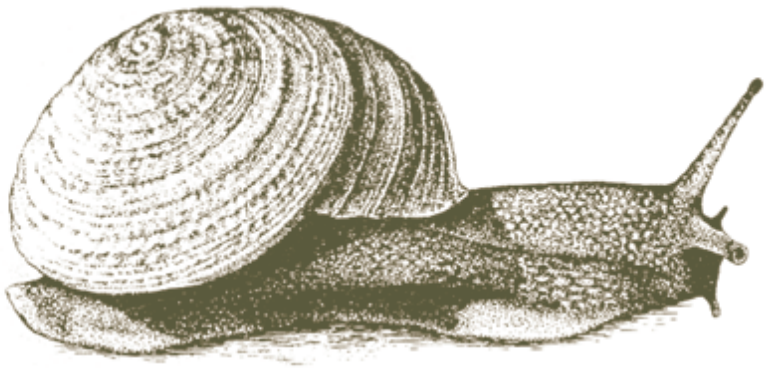
Bonham, K. J. (1998). Reassessment of the status of Tasmanian native land snails. Report to the Threatened Species Unit, Parks and Wildlife Service, Tasmania.

Kershaw, R. C. (1989). The Tasmanian granulated snail. Australian Natural History 23 (2): p168.

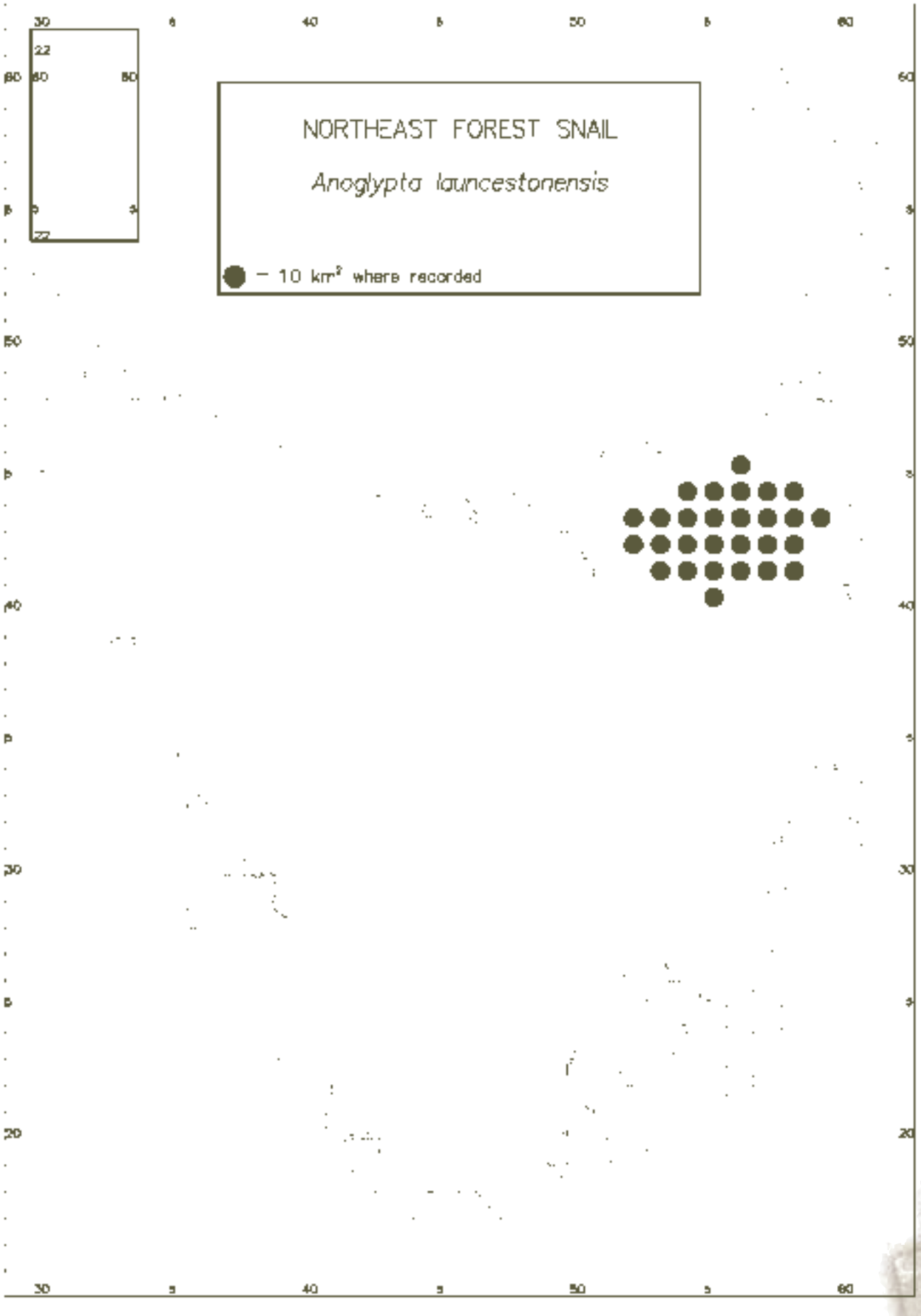
Smith, B. J. and Kershaw, R. C. (1981). Tasmanian land and freshwater molluscs. Fauna of Tasmanian Handbook No. 5. Department of Zoology, University of Tasmania, GPO Box 252C, Hobart, Tasmania, 7001.

1:25 000 TASMAP sheets with known sites and potential habitat

Ben Nevis	Blue Tier	Brilliant	Derby
Giblin	Lisle	Maurice	Nunamara
Patersonia	Pearly Brook	Pioneer	Pyengana
Ringarooma	Saddleback	Scottsdale	Springfield
Spurrs Rivulet	Victoria		



NORTHEAST FOREST SNAIL



JUNGERMANS SNAIL

Pasmaditta jungermanniae (Punctidae)

[Illustration from Smith and Kershaw 1981]

Status

Tasmania's *Threatened Species Protection Act 1995* - Rare
Commonwealth *Endangered Species Protection Act 1992* - not listed

Description

A small (2.5 to 3 mm) punctid land snail with 4 to 5 whorls in the shell. The shell has a sculpture of very low, close riblets with faint spiral striae between. The shell appears slightly frosty and is a bronze colour.

Distribution, Habitat and Biology

The Punctidae family of land snails occurs world wide and comprises typically small to minute snails with glassy to frosted shells. Seven species have been recorded in Tasmania and most appear to favour fairly dry conditions, living in litter, under stones and other ground cover. Jungermans snail is endemic to Tasmania and was first described by Petterd in 1879. It is only known in the Launceston area, namely the Cataract Gorge and a few locations close by. There has been some recent debate concerning the validity of the taxon with claims it is a variation of a much more common and widely occurring charopid snail, *Planiloma luckmanii*. This clarification is still under debate.

Petterd obtained Jungermans snail in thick entangled masses of moss that formed a thick carpet on the rocks just above the water line. He reported that the species nestled in masses of moss overgrowing trees, branches and rocks and was in great profusion among mosses on the rocks around the First Basin. A faunal survey of the Cataract Gorge in 1995 (Taylor et al. 1997) reported that the species had been collected from its type locality in 1983 by Kershaw and that its micro-habitat had been moss on rock faces.

Key Sites

- Only known in the Launceston area at Cataract Gorge and nearby locations

Key Threats

- Not well documented but suspected to be a loss of wetter habitats in the Cataract Gorge, leading to a reduction in moss habitat and jungle-like cover.
- Possibly also clearing of ground cover through burning, excavation, digging, raking, etc.
- Lack of information on taxonomic status of the group and its relationship with *Planilaoma luckmanii*.

Habitat Management and Other Ways to Help

- More information is needed on distribution, life history and requirements of Jungermans snail. Become familiar with identifying Juggermans snail and report any new information to the Threatened Species Unit.
- Taxonomic information on the snail family Punctidae is limited and requires review. All efforts to improve taxonomy should be supported.

More Information

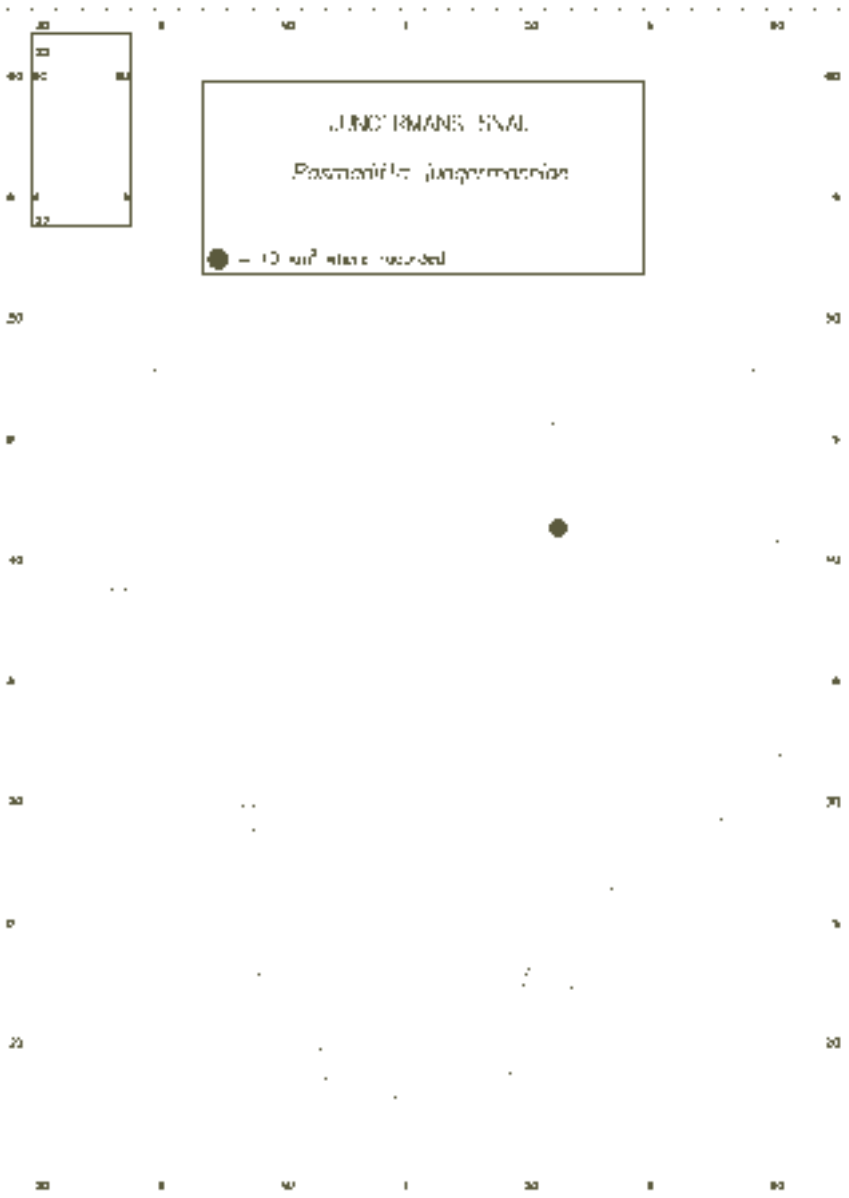
Petterd, W. F. (1879). A monograph of the land snails of Tasmania. (Privately Published), Launceston.

Smith, B. J. and Kershaw, R. C. (1981). Tasmanian land and freshwater molluscs. Fauna of Tasmanian Handbook No. 5. Department of Zoology, University of Tasmania, GPO Box 252C, Hobart, Tasmania, 7001.

Taylor, R., Mesibov, R., Brereton, R. and Bonham, K. (1997). Terrestrial fauna of Cataract Gorge Reserve, Launceston. The Tasmanian Naturalist 119: 46-58.

1:25 000 TASMAP sheets with known sites and potential habitat

Exeter, Launceston


JUNGERMANNIALES
Pseudolophozia jungermannioides
= 10 km² where recorded

SOUTHERN HAIRY RED SNAIL

Austrochloritis victoriae (Camaenidae)

[Illustration from Smith and Kershaw 1981]

Status

Tasmania's *Threatened Species Protection Act 1995* - Rare (previously listed as extinct)
Commonwealth *Endangered Species Protection Act 1992* - not listed

Description

A land snail with a semi-rounded, thin, dark reddish-brown shell which measures 12 to 22 mm across. The surface of the shell is covered with fine hair-like points visible under the microscope, which give a velvety appearance. The body is grey and stocky with a short neck. Dead shells are often pale yellow or white. There may be some colour and morphological differences between Victorian and Tasmanian populations, with Tasmanian snails being more yellow than reddish and slightly flatter-spired. The species was previously named as *Chloritobadistes victoriae*.

Distribution, Habitat and Biology

The southern hairy red snail is known only on the northeastern coast of King Island and in southern Victoria, south of the Great Dividing Range and including Wilsons Promontory. In Tasmania the type locality for this species was The Springs, at Cape Wickham on King Island where it was first recorded in 1887 in moist tea tree scrub. The species had not been collected there or elsewhere on King Island since the 1920s until 1996 when K. Bonham rediscovered populations around Pennys Lagoon. A further population was found by Bonham in 1998 near the junction of Fraser River and Raffertys Creek at Naracoopa. Potentially, the species could occur in areas of undisturbed habitat from The Springs across to Pennys Lagoon and down the coast to Naracoopa, extending more than 5 to 7 km from the coast.

The southern hairy red snail lives in damp areas with well-developed paperbark, tea tree and banksia scrub, and in wet eucalypt forests. They occur in discrete colonies or clusters sheltering among fallen logs (e.g. banksia) and piles of twigs. The species is herbivorous and probably feeds on rotting wood and leaf litter. One observation has confirmed a live adult with a clutch of 56 eggs. Little else is known.

Key Sites

Found in the northeast and east of King Island at:

- Pennys Lagoon
- Lake Martha Lavinia
- Junction of Fraser River and Raffertys Creek at Naracoopa

Key Threat

- Loss of habitat, through clearing or intense, frequent burning of native coastal vegetation.

Habitat Management and Other Ways to Help

- Scrub and forest areas within Lavinia State Reserve should be protected from frequent or high intensity fires.
- Retain areas of native vegetation within 5 km of the coast between Lavinia State Reserve and Naracoopa and protect such areas from fire and other impacts such as cattle grazing.
- More information is required on the distribution and life history of this snail. Become familiar with its identifying features and report any new locations to the Threatened Species Unit.

More Information

Bonham, K. J. (1996). Comments on the status of *Austrochloritis victoriae*. Report to the Threatened Species Unit, Parks and Wildlife Service, Tasmania.

Bonham, K. J. (1997). Native land snails of King Island and the Hunter Group. The Tasmanian Naturalist 119: 10-22.

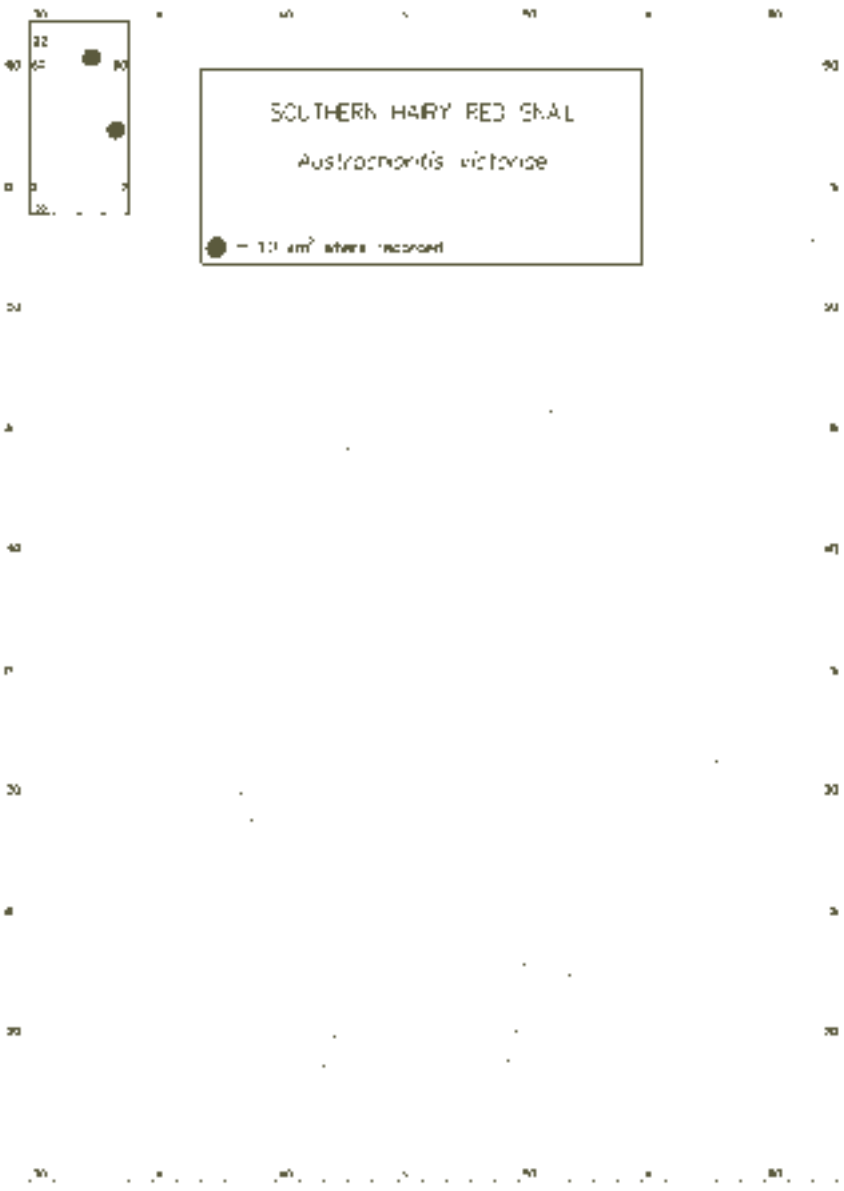
Bonham, K. J. (1998). Reassessment of the status of Tasmanian native land snails. Report to the Threatened Species Unit, Parks and Wildlife Service, Tasmania.

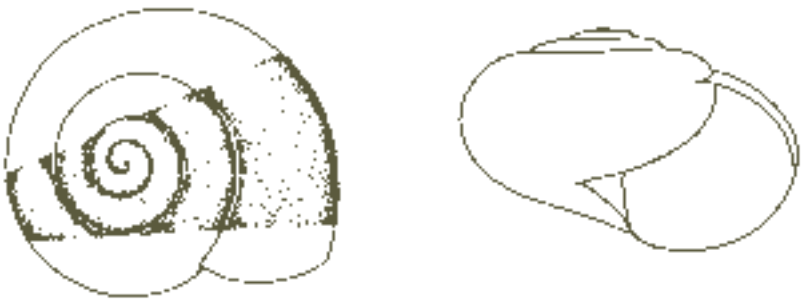
Smith, B. J. and Kershaw, R. C. (1981). Tasmanian land and freshwater molluscs. Fauna of Tasmanian Handbook No. 5. Department of Zoology, University of Tasmania, GPO Box 252C, Hobart, Tasmania, 7001.

1:25 000 TASMAP sheets with known sites and potential habitat

Egg Lagoon | Naracoopa | Saltwater | Sea Elephant

SOUTHERN HAIRY RED SNAIL





STANLEY SNAIL

Miselaoma weldii (Punctidae)

[Illustration from Smith and Kershaw 1981]

Status

Tasmania's *Threatened Species Protection Act 1995* - Vulnerable
Commonwealth *Endangered Species Protection Act 1992* - not listed

Description

The family Punctidae is a widespread family in Australia and elsewhere, consisting of small to minute snails which generally have shiny, tightly coiled, and irregularly sculptured shells. *Miselaoma weldii* is immediately distinguishable by its sinistral (reversed) shell, which has its aperture on the opposite side to most land snails. Adult shells are up to 1.8 mm wide and 1.3 mm high, with a raised ('turbinately discoid') spire of 5.5 to 6.5 whorls. The umbilicus is very narrow. The shell is pale yellowish brown to greenish-brown, and translucent in living specimens or dead shells in good condition. The shell is shiny and relatively smooth with close small longitudinal striations. The animal is usually black or very dark slatey grey on top, and paler underneath. In live specimens, the animal is clearly visible through the base of the shell.

Distribution, Habitat and Biology

Within Tasmania, the Stanley snail *Miselaoma weldii* appears to be restricted to The Nut at Stanley. The snail is believed to have reached Tasmania from southern Victoria and is unlikely to have occurred more widely in northwestern Tasmania. The Nut is a distinctive steep basalt hill, 147 m asl and about 100 ha in area. Of this, much has been cleared or otherwise degraded, and the snail is estimated to now only inhabit about 4 ha.

The Stanley snail occurs in three apparently discrete populations on The Nut. The largest, occupying about 3.5 ha, covers a continuous range of coastal shrubbery, woodland and dry scrub communities extending from the easternmost point of The Nut around for about 500 m to the northwest, and up from the coast to an altitude of about 120 m. The two smaller colonies are in gullies containing dogwood. One, of about 0.3 ha, extends from near the telecommunications hut on the west of The Nut down to a large patch of green ivy visible from the township. The other is a small patch of dogwood perched above the Stanley quarry and is estimated to cover about 0.2 ha.

Early paintings of The Nut suggest that many of the Stanley snail's previous sites were cleared for sheep grazing. It is suspected that sheep either overgrazed these areas (which have subsequently re-grown) or degraded and over-disturbed the leaf litter (a process which may be continuing) and therefore eliminated the species from much of its original area.

On the basis of Bonham's surveys, it is extremely unlikely that the Stanley snail occurs anywhere on the Circular Head peninsula other than The Nut. Habitats away from The Nut (between Rocky Cape and Smithton) were either too degraded for native snails, or they comprise assemblages of only extremely hardy 'coastal snail' species. Habitats surveyed along Tatnells Beach and Godfreys Beach appeared suitable for the species if it could tolerate substrates other than the basalt of The Nut. This absence suggests the species may not be capable of occupying generic coastal environments, and that accidental dispersal to a distant suitable site is required for it to become established - something which is unlikely given the species' small population.

On The Nut, the Stanley snail occurs in a wide range of vegetation types, including dogwood scrub, coastal shrubbery, dry open tea tree scrub, blackwood scrub, and low *Eucalyptus viminalis* woodland, this latter vegetation type appearing to be the most productive habitat. It is capable of tolerating some degree of weed intrusion, having been found alive in one very large ivy plant, and being capable of surviving where gorse is a major component of the leaf litter. It is absent from sites where weed intrusion is extensive, and also from some sites on the southern part of The Nut where weeds are scarcer but sheep disturbance may have played a role in the past.

Little is known of the life cycle of the species as very few juvenile specimens have ever been seen. K. Bonham suggests that the species grows to maturity rapidly and then remains in the adult phase for perhaps a year or two. Juvenile mortality appears extremely low for such a small snail. Diet appears to consist of small particles of detritus, including fallen leaves which settle in fine dirt and composting leaf litter, especially where this accumulates between shrubbery and rocks. The species does not occur in open rocky areas, which suggests that it has a moisture or cooling requirement and needs to be well covered by vegetative (not necessarily native) or deep rockpiles. Individuals are gregarious and cluster together or share the same niche with slightly larger snails, e.g. *Pernagera officeri*, and therefore have access to an excellent supply of calcium which is needed for the shell.

Prolesophanta dyeri has been identified as a predator upon this species, but it is extremely rare in the Stanley snail's habitat. Other predators might include centipedes and spiders. As the Stanley snail is small, semi-gregarious and with limited dispersal mechanisms it is probably unable to rapidly re-populate an area once it has been exterminated.

Key Site

- Only known from The Nut, Stanley.

Key Threats

- Habitat degradation and loss due to continuing weed invasion (especially gorse and boxthorn).
- Fire anywhere throughout the species' range.
- Clearing of any native vegetation, including by stock grazing.
- Disturbance to rock piles or cliff face which provide shelter.

Habitat Management and Other Ways to Help

- Sites where the species is known to occur should not be cleared or subjected to increased fire risk. Please develop an active management plan centred around replacing native habitat in a mosaic pattern, enabling existing populations to remain until vegetation has established. Monitoring sites should be established to ensure population numbers are not adversely affected and are increasing over time.
- To slow the rate of weed invasion, isolated smaller patches and seedlings of gorse and boxthorn should be removed where practical from the north-eastern part of The Nut, in accessible areas below the cliffs and above the shoreline roughly between the map points 3571 4859 and 3567 4863. Please seek advice on the most appropriate and effective methods for weed removal.
- Any invading gorse seedlings near the top part of gully near the telecommunications hut (map grid 3564 4859) should be removed regularly. Gorse should not be removed from the bottom part of the gully or from the gully at map grid 3567 4856 as this may cause excessive surface disturbance or lead to drying out of the area.
- Invasive and dominating weeds should be kept out of areas where the species occurs. Boxthorn and gorse are particularly bad. Where these weeds occur at a low density in these areas, they should be removed where practical and safe.
- The large ivy growing on the southern wall of The Nut (clearly visible from Stanley) should not be removed as it has become a large refuge for snails.
- Please become familiar with identification of this species as more surveys are always needed in areas other than The Nut.

More Information

Bonham, K (1998) A status survey of the land snail *Miselaoma weldii*. Report to the Threatened Species Unit, Parks and Wildlife Service, Tasmania.

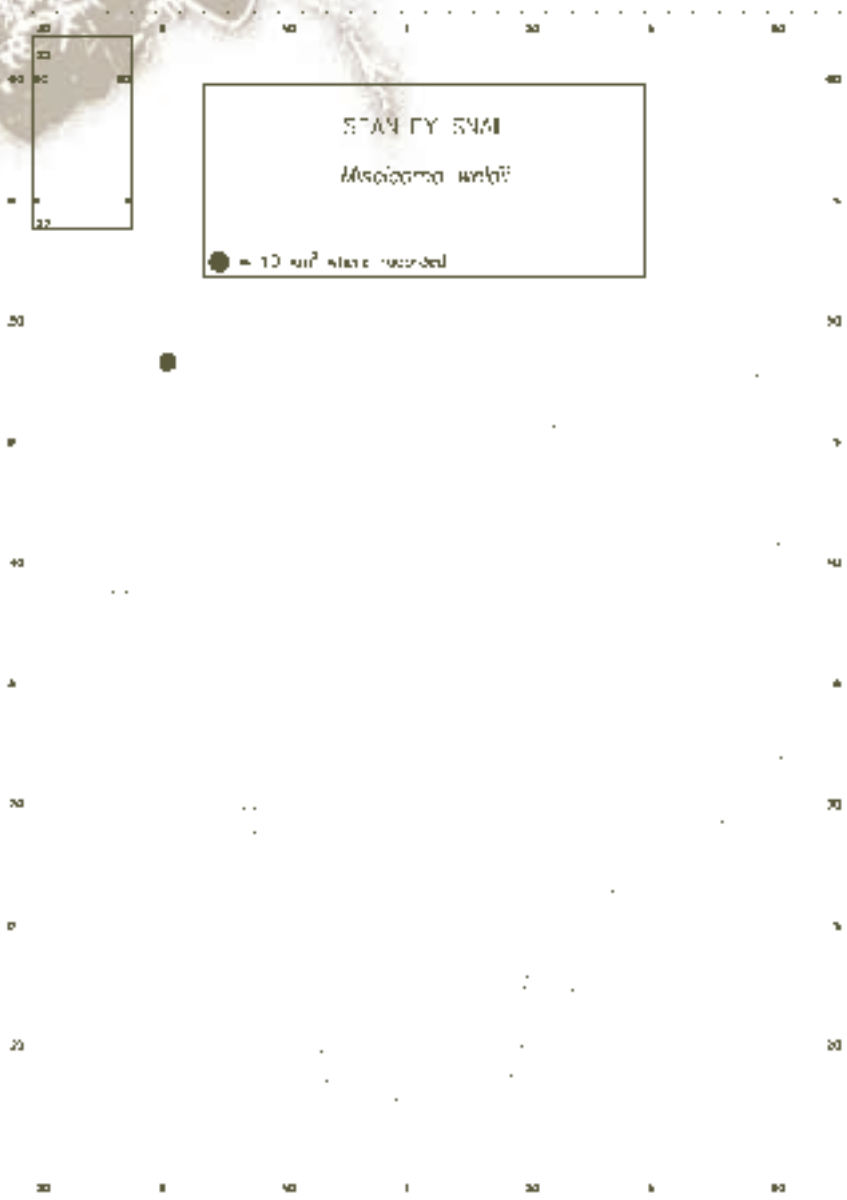
Bonham, K. J. (1998). Reassessment of the status of Tasmanian native land snails. Report to the Threatened Species Unit, Parks and Wildlife Service, Tasmania.

Smith, B. J. and Kershaw, R. C. (1981). Tasmanian land and freshwater molluscs. Fauna of Tasmanian Handbook No. 5. Department of Zoology, University of Tasmania, GPO Box 252C, Hobart, Tasmania, 7001.

Threatened Species Unit (1999). Listing Statement: Stanley Snail *Miselaoma weldii*. Parks and Wildlife Service, Hobart, Tasmania.

1: 25 000 TASMAP sheets with known sites and potential habitat

Stanley



'SKEMPS' SNAIL

Undescribed species in the family Charopidae

[No illustration available]

Status

Tasmania's *Threatened Species Protection Act 1995* - Rare
Commonwealth *Endangered Species Protection Act 1992* - not listed

Description

A small thin, flat land snail measuring about 4 to 5 mm in width and about 2 mm in height. There are 5 whorls in the shell. The shell spire is flat and slightly depressed and is off-white to a pale yellow in colour (never banded). The shell has a sculpture of very bold radial ribs (about 80 to 90 on last whorl) and fine radial riblets (i.e. about 10 per interval) and a radial protoconch. A diagnostic feature of 'Skemps' snail is the very wide open umbilicus (about 40% of shell width), however, this species is easily confused with other charopids.

Distribution, Habitat and Biology

Little is known of this small land snail even though it belongs to most dominant group of land snails in Tasmania (the endodont snails), both in terms of numbers of species and numbers of individuals in the group. 'Skemps' snail has not yet been formally described, however, voucher specimens are lodged at the Queen Victoria Museum in Launceston. The common name refers to the late Jack Skemp who owned an important wildlife property at Myrtle Bank, now a private reserve.

The currently known distribution of 'Skemps' snail is in northeast Tasmania in the area bounded between Lilydale, Mt Barrow and The Sideling, near Scottsdale. More surveys are required to improve our current understanding of the species' total range. Present calculations estimate that the total area bounded by this range is about 25 by 25 km, but the area of habitat suitable for the snail within this area is probably as small as a few hundred hectares. Within this very restricted range there are no formal reserves at present and it is suspected that the species is in decline.

'Skemps' snail has only ever been found in wet sclerophyll, mixed forest and rainforest gullies where it usually occurs within about 10 to 15 m of creek lines. There may be an important link between moisture content of the substrate and the suitability of habitat for 'Skemps' snail. To date few populations have been found which are continuous along creek lines for more than 1 km.

Little is known of the life history of 'Skemps' snail but it may be similar to other snails in the family Charopidae. Generally, these types of snails occur in the litter, under logs or shelter in damp situations. They feed on decaying organic matter or fungi.

Key Sites

- Skemps Property, Myrtle Bank
- Area bounded between Lilydale, Nunamara and The Sideling

Key Threats

- Loss or disturbance to native vegetation along creek lines in the species' range, including log and litter layer.
- Fragmentation of stream sides through disturbances such as roading.
- Changes in drainage or flow regimes of creeks, e.g. floods, droughts, creek works, etc.
- Weed encroachment along stream sides, e.g. blackberries, which smother habitat, prevent the formation of litter layers and access to log shelters.
- Lack of reservation or protected areas.
- Limited information about species life history, preventing management.

Habitat Management

If you manage land within the range of 'Skemps' snail, please consider these practices:

Vegetation Clearing and Buffers

- Avoid clearing native vegetation from stream side zones or stream banks. Vegetation provides shelter, shade (maintains water temperature), and essential food for 'Skemps' snail. It also filters surface runoff (reducing nutrients and sediments), limits light levels, and maintains slope and bank stability.

- Stream zones should contain a mix of native understorey and overstorey plants where appropriate, including reeds, grasses, shrubs and trees. Diversity of vegetation along stream banks is important as trees, shrubs and ground cover all play different and important roles in stream bank stability. Establish vegetation as far down the base of the bank as possible. This may require special work to stabilise the toe of the bank or reduce its steepness to enable vegetation to establish.
- The width of vegetation buffers depends on the situation. The greater the buffer width, the greater the protection, the more diverse the buffer vegetation, the better the protection. In any case, for small, seasonally dry water channels buffers should be no less than 10 m wide each side, grading up to at least 60 m or more wide each side for larger stream zones. Two methods for calculating minimum buffer width are: a distance equivalent to the average dominant tree height, or if there are no trees, the amplitude distance between bends.

Weed and Willow Removal

- Cut and paint weeds with poison, leaving roots (and stumps of willows) intact to aid bank stability. Painting will also eliminate re-sprouting from suckers, e.g. willows.
- Removal of willows or dense weed mats must coincide with a re-vegetation program so that stream banks are not exposed to excessive erosion, light or loss of foliage. Remember that most snails, especially "skemps' snail like cool, shady places.
- Use only herbicides which are registered as suitable in watercourses (e.g. Roundup Biactive(r)). Seek advice from the Parks and Wildlife Service on types of herbicides and preferred alternatives.

Fertilisers, Chemicals, etc.

- Use only chemicals which are registered as suitable in watercourses as snails and many other animals are extremely sensitive to chemicals, even in light doses (e.g. pyrethrin is lethal to crayfish and lobsters).
- Time any fertiliser or chemical application to avoid periods of intense runoff. Instead of broadcast applications, try direct placement in the soil or place under a blanket of stubble mulching, etc.
- Trial the use of alternative 'environmentally friendly' applications, which may also be safer for stock and human health.

Managing Stock Access

Stock naturally favour wetlands and riversides and if poorly managed will completely degrade crossings, watering points and foul the water. This results in bank erosion, loss of plant species, soil compaction, weed invasion, and a build up of bacteria and viruses in the water. If at all possible 'Keep Stock Out'.

- Fencing and smart planning will enable you to manage the riparian zone and your stock. Hanging fences, electric and electronic fences, drop fences, and alternative watering points, even troughs, should be used depending on the situation.
- Timing, intensity and duration of stock in sensitive riparian zones can also be regulated to maintain the area.

Dams, Weirs, etc.

- Do not construct dams, weirs, etc. anywhere in the catchment. Please seek advice. Barriers will significantly alter environmental flow regimes, including impacting the surrounding stream-land interface and may make the site totally unsuitable for 'Skemps' snail and many other plant and animal species.

Other Ways to Help

- More information is required on the distribution and life history of 'Skemps' snail. Become familiar with its identifying features and report any new locations to the Threatened Species Unit.

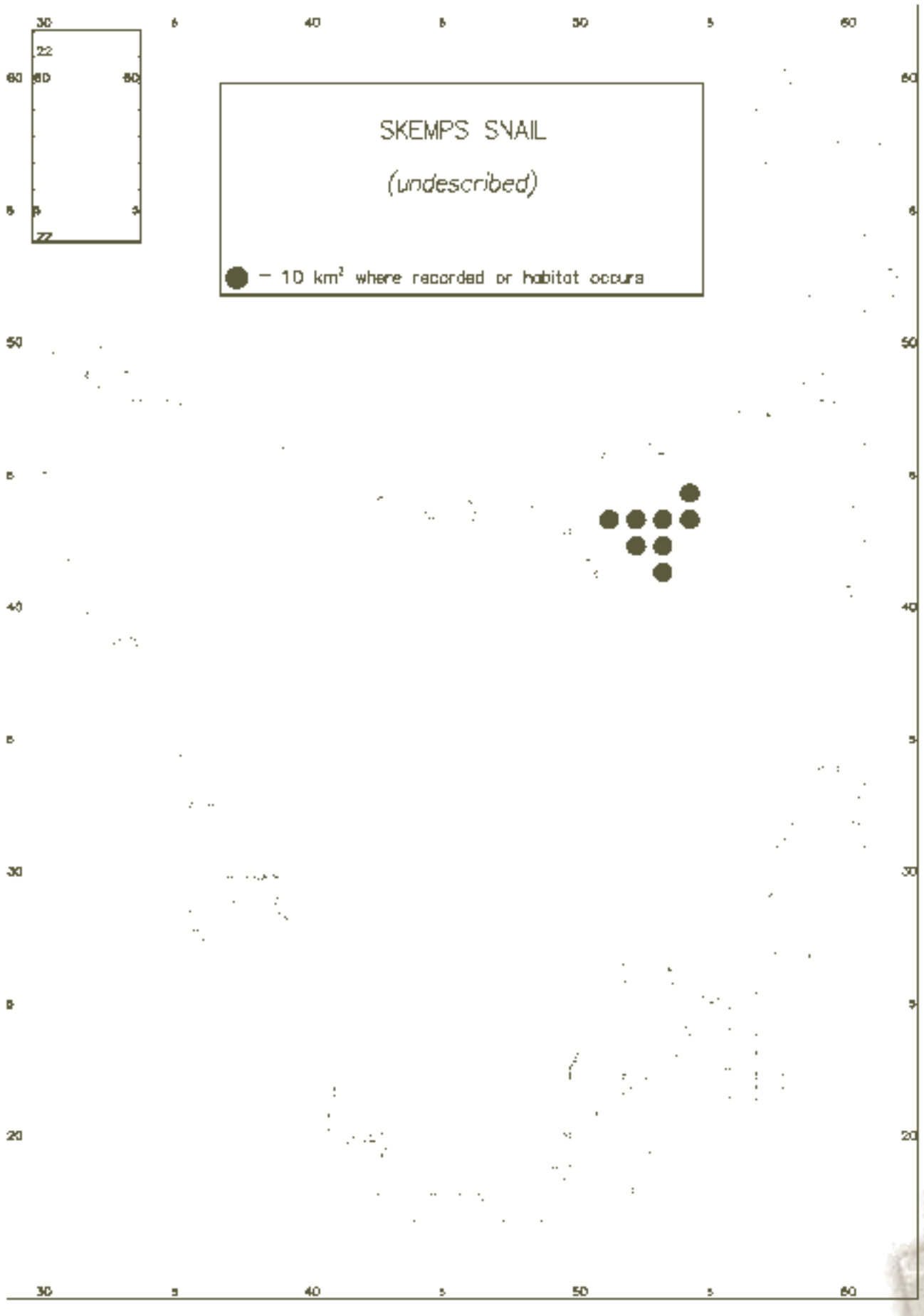
More Information

Bonham, K. J. (1998). Reassessment of the status of Tasmanian native land snails. Report to the Threatened Species Unit, Parks and Wildlife Service, Tasmania.

Smith, B. J. and Kershaw, R. C. (1981). Tasmanian land and freshwater molluscs. Fauna of Tasmanian Handbook No. 5. Department of Zoology, University of Tasmania, GPO Box 252C, Hobart, Tasmania, 7001.

1:25 000 TASMAP sheets with known sites and potential habitat

Dilston	Lilydale	Lisle	Nabowla
Nunamara	Patersonia	Retreat	


SKEMPS SNAIL
(undescribed)
= 10 km² where recorded or habitat occurs

FRESHWATER SNAILS

Beddomeia species, *Phrantela* species (Family: Hydrobiidae, *Beddomeia* Complex)

[Illustrations from Ponder 1993]

Status

Beddomeia krybetes

Tasmania's *Threatened Species Protection Act 1995* -Vulnerable
Commonwealth *Endangered Species Protection Act 1992* - not listed

Beddomeia tumida

Tasmania's *Threatened Species Protection Act 1995* - Vulnerable
Commonwealth *Endangered Species Protection Act 1992* - not listed

All other species

Tasmania's *Threatened Species Protection Act 1995* - Rare
Commonwealth *Endangered Species Protection Act 1992* - not listed

Description

Detailed descriptions of all species are provided in Ponder *et al.* (1993). The family Hydrobiidae (includes *Beddomeia* and *Phrantela*) are generally all identified by shell or anatomical characteristics. All members of the groups have a single, elongate, upwardly spiralling and tapering shell, which is small in size (1 to 7 mm) and generally squat, with 5 to 8 whorls. The shell is either smooth or has longitudinal grooves and is either colourless, opaque or light brown in colour. All members of the group have an 'operculum' which is a horny or calcareous structure situated on top of the tail that closes or seals the shell opening when the animal contracts. The operculum is oval, flat and thin and either transparent or a pale yellow colour. The genera *Phrantela* and *Beddomeia* are almost identical except for microscopic anatomical differences in the male and female reproductive organs.

Distribution, Habitat and Biology

The family Hydrobiidae is the most widespread and diverse family of freshwater molluscs in the world, occupying a range of habitats from streams and estuarine creeks to alpine bogs. The *'Beddomeia* Complex' of Hydrobiidae comprises four genera and totals about 67 species. The *Beddomeia*, *Phrantela* and *Nanocochlea* genera occur only in Tasmania and the genus *Victodrobia* is found in eastern Victoria. The largest group *Beddomeia* includes 47 species which occur mainly across the northern third of the State. The genus *Phrantela* has 13 species which are clustered in the west and southwest of Tasmania.

Many of the species in the '*Beddomeia* Complex' are threatened because of their very small geographic ranges, being found at a single site such as a small stream or seep. It has been suggested that the large number of species have evolved in different areas because the snails appear to be very selective in their habitat and have no obvious means of dispersal, either structurally or by physical vectors. They are cryptic in their habits and tend to live in sheltered and inaccessible parts of the stream channel, such as under rock slabs.

As a group they are largely intolerant to disturbances and only occur in stable situations and relatively small water bodies. They have a narrow tolerance to a range of environmental variables such as water temperature, pH, water flow, dissolved oxygen and conductivity. Most occupy streams which are thickly bordered by dense native vegetation. They feed on algae and detritus from rock surfaces which they obtain by rasping using their teeth. Male and female sexes are separate. The female lays single eggs into a capsule usually constructed of sand grains and attached under rocks or wood. Eggs develop as small crawling juveniles.

Key Sites

Species	Key Site	Species	Key Site
Beddomeia angulata	Rapid River	*Beddomeia lodderae*	Upper Castra Rivulet
Beddomeia averni	West Gawler	*Beddomeia mesibovi*	Arthur River
Beddomeia bellii	Heazlewood River	*Beddomeia minima*	Scottsdale area
Beddomeia bowryensis	Bowry Creek, Savage River	*Beddomeia petterdi*	Tributary of Blythe River
Beddomeia briansmithi	Fern Creek, Forester	*Beddomeia phasianella*	Creeks in Penguin area

Species	Key Site	Species	Key Site
Beddomeia camensis	Cam River	*Beddomeia protuberata*	Emu River
Beddomeia capensis	Table Cape	*Beddomeia ronaldi*	St Patricks River
Beddomeia fallax	Heathcote Creek, Upper Castra	*Beddomeia salmonis*	Salmon River
Beddomeia forthensis	Wilmot and Forth River junction	*Beddomeia tasmanica*	Goulds Country
Beddomeia franklandensis	Frankland River, Balfour	*Beddomeia topsiae*	Williamson Creek, Roger River
Beddomeia fromensis	Frome River	*Beddomeia trochiformis*	Bowry Creek, Savage River
Beddomeia fultoni	Christmas Hills and Brittons Swamp	*Beddomeia tumida*	Great Lake
Beddomeia gibba	Salmon River	*Beddomeia turnerae*	Minnow River
Beddomeia hallae	Buttons Rivulet, South Preston Road	*Beddomeia waterhouseae*	Claytons Rivulet, Forth River
Beddomeia hermansi	Vicking Creek, Wilmot River	*Beddomeia wilmotensis*	Wilmot River
Beddomeia hullii	Heazlewood River	*Beddomeia wiseae*	Blizzards Creek, Irishtown
Beddomeia inflata	Heathcote Creek, Castra	*Beddomeia zeehanensis*	Little Henty River, Zeehan
Beddomeia kershawi	Lake River, Macquarie	*Phrantela annamurrayae*	Heazlewood River
Beddomeia kessneri	Dip Falls, Arthur River	*Phrantela conica*	Little Henty River, Zeehan
Beddomeia krybetes	One site at St Pauls River	*Phrantela marginata*	Heazlewood River
Beddomeia launcestonensis	Cataract Gorge	*Phrantela pupiformis*	Tyenna River, Gordon Road

Key Threats

Disturbance to the stream environment by:

- Clearing of stream side vegetation which alters temperature, light and food availability.
- Destruction of small seepages.
- Water pollution by pesticides, fertilisers, increased sediment loads, etc.
- Damming of streams, especially in the headwaters.
- Extraction of rock and gravel or heavy machinery and structures placed in the stream bed.

Management Recommendations for Commercial Forestry

- Detailed recommendations are provided to Forest Practices Officers under the Forest Practices Code.

Habitat Management

If you manage land with any of these threatened freshwater snails, please consider these practices:

Vegetation Clearing and Buffers

- Avoid clearing native vegetation from stream side zones or stream banks. Vegetation provides shelter, shade (maintains water temperature), and essential food for freshwater snails. It also filters surface runoff (reducing nutrients and sediments), limits light levels, and maintains slope and bank stability.
- Stream zones should contain a mix of native understorey and overstorey plants where appropriate, including reeds, grasses, shrubs and trees. Diversity of vegetation along stream banks is important as trees, shrubs and ground cover all play different and important roles in stream bank stability. Establish vegetation as far down the base of the bank as possible. This may require special work to stabilise the toe of the bank or reduce its steepness to enable vegetation to establish.
- The width of vegetation buffers depends on the situation. The greater the buffer width, the greater the protection, the more diverse the buffer vegetation, the better the protection. In any case, for small, seasonally dry water channels buffers should be no less than 10 m wide each side, grading up to at least 60 m or more wide each side for larger stream zones. Two methods for calculating minimum buffer width are: a distance equivalent to the average dominant tree height, or if there are no trees, the amplitude distance between bends.
- Buffers are especially important at points where surface water enters small river channels or landscape depressions, and where flow concentrates.
- An effective buffer zone should also provide for the continuing input of large woody debris and leaf litter into the stream.

Weed and Willow Removal

- Cut and paint weeds with poison, leaving roots (and stumps of willows) intact to aid bank stability. Painting will also eliminate re-sprouting from suckers, e.g. willows.
- Removal of willows or dense weed mats must coincide with a re-vegetation program so that stream banks are not exposed to excessive erosion, light or loss of foliage. Remember that most freshwater snails like cool, shady places.
- Prevent any large, heavy machinery or structures from entering the wetland or stream bed, e.g. tractors, excavators, bridge supports, etc., even if they are being used for restoration activities. This will not only directly kill localised species and alter habitat for other aquatic animals, but the sedimentation caused by the disturbance will accumulate on the stream bed and smother fragile habitats.
- Do not remove gravel or large quantities of rock from the stream bed. This contains aquatic fauna, provides cover and disperses water flow. The removal of shingle from the river can alter the stream hydrology and lead to erosion of the stream bed and channel.
- Use only herbicides which are registered as suitable in watercourses (e.g. Roundup Biactive®). Seek advice from the Parks and Wildlife Service on types of herbicides and preferred alternatives.
- If introduced cumbungi (bullrush) is invading the site it should be destroyed as early as possible, e.g. young or early growth stages. Manual (hand) or mechanical removal must remove the entire plant, including the roots and rhizomes. If using Roundup Biactive® only apply during the flowering period (December to March).

Snags or Woody Debris

Woody debris, including snags, are a natural and important part of the river system. Snags are essential for creating a range of flow conditions enabling a diversity of plants and animals to establish. They provide shade and shelter, and their gradual decay and trapping of leaf litter provides the food for many freshwater snails and other aquatic animals (e.g. frogs, crayfish, insects).

- Do not remove woody debris or snags from the river system. If a snag is completely blocking water flow seek advice on how to realign it to a 20 to 40 degree angle to the stream bank.
- Lop selected branches from snags near the water surface if they tend to trap debris and cause log jams.
- If the woody debris requires removal from the main stream channel, try relocating it to a position of low water velocity in the stream or place it on the outside of banks to improve stability.
- In streams which have been modified or degraded consider re-introducing woody debris into the stream system. Seek advice on the best way to undertake this.

Fertilisers, Chemicals, etc.

- Use only chemicals which are registered as suitable in watercourses as snails and many other animals are extremely sensitive to chemicals, even in light doses (e.g. pyrethrin is lethal to crayfish and lobsters).
- Time any fertiliser or chemical application to avoid periods of intense runoff. Instead of broadcast applications, try direct placement in the soil or place under a blanket of stubble mulching, etc.
- Trial the use of alternative 'environmentally friendly' applications, which may also be safer for stock and human health.

Managing Stock Access

Stock naturally favour wetlands and riversides and if poorly managed will completely degrade crossings, watering points and foul the water. This results in bank erosion, loss of plant species, soil compaction, weed invasion, and a build up of bacteria and viruses in the water. If at all possible 'Keep Stock Out'.

- Fencing and smart planning will enable you to manage the riparian zone and your stock. Hanging fences, electric and electronic fences, drop fences, and alternative watering points, even troughs, should be used depending on the situation.
- Timing, intensity and duration of stock in sensitive riparian zones can also be regulated to maintain the area.

Culverts, Dams, Weirs, etc.

Many aquatic animals (especially tiny freshwater snails) avoid or are unable to go through culverts. Culverts channel the water flow over the smooth concrete surface and increase flow velocity. Poorly designed or poorly embedded culverts prevent upstream movement and natural mixing of aquatic species and also force larger species like lobster onto roadsides or into open situations.

- Wherever possible use bridges instead of culverts. Try alternative inverted 'U' shaped designs or irregular shapes. If round culverts are necessary they should be fully embedded in the stream bed and ideally should have an artificial substrate provided down the mid-line of the pipe (e.g. cemented rocky gravel).

- Do not construct dams, weirs, etc. anywhere in the catchment. Please seek advice. Barriers will significantly alter environmental flow regimes and may make the site totally unsuitable for many plant and animal species.

Other Ways to Help

- Freshwater snails are a fascinating part of our aquatic ecosystem. Because they are localised and slow to radiate they provide us with a rare opportunity to study genetic and evolutionary processes at work. Learn more about these creatures and how to identify stream invertebrates. The Fauna of Tasmania Handbook (Smith and Kershaw 1981) and the work by Ponder (*et al.* 1993) provide simple and illustrated guides to many of these species.
- If you own property containing any of the locations for threatened freshwater snails, practice good stream management and consider protecting your stream or waterway in the long-term through a management agreement, covenant or wildlife refuge. Contact the Parks and Wildlife Service for more details.

More Information

Fauna of Tasmania Handbook Series. Department of Zoology, University of Tasmania, GPO Box 252C, Hobart, Tasmania, 7001

Land and Water Resources R and D Corporation (1996-1998). Riparian Management Fact sheets 1-7. LWRRDC, GPO Box 2182, Canberra.

Munks, S.A. (Ed) (1996). A Guide to Riparian Vegetation and its Management. Dept of Primary Industries and Fisheries, Tasmania.

Ponder, W. F., Clark, G. A., Miller, A. C. and Toluzzi, A. (1993). On a major radiation of freshwater snails in Tasmania and eastern Victoria: a preliminary overview of the *Beddomeia* group (Mollusca: Gastropoda: Hydrobiidae). Invertebrate Taxonomy 7: 501-750.

Smith, B. J. and Kershaw, R. C. (1981). Tasmanian land and freshwater molluscs. Fauna of Tasmanian Handbook No. 5. Department of Zoology, University of Tasmania, GPO Box 252C, Hobart, Tasmania, 7001.

1: 25 000 TASMAP sheets with known sites and potential habitat

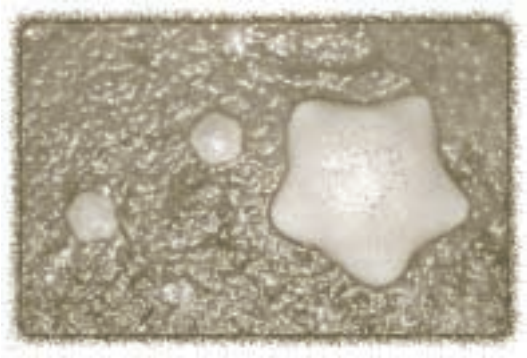
Adamsfield	Bertha	Beryl	Blue Tier
Castra	Delmont	Dempster	Derby
Dundas	Gog	Keith	Kindred
Launceston	Lea	Lileah	Loongana
Loyetea	Luina	Meredith	Milabena
Nunamara	Parrawe	Pearly Brook	Prospect
Riana	Ringarooma	Roger	Scottsdale
Split Rock	St Pauls Dome	Sumac	Tewkesbury
Togari	Ulverstone	Waratah	Wilmot
Wynyard			


FRESHWATER SNAILS
42 species
= 10 km² where recorded

SOUTHEAST SEASTARS (3 species)

Marginaster littoralis (Asteroidea: Poraniidae)
Live-bearing seastar *Patiriella vivipara* (Asteroidea: Asteriidae)
Smilasterias tasmaniae (Asteroidea: Asteriidae)

[Photo of live-bearing seastar by Graham Knott]



Status

Live-bearing seastar

Tasmania's *Threatened Species Protection Act 1995* - Endangered
Commonwealth *Endangered Species Protection Act 1992* - not listed

Marginaster littoralis

Tasmania's *Threatened Species Protection Act 1995* - Endangered
Commonwealth *Endangered Species Protection Act 1992* - not listed

Smilasterias tasmaniae

Tasmania's *Threatened Species Protection Act 1995* - Rare
Commonwealth *Endangered Species Protection Act 1992* - not listed

Description

The live-bearing seastar is a tiny, uniformly orange-yellow seastar, up to 15 mm across. The species usually has five short arms and is a rounded, pentagon-shape. Morphological variation is common with three, four or six arms occasionally being present. The colour is distinctive and in the field it can be distinguished from the similar *Patiriella exigua* and juvenile *P. regularis* by the colour of the underside: orange-yellow in *P. vivipara*, blue-green in *P. exigua,* and off-white in *P. regularis*. When reproducing, the small young can be seen on the upper surface of the adult.

The seastar *Marginaster littoralis* grows up to 17 mm in diameter and has five arms. When alive the seastar is coloured greenish brown on the dorsal side bordered by off-white around the outer edge. The actinal surface is off-white while the epidermis of the abactinal surface appears bluish-green with brown pigmentation around the base of the spinelets. The species is very easily confused with *Patiriella regularis* (New Zealand seastar) which occurs in close proximity throughout its range.

Smilasterias tasmaniae is a small seastar growing up to 20 mm in maximum radius. Its spines appear flattened, truncated, and sometimes have a slight waist (narrowing) and swollen end.

Distribution, Habitat and Biology

The Tasmanian native and introduced seastar fauna includes representatives of about 14 of the 29 families recognised throughout the world. These three species are all endemic to Tasmania and restricted to the southeast, centred around the River Derwent and its channels. The live-bearing seastar *Patiriella vivipara* is found only in Tasmania and is one of only four seastar species world-wide known to bear live young instead of eggs (vivipary). The species was first found in the Pittwater area (near Sorell) by Dartnall in 1968 and since then has only been identified at several further locations, all in southeastern Tasmania. The species lives in rocky areas in the upper intertidal zone, usually under rocks or in crevices. They prefer gently sloping, sheltered shores, characterised by rocks often no more than 20 to 30 cm high. These rock platforms often give way to sand in the lower littoral region. The live-bearing seastar has a very strong affinity to sandstone and has only been found on this rock substrate.

Live bearing seastars can be found singularly or in clusters on rock surfaces with a range of sizes and ages. Some colonies can reach many hundreds of individuals in size. They feed at night and on dull days on the film of algae and microbes coating the rock surface. They possibly live for 8 to 10 years and breed throughout the year. They are very slow moving and can easily be dislodged from rock surfaces. The young develop in gonadal sacs and when they reach 1 to 2 mm in size they rupture from the sac and emerge on the surface of the adult. The newborn seastars are tiny miniatures of the adult. This type of live reproduction means that the species cannot disperse widely, unlike species with a free-swimming larval stage. Although adults are small and reach 14 to 15 mm in size, this is considered large compared to other Australian species of *Patiriella*.

Marginaster littoralis is endemic to southeastern Tasmania. It was described by Dartnall from specimens collected from the rocky mid-littoral zone near Powder Point, Cornelian Bay Point, and in the River Derwent near Hobart. It is a shallow water species and more recent surveys by C. Materia suggest that its total range is probably less than one hectare.

Smilasterias tasmaniae is endemic to southeastern Tasmania where it occurs in the 0 to 8 m littoral zone. The species was first described in 1990 from museum specimens collected from three locations: Lighthouse Bay (Bruny Island), Rechereche Bay, and Catamaran. Surveys conducted by C. Materia in 1994 found the species to be absent from the most southerly type localities and now restricted to six localities on the western side of Bruny Island. Each site probably contains less than 30 animals.

Key Sites

Live bearing seastar

Intertidal sandstone platforms at:

- Roches Beach, Lauderdale
- Pittwater Lagoon, Midway Point, especially the sandstone wall of the causeway (largest population)
- Tessellated Pavement and Fortescue Bay
- Woodbridge
- Howden
- Daniels Bay, Bruny Island

Marginaster littoralis

Occurs in shallow waters in the River Derwent at:

- Cornelian Bay Point
- Powder Jetty, near Tasman Bridge (type locality)
- Pavilion Point (near Botanical Gardens)
- Granville Avenue, Risdon
- Paloona Street, Lindisfarne

Smilasterias tasmaniae

Occurs in littoral waters around Bruny Island at:

- Bligh Point
- Simmonds Bay
- Grundys Point
- Pt Winifred, Daniels Bay
- Chevertons Point, Ford Bay
- Sadgrove Point, Ford Bay

Key Threats (all species)

- Removal of rocks and suitable substrates from the shore and intertidal zone.
- Decreasing water quality and increased nutrients (especially from sewage and fertiliser run off), causing growth of algae that smother the rocks.
- Sedimentation and increased siltation, leading to changes in water quality.
- Increasing coastal development, leading to infrastructure, e.g. jetties and seepage from outlets into the intertidal zone.
- Collection for aquaria.
- Competition and displacement from the introduced New Zealand seastar *Patiriella regularis* and Northern Pacific seastar *Asterias amurensis*.

Habitat Management

- Any coastal developments proposed within these species' range should undertake a detailed environmental impact assessment. This applies especially to proposals which result in infrastructure on the shoreline, e.g. boat sheds, jetties, fish farm developments, etc., boat motors or generators causing water turbidity or sewage and pollutants entering the waterways.
- Storm water from gutters and drains flows into the sea and affects water quality. Ensure that no pollutants such as detergents, oil, pesticides or fertilisers reach storm water drains or gutters.

Other Ways to Help

- Report new sites for any of these distinctive, tiny seastars to the Parks and Wildlife Service. More information is always needed on their distribution and ecology.
- Be careful when exploring intertidal zones in these species' ranges. Lifting and moving rocks can easily dislodge seastars, making them vulnerable to being swept into unsuitable habitat.
- It is illegal to keep these species in aquaria (commercial or private). Please do not collect or disturb these or other seastars. Enjoy watching them in their natural environment.

More Information

Dartnall, A. J. (1969). A viviparous species of *Patiriella* (Asteroidea, Asterinidae) from Tasmania. Proceedings of the Linnean Society NSW 93: 294-296.

Dartnall, A. J. (1980). Tasmanian echinoderms. Fauna of Tasmanian Handbook No. 3. Department of Zoology, University of Tasmania, GPO Box 252C, Hobart, Tasmania, 7001.

Edgar, G. J. (1997). Australian Marine Life: The Plants and Animals of Temperate Waters. Reed Books, Kew.

Materia, C. J. (1994). The status of the Tasmanian seastar *Marginaster littoralis* Dartnall, 1970. Wildlife Report 94/8, Parks and Wildlife Service, Tasmania and the Tasmanian Museum and Art Gallery, Hobart.

Prestedge, G. K. (in press). The distribution and biology of *Patiriella vivipara* (Echinodermata: Asteroidea: Asterinidae) a sea star endemic to southeast Tasmania. Records of Australian Museum.

1: 25 000 TASMAP sheets with known sites and potential habitat

live bearing seastar

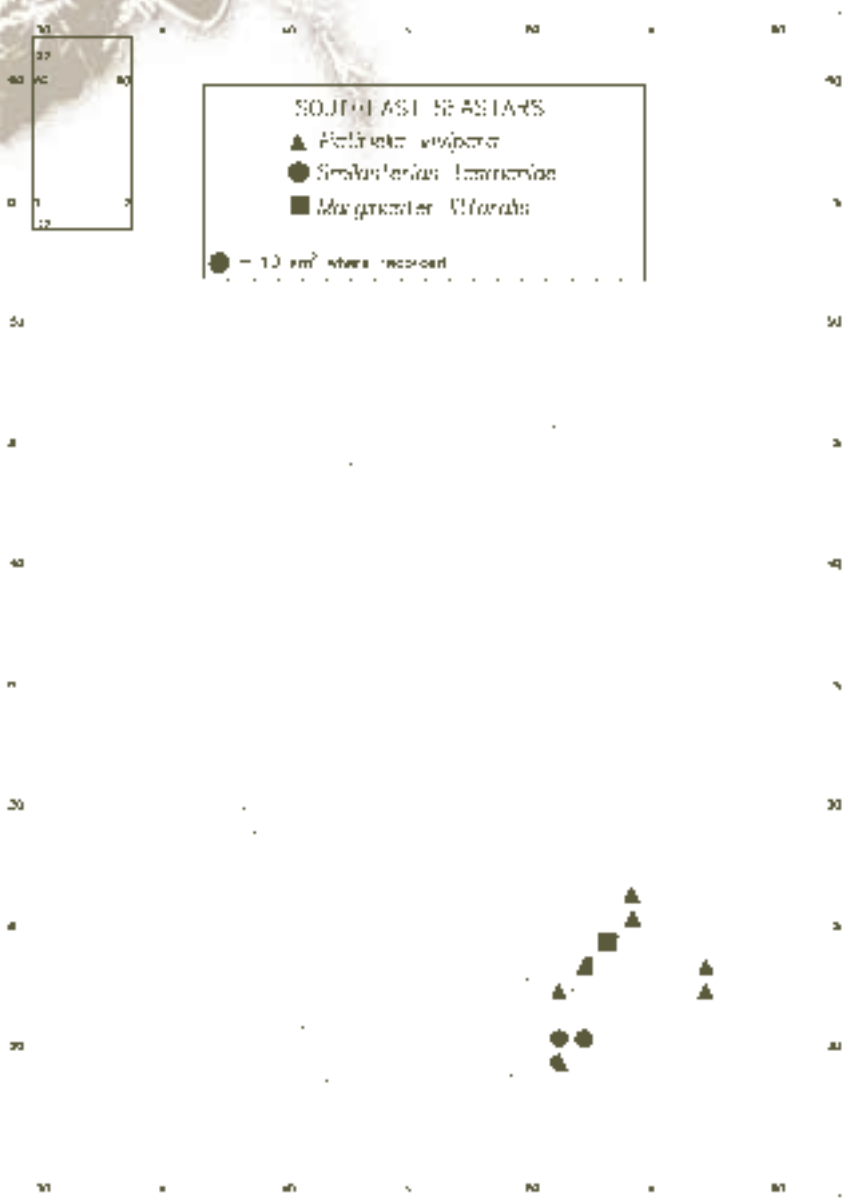
Adventure Bay	Barnes Bay	Blackmans Bay	Carlton
Cloudy	Communication	Cremorne	Cygnet
Dover	Dunalley	Fluted Cape	Great Bay
Hippolyte	Lymington	Murdunna	Partridge
Port Arthur	Raoul	Sorell	Taranna
Taroona	Tasman		

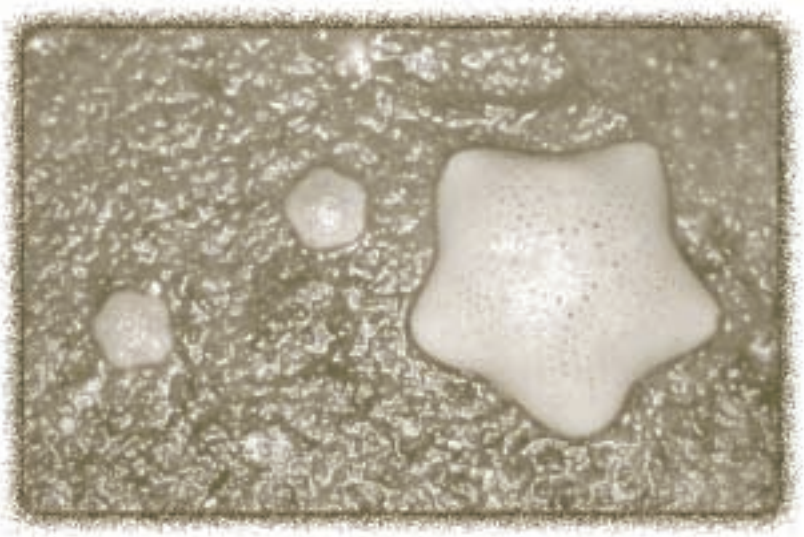
Marginaster littoralis

Hobart

Smilasterias tasmaniae

Barnes Bay	Great Bay	Partridge


SOUTH EAST SEASTARS



CAVE ECOSYSTEMS (26 species)

Animals adapted to the cave environment

[Illustrations by Karen Richards]

Status

Tasmania's *Threatened Species Protection Act 1995* - status as shown below
Commonwealth Endangered Species Protection Act 1992 - not listed

Species and Key Sites

Species	Tas. Status	Key Sites
Echinodillo cavaticus (Flinders Island cave slater)	Rare	Flinders Island Cave
Goedetrechus mendumae (blind cave beetle)	Vulnerable	Exit Cave and Mystery Creek Cave
Goedetrechus parallelus (slender cave beetle)	Vulnerable	Junee-Florentine cave system
Hickmanoxyomma cavaticum (Ida Bay harvestman)	Rare	Hastings, Ida Bay, North Lune Caves
Hickmanoxyomma gibbergunyar (harvestman)	Rare	Mole Creek Caves
Idacarabus cordicollis (rough necked cave beetle)	Rare	Hastings Caves
Idacarabus troglodytes (Ida Bay cave beetle)	Rare	Ida Bay Caves
Micropathus kiernani (Kiernans cave cricket)	Rare	A sandstone cave near Dover
Olgania excavata (little six eyed spider)	Rare	Bubs Hill Caves, Exit Cave, Gordon River Valley
Parvotettix rangaensis (Ranga cave cricket)	Rare	Flinders Island Cave
Pseudotyrannochthonius typhlus (cave false scorpion)	Rare	Georgies Hall Cave, Baldocks Cave, Maracoopa Cave
Tasmanotrechus cockerilli (Cockerills cave beetle)	Vulnerable	Mole Creek and Maracoopa Caves

Other Cave Invertebrates

Tasmania's *Threatened Species Protection Act 1995* - not listed, but considered of high conservation significance.

All cave fauna is of high conservation value due to its long evolutionary adaptation to the cave environment, high endemicity and usually very restricted distribution. Other species considered naturally rare or restricted in distribution include:

Acanthodillo (new species) (slater)
Arachnocampa tasmaniensis (glow worm)
Cavernotettix craggiensis (cricket)
Cavernotettix flindersensis (cricket)
Hickmanoxyomma clarkei (harvestman)
Hickmanoxyomma eberhardi (harvestman)
Hickmanoxyomma goedei (harvestman)
Idacarabus longicollis (beetle)
Lomanella troglodytes (harvestman)
Notoniscus (new species) (slater)
Parvotettix whinrayi (cricket)
Pseudotricula eberhardi (freshwater snail)
Phrantela kutikina (freshwater snail)
Styloniscus (new species) (slater)
Tupua cavernicola (spider)

Habitat and Biology

Tasmania has the richest cave faunal assemblages in temperate Australia. Surveys of nearly 500 Tasmanian caves have identified more than 650 species of invertebrates from 179 families and 271 genera. The cave environment is one of gradual to total darkness, stable temperature and high humidity, all intricately regulated by the streams and water channels which feed through it. Cave creatures are usually small, e.g. invertebrates, and highly adapted to the specialised environment, being unable to survive elsewhere. This is because they can only disperse through cracks in bedrock, or perhaps through soil layers or forest litter on the surface, and so separate species evolve in different cave areas. They often develop features like reduced or no eyes, pale body colour, extraordinarily long legs, antennae or sensory hairs, or special adaptations like being able to emit tiny lights to attract prey,

as glow worms do. Cave species generally have a slow metabolic rate and are able to survive long periods without food. As there is no light deep in caves to enable plant growth, the food web depends predominantly on the organic debris and aquatic fauna washed in via streams, which in turn are regulated high in the catchment. Food items also enter the cave environment by methods such as falling in due to gravity, tree roots or species which are mobile in the cave system, e.g. cave crickets.

Tasmania's cave fauna includes millipedes, glow worms, freshwater snails and crustacea, segmented worms, flatworms, spiders, beetles, pseudoscorpions, mites and springtails. Cave harvestman such as *Hickmanoxyomma cavaticum* and *Hickmanoxyomma gibbergunyar* closely resemble spiders but do not have fangs or silk organs, instead they have long, spindly legs and large palps for grasping prey. *Hickmanoxyomma cavaticum* is about 7 mm long, yellowish brown and has a prominent eye mound with a long spine. They usually live on the cave walls or floor, either in the transition zone (no light but environmental effects from the surface still felt, e.g. temperature, moisture changes, etc.) or zone of total darkness. *Olgania excavata*, the little six eyed spider, is less than a millimetre long, with six eyes, a fused head and thorax. The upper body colour is a brownish yellow with greyish white underneath. They form clusters or colonies living in small sheet webs, which sparkle and shine when shone with a torch.

The many species of cave beetle are characterised by being flightless, reddish-brown in colour, compact in body size but with elongated legs. Some are blind like *Goedetrechus mendumae* and mostly confined to the zone of total darkness where they are found under stones or near the stream edge collecting food items. Adults and larvae are predatory and feed on invertebrates that live in the cave system, e.g. eggs of other species, or invertebrates washed in by streams.

Cave crickets in the genus *Micropathus* form dense colonies on walls or ceilings, usually close to the cave entrance. They are not confined totally to the cave environment and when weather conditions are suitable they emerge to seek food outside, scavenging on mosses or other invertebrates. They have long antennae to help them navigate in reduced light. The female cricket is recognisable by the large spine or 'ovipositor' projecting from her abdomen which she uses to make a hole in soft sediments and deposit her single egg.

Key Sites

- As listed in the table for the threatened species.

A further 14 karst areas contain threatened cave communities and are of high conservation significance. The main threat for each cave or karst site is also given.

- Junee-Florentine - existing or past logging operations
- Risbys Basin - possible limestone quarry operations
- Mole Creek - threatened by land use activities and high visitor numbers
- Ida Bay - threats from uncontrolled high visitor numbers
- Mount Cripps - threats from logging operations
- Nelson River - threat from dam construction on the King River
- Huon River - road building disturbances
- Flowery Gully - farming and quarrying disturbances
- Eugenana - farming activities
- Gray and Mount Elephant - farming activities
- Gunns Plains - threats from farming and forestry activities
- Trowutta Arch - farming activities
- Loongana - forestry plantations and land use activities
- Redpa - farming activities

Key Threats (also see above)

- Any reduction in or disturbance to catchment or stream side vegetation which changes the water flow, water quality or drainage pattern.
- Forestry operations resulting in soil erosion and changes to water quality, sedimentation and pollution of cave streams, clearing of vegetation over and around cave entrances and above cave systems, and the dumping of timber debris into caves and sinkholes.
- Plantation development in karst catchments, particularly pines, leading to significant alterations to surface and underground hydrology, nutrient enrichment of underground streams, invasion of caves by pine roots and associated fungal species.
- Limestone and other quarries and mines - direct destruction and also associated run-off from mining operations carrying high sediment loads and affecting pH of streams in karst catchments.

- Effects of agriculture and grazing, including soil erosion and sedimentation, increased stream nutrient levels, effects of herbicides and pesticides, and alteration of natural hydrological regimes and cave atmospheric processes.
- Flooding due to human induced changes to hydrological processes in the catchment.
- Road making in karst catchments causing increased sediment loads, stream diversion and concentration of drainage.
- Inappropriate or high visiting rates to caves resulting in the degradation of cave habitat, including the sediments and structures, and direct disturbance to cave fauna.
- Inappropriate or over-collection of cave fauna for scientific research may seriously threaten highly restricted cave adapted species.
- Exotic species, e.g. weeds such as blackberries, choking the cave entrances, and lyrebirds causing disruption to natural soil processes in important karst areas at Hastings, Ida Bay, Weld Valley and Florentine Valley.
- Blocking or dumping of waste at the cave entrance or digging, excavations, enlargements, etc. that can significantly affect the micro-climate through air flow, temperature and humidity which directly affect fauna species, especially those confined to the twilight zone.

Management Recommendations for Commercial Forestry

- Detailed recommendations are provided to Forest Practices Officers under the Forest Practices Code.

Habitat Management

If you manage land within a karst area, please consider these practices:

- Avoid any large, heavy machinery or structures entering the stream bed, e.g. tractors, excavators, bridge supports, etc., even if they are being used for restoration activities. The sedimentation caused by the disturbance will accumulate on the stream bed and smother fragile habitats.
- Do not remove gravel or large quantities of rock from the stream bed. This contains aquatic fauna, provides cover and disperses water flow. The removal of shingle from the river can alter the stream hydrology and lead to erosion of the stream bed and channel.
- Do not construct dams, weirs, etc. anywhere in the catchment without advice. Barriers will significantly alter environmental flow regimes and may reduce the flow through the cave system.
- Use only herbicides which are registered as suitable in watercourses (e.g. Roundup Biactive®). Contact the Parks and Wildlife Service for more information on types of herbicides and preferred alternatives.
- Do not dump rubbish or allow stock access to cave entrances or streams flowing into caves. Ideally, these should be protected from all types of access and if appropriate well buffered by vegetation to provide stable temperature, low light levels, etc. Contact the Earth Sciences Officer, Parks and Wildlife Service if you identify a possible cave site or need advice.

Vegetation Clearing and Stream Buffers

- A stable natural vegetation cover should be maintained over cave catchments, including all major and minor tributaries. Consult the Earth Sciences Officer, Parks and Wildlife Service if any clearing, burning or drainage alterations are planned in the vicinity of caves mentioned.
- Avoid clearing native vegetation from stream side zones or stream banks. Vegetation provides shelter, shade (maintains water temperature), and essential food for insects, crayfish and other aquatic fauna, which in turn feed the cave system.
- Stream zones should contain a mix of native understorey and overstorey plants where appropriate, including reeds, grasses, shrubs and trees. Diversity of vegetation along stream banks is important as trees, shrubs and ground cover all play different and important roles in stream bank stability. Establish vegetation as far down the base of the bank as possible. This may require special work to stabilise the toe of the bank or reduce its steepness to enable vegetation to establish.
- The width of vegetation buffers depends on the situation. The greater the buffer width, the greater the protection, the more diverse the buffer vegetation, the better the protection. In any case, for small, seasonally dry water channels buffers should be no less than 10 m wide each side, grading up to at least 60 m or more wide each side for larger stream zones. Two methods for calculating minimum buffer width are: a distance equivalent to the average dominant tree height, or if there are no trees, the amplitude distance between bends.
- Buffers are especially important at points where surface water enters small river channels or landscape depressions, and where flow concentrates.
- An effective buffer zone should provide for the continuing input of large woody debris and leaf litter into the stream.

Snags or Woody Debris

Woody debris, including snags, are a natural and important part of the river system. Snags are essential for creating a range of flow conditions, enabling a diversity of plants and animals to establish. They provide shade and shelter, and their gradual decay and trapping of leaf litter provides the food for many aquatic animals (e.g. frogs, crayfish, insects).

- Do not remove woody debris or snags from the river system. If a snag is completely blocking water flow seek advice on how to realign it to a 20 to 40 degree angle to the stream bank.
- Lop selected branches from snags near the water surface if they tend to trap debris and cause log jams.
- If the woody debris requires removal from the main stream channel, try relocating it to a position of low water velocity in the stream or place it on the outside of banks to improve stability.
- In streams which have been modified or degraded consider re-introducing woody debris into the stream system. Seek advice on the best way to undertake this.

Fertilisers, Chemicals, etc.

- Use only chemicals which are registered as suitable in watercourses as many animals are extremely sensitive to chemicals, even in light doses (e.g. pyrethrin is lethal to crayfish and lobsters).
- Time any fertiliser or chemical application to avoid periods of intense runoff. Instead of broadcast applications, try direct placement in the soil or place under a blanket of stubble mulching, etc.
- Trial the use of alternative 'environmentally friendly' applications, which may also be safer for stock and human health.

Managing Stock Access

Stock naturally favour wetlands and riversides and if poorly managed will completely degrade crossings, watering points and foul the water. This results in bank erosion, loss of plant species, soil compaction, weed invasion, and a build up of bacteria and viruses in the water. This polluted water then flows through the cave environment. If at all possible 'Keep Stock Out'.

- Fencing and smart planning will enable you to manage the riparian zone and your stock. Hanging fences, electric and electronic fences, drop fences and alternative watering points, even troughs, should be used depending on the situation.
- Timing, intensity and duration of stock in sensitive riparian zones can also be regulated to maintain the area.

Practice Minimal Impact Caving

- Keep to a single path throughout the cave and follow marked routes. Do not wander.
- Move slowly and carefully at all times, taking care where you place your hands, feet and body. Cave animals are small and cryptic and easily trampled.
- Where possible use routes which avoid interfering with fauna and sensitive habitats.
- Avoid trampling on wood and leaf litter, tree roots or other organic material.
- Avoid trampling on stream side sediment banks and step on solid rock surfaces where possible.
- Avoid walking in pools and small watercourses. Tiny hydrobiid snails are dependant on water clarity and are easily crushed in gravel.
- In medium and high flow stream passages walk in the stream bed in preference to stream side sediment banks or other fossil substrates. In low flow streams avoid walking in the stream bed, unless this causes greater degradation to stream side or other adjacent fossil substrates.
- Avoid making loud noises or shining lights directly onto cave creatures. Even invertebrates can 'stampede' and easily become dislodged, e.g. cave crickets become startled, dislodged and then trampled underfoot.
- Avoid breaking spider webs or entangling glow worm threads. These are sensitive structures and vital for catching food items.
- Do not leave any foreign material in the cave, including food scraps, human waste, batteries or spent carbide. Be prepared to carry it all out.
- Conform to restrictions on visits to caves or particular areas within caves. Several 'No-Go' fauna sanctuaries have been marked with string lines in south west caves.

Other Ways to Help

- Protect catchment areas surrounding caves, by formal reservation or active management. This could be done by establishing management agreements, conservation covenants, private reserves, etc. over significant privately owned karst.
- Be prepared for the cave environment with proper personal equipment and current weather forecasts relating to floods or changing conditions. If you are inexperienced, seek advice from the Earth Sciences Officer at Parks and Wildlife or any of the several Tasmanian caving organisations. Caves can be dangerous.

- If you live in a karst area or think you have holes or depressions resembling cave entrances, then contact the Earth Sciences Officer, Parks and Wildlife Service. Disappearing stream and water channels, sinkholes, etc. are typical features of karst areas.

More Information

Clarke, A. (1997). Management prescriptions for Tasmania's cave fauna. Report to Tasmanian RFA Environment and Heritage Technical Committee.

Eberhard, S. M., Richardson, A. M. M. and Swain, R. S. (1991). The Invertebrate Cave Fauna of Tasmania. Department of Zoology, University of Tasmania.

Parks and Wildlife Notesheet (1998). Cave Creatures and Cave Ecology. GPO Box 44A, Hobart, Tasmania, 7001.

1: 25 000 TASMAP sheets with known sites and potential habitat of threatened cave species

Specific cave localities are not given in this handbook but listed generally under the relevant mapsheet.

D'Aguilar	Dempster	Dobson	Gog
Gordonvale	Hastings	Leprena	Liena
Logan	Majors	Mole Creek	Olegas
Owen	Raminea	Serpentine	Tayatea
Tiger	Wylds		

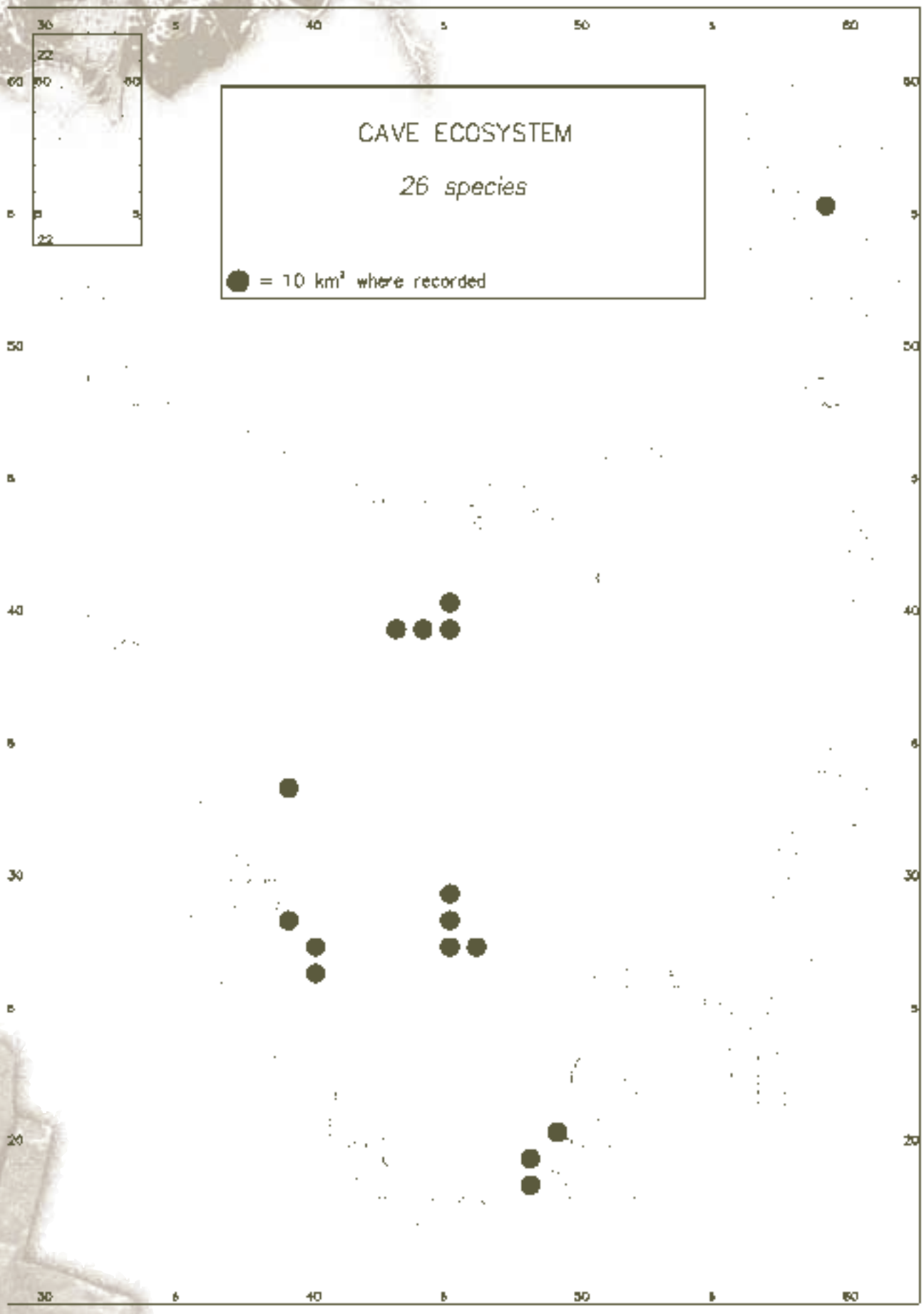
Ida Bay Cave Beetle

Blind Cave Beetle

Little Six Eyed Spider

Ida Bay Harvestman

Cave False Scorpion


CAVE ECOSYSTEM
26 species
= 10 km² where recorded

GREAT LAKE ECOSYSTEM (16 species)

Species found only in the Great Lake and immediate tributaries

[Illustrations from Smith and Kershaw 1981]

Status

Tasmania's *Threatened Species Protection Act 1995* - 9 listed species as shown in the table
Commonwealth *Endangered Species Protection Act 1992* - not listed

Other species

Tasmania's *Threatened Species Protection Act 1995* - not listed, but considered of high conservation significance
Commonwealth *Endangered Species Protection Act 1992* - not listed

Species	Distribution	Habitat	Tas. Status
Costora iena Great Lake caddis 1	Endemic to Great Lake area and Shannon River. Not collected since the 1930s	Weedy area of lake and tributaries	Extinct
Beddomia tumida Great Lake hydrobiid	Endemic to Great Lake near Helen Island	Unknown	Vulnerable
Glacidorba pawpela Great Lake snail	Endemic to Great Lake area, Elizabeth Bay and Brandum Bay	Benthos and soft sediments	Rare
Tasniphargus tyleri Great Lake amphipod	Endemic to Great Lake	Weed beds	Rare
Uramphisopus pearsoni Great Lake phreatoicid 1	Endemic to Great Lake, Brandum Bay	Lake benthos	Rare
Onchotelson brevicaudatus Great Lake phreatoicid 2	Endemic to Great Lake and Shannon Lagoon	Lake benthos	Rare
Onchotelson spatulatus Great Lake phreatoicid 3	Endemic to Great Lake, Elizabeth Bay	Lake benthos	Rare
Mesacanthotelson setosus Great Lake phreatoicid 4	Endemic to Great Lake, Shannon Lagoon, Swan Bay, Brandum Bay	Lake benthos	Rare
Mesacanthotelson tasmaniae Great Lake phreatoicid 5	Endemic to Great Lake	Deep sections of lake benthos	Rare
Asmicridea grisea Great Lake caddis 2	Great Lake area and Western Lakes	Weedy area of lake and tributaries	high cons. sig.
Ethochorema ithyphallicum caddisfly	Endemic to Roaring Creek and Strathgordon Area	Water bodies, including creek lines	high cons. sig.
Kimminsoperla biloba stonefly	Endemic to King William Saddle and Squires Creek	Trickles and waterways	high cons. sig.
Ancylastrum cumingianus planorbid limpet	Endemic to Great Lake, Shannon Lagoon, Lake St Clair and Mt Field	Muddy sediments around the shore	high cons. sig.
Paragalaxias dissimilis Shannon paragalaxias	Endemic to Great Lake, Shannon and Penstock Lagoon only	Most common around rocky shoreline	nominated for listing
Paragalaxias eleotroides Great Lake paragalaxias	Endemic to Great Lake, Shannon and Penstock Lagoons only	Most common at lake depths, also occurs around shoreline	nominated for listing
Triplectides elongatus Great Lake caddis 3	Waldheim, Great Lake, Bradys Lake, Andover and NSW	Weedy areas of lake and tributaries	high cons. sig.

Description

The Great Lake (and once associated Shannon Rise) was once one of Australia's most significant aquatic ecosystem, especially for its diversity of invertebrates. The Great Lake was originally shallow, consisting of several separate basins, and was probably a productive wetland. Damming of catchments and changes to water levels during the 1900s to generate hydro-electricity has destroyed much of the original ecosystem, so too has the introduction of trout for recreational angling. Loss of native fauna has occurred through predation, displacement and from the loss of habitat, especially chara beds (native *Chara* and *Nitella* weed - algae). Fulton's (1983) work showed that many fauna are restricted to or reliant on the chara beds for food, protection, and as

breeding and nursery sites. The chara beds were once extensive but now are restricted to areas of suitable depth and least exposure to prevailing winds. Retention and protection of these chara beds is integral to protecting the status of the Great Lake ecosystem.

While the Great Lake ecosystem is a shadow of its former status, it still contains over a dozen invertebrate species listed as having a significantly restricted range, including phreatoicids, caddisflies, amphipods and two endemic paragalaxias (native fish). Little is known of the biology of these animals. Several species are known only from the Great Lake. Some are still restricted to basins of the original lake or satellite lakes despite the raised water level. Two phreatoicid species (*Mesocanthotelson setosus* and *Onchotelson brevicaudatus*) now also occur in Shannon Lagoon, an artificial lake.

Phreatoicids and amphipods are small crustaceans (to about 10 mm long). The snail *Glacidorbis pawpela* has a small (3 to 4 mm diameter) flattened shell which is smooth and rounded and closed with an operculum (lid). *Beddomeia tumida* has a small conical shell. The Great Lake paragalaxias *Paragalaxias eleotroides* is golden brown on the back with irregular brown speckled patches down the side and pale yellow on the underside. Fins are generally a clear golden colour with black speckling along the rays. It is a small (rarely greater than 55 mm), bottom dwelling fish, preferring the greater depths of the lake where it usually feeds on small aquatic insect larvae. The Shannon paragalaxias *Paragalaxias dissimilis* is a larger native fish growing to about 75 mm and living around three years. This species prefers the rocky margins and shorelines of the lake. Adult markings are frequently masked by a general dark grey to black colouration all over the back and sides. After exposure to light the markings appear as a series of dark bands extending down the sides with occasionally five or six elliptical spots or small patches.

Key Threats

- Any inappropriate developments along the shoreline of the Great Lake or involving the water of the Great Lake which have not been environmentally assessed.
- Any changes in water level (e.g. due to hydro-electric operations, etc.) which may rapidly alter the water level and in turn affect the chara beds. The area of weed beds is already limited and provides much of the protection and food source for localised aquatic species.
- Any changes to water quality, such as turbidity, oxygen content, temperature, turbulence, pollution, etc.

Management Recommendations for Commercial Forestry

- Detailed recommendations are provided to Forest Practices Officers under the Forest Practices Code.

Habitat Management

Maintaining the integrity of the chara beds with a view to increasing their coverage is integral to retaining aquatic diversity in the Great Lake. Detailed environmental impact assessment (EIA) must be undertaken prior to any developments. An EIA should consider:

- Assessing the current status of Great Lake fauna and their distribution and habitat preference within the ecosystem.
- Options for encouraging a restoration or rehabilitation of the Great Lake ecosystem.
- The extent of shoreline and area available for chara weed bed expansion.
- Any potential changes in the water column due to draw down or the resultant lower water level may have significant effects on aquatic fauna. Aspects such as a change in thermal capacity and stratification of the water column, especially temperature, light regime, change in oxygen and other chemical constituents, turbulence, intensity of flushing through the water column, etc. will need to be determined.
- Aquatic fauna may be potentially affected by any changes or exposure to prevailing north westerly winds, either directly through increased shoreline exposure from a lower water level or via increased turbulence of dirty water inhibiting light filtration.

Other Ways to Help

- The Great Lake ecosystem offers huge potential and exciting challenges for restoration. Detailed surveys and information on aquatic invertebrates and macro algae are badly needed. If you have an interest in these areas, please contact the Inland Fisheries Commission, as surveys or research projects may be possible or underway.
- Please use care when boating on the lake system. Pollution via engine spills or garbage thrown into the waterway are a hazard to aquatic life.
- If you own property which borders the Great Lake, protect the surrounding native vegetation from clearing or fire, and minimise the drainage of pollutants and effluents into the lake.

More Information

Fulton, W. (1983). Qualitative and quantitative variation in the macrobenthic fauna of the original lake and new lake areas of Great Lake and Arthurs Lake, Tasmania. Australian Journal of Marine and Freshwater Research 34: 787-803.

Fulton, W. (1990). Tasmanian freshwater fishes. Fauna of Tasmania Handbook No 7. Department of Zoology, University of Tasmania, Hobart, Tasmania, 7001.

Inland Fisheries Commission, 6B Lampton Avenue, Derwent Park, Tasmania, 7009.

1: 25 000 TASMAP sheets with known sites and potential habitat

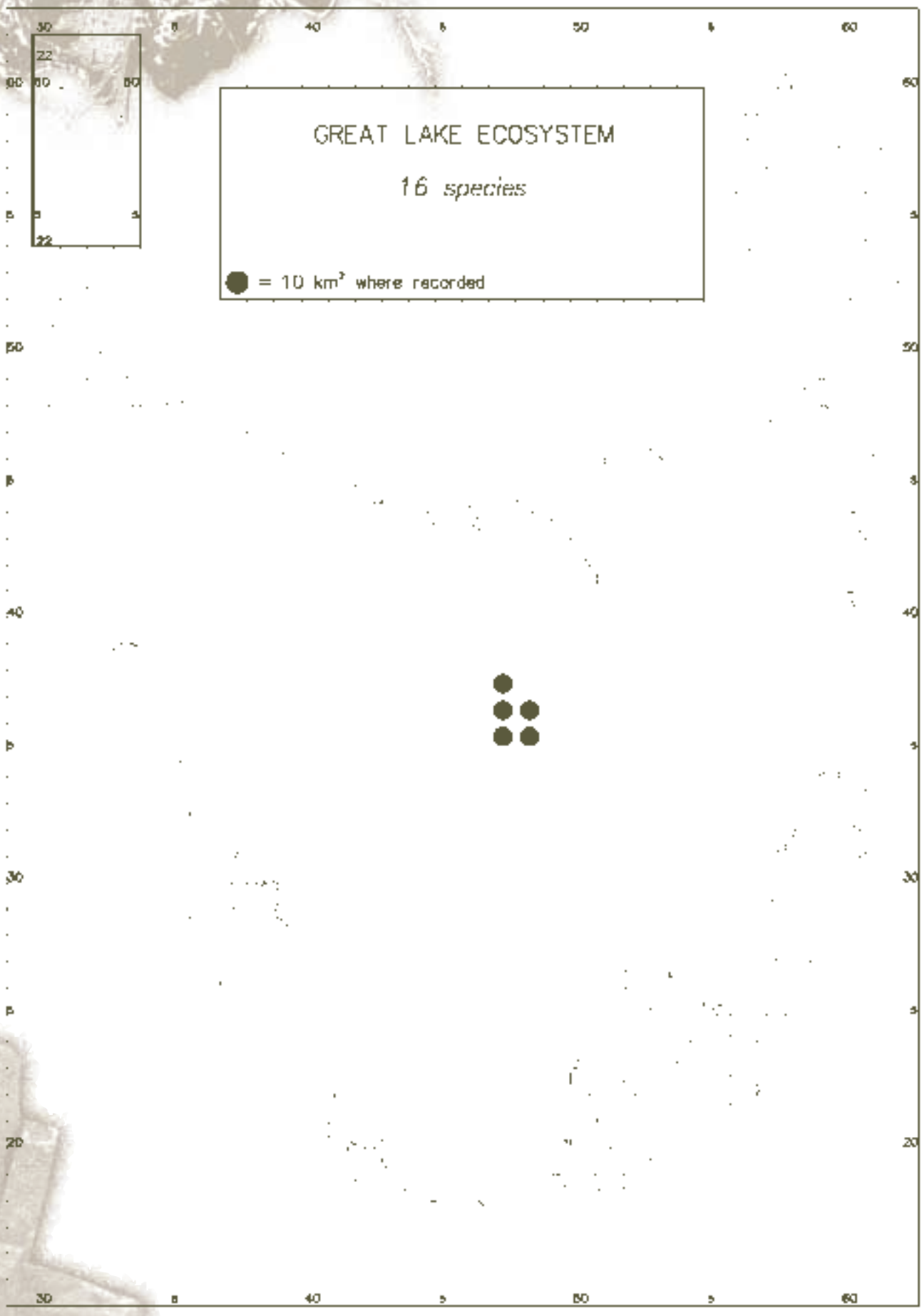
Arthurs Lake | Bradys Lookout | Breona | Miena
Poatina | Split Rock

Beddomeia tumida

Glacidorbis pawpela

Tasniphargus tyleri

Great Lake phreatoicid


GREAT LAKE ECOSYSTEM
16 species
= 10 km² where recorded

SECTION III

HABITAT OVERVIEW

Broad Habitat Types and some Animals they may Contain

This section provides a brief, broad overview of the main fauna habitats in Tasmania and some of the animal species they may contain. Much of this section is based on Bryant and Anderson (1999) which details more extensively the flora and fauna of Tasmania and its conservation priorities. The animal species listed in this section may not necessarily be confined to one habitat type, in fact, many animals are wide ranging across several habitats, or found in elements within habitats, e.g. decaying logs.

The species mentioned here include those discussed in Section II (except extinct species) as well as additional species of interest, including many endemic species which are of unknown conservation status. It is not an exhaustive list, merely a guide to what animals to expect when venturing out in Tasmania's many diverse areas.

For more extensive and detailed information on vegetation types, including their identification, conservation and management issues, please refer to the Tasmanian Bushcare Toolkit (Kirkpatrick and Gilfedder 1999) and the publication, Vegetation of Tasmania (Reid *et al*. 1999). A checklist of the vertebrate animals of Tasmania has been produced by Smith (1990).

HABITAT OVERVIEW

Alpine

Alpine vegetation is usually dominated by shrubs less than two metres tall, although some areas are dominated by grasses, cushion plants, mosses or aquatic plants. Treeless high altitude alpine vegetation usually occurs above 1000 m but can extend lower depending on environmental conditions such as frost and wind. In Tasmania alpine vegetation is most extensive on the Central Plateau and on the peaks and ranges of the west and southwest and contains a diversity of animal assemblages with marked Antarctic and Gondwanan affinities. Alpine ecosystems are among those most threatened by climatic warming and the most susceptible to damage from fire, recreational activities such as trampling, and the recently discovered 'cold tolerant' species of *Phytophthora*.

Threatened Alpine Animals

- *Dirce aesiodora* (pencil pine moth) - linked to pencil pine forests
- *Plesiothele fentoni* (alpine spider) - mossy boulders beside lakes

Other Alpine Animals of Interest

- *Archipetalia auriculata* (alpine dragonfly) - restricted habitat, little studied
- *Apteropanorpa tasmanica* (Tasmanian wingless scorpionfly) - also occurs in rainforest
- *Bryobatrachus nimbus* (moss froglet) - new endemic genus, specialist frog in mossy habitats
- *Niveoscincus orocryptus* (mountain skink) - restricted alpine locations, requires survey
- *Genus Chrysolarentia* (about 33 species of day-flying geometrid moths) - occur almost exclusively in alpine areas providing an outstanding example of speciation in a single genus of insects in a limited geographical area
- Several species of snow skink are found only in peaks and alpine areas of Tasmania. All are significant.

Rainforest

Temperate rainforest is broadly defined as forest vegetation in which myrtle beech *(Nothofagus cunninghamii),* deciduous beech *(Nothofagus gunnii)*, sassafras *(Atherosperma moschatum)*, King Billy pine *(Athrotaxis selaginoides)*, pencil pine *(Athrotaxis cupressoides)*, leatherwood *(Eucryphia spp.),* horizontal *(Anodopetalum biglandulosum)*, Huon pine *(Lagarostrobus franklinii),* celery-top pine *(Phyllocladus asplenifolius)* and Cheshunt pine *(Diselma archeri)* dominate the canopy either singly or in a variable mixture. Rainforest is most extensive in western Tasmania and the northeastern highlands, but occurs sporadically in many mountain ranges in eastern Tasmania.

Four major rainforest types and 38 distinct plant communities have been described, all having different requirements for their conservation and management. Callidendrous rainforest is dominated by 25 to 40 m high myrtle and/or sassafras with a park-like understorey. Thamnic (tree height 25 to 40 m) and Implicate (tree height below 20 m) rainforests have a lower canopy, dominated by *Nothofagus, Eucryphia* or native conifers, and a shrubby to densely matted understorey. Montane rainforests are characterised by a low, open canopy of *Athrotaxis cupressoides*, and/or *A. selaginoides* on a dense scrub understorey. The term 'Gallery Rainforest' is used to describe the narrow band of distinct and dense rainforest that forms along creek or river edges.

Rainforest is only capable of regenerating in the absence of any broad scale disturbance and occurs mainly in the fire protected, wet humid environments of the west and southwest regions, where the annual rainfall is greater than 1000 mm. It occurs at a wide range of elevations, topographical situations, aspects, and on most geological types. Rainforest covers approximately 765 000 ha or 11 % of the total land mass of Tasmania and is well reserved.

Threatened Rainforest Animals

- *Accipiter novaehollandiae* (grey goshawk) - loss of breeding habitat and persecution
- *Anoglypta launcestonensis* (northeast forest snail) - also occurs in mixed forest with rainforest elements

Other Rainforest Animals of Interest

- *Petroica rodinogaster* (pink robin) - prefers rainforest or forest with rainforest elements
- *Sericornis magnus* (scrubtit) - endemic bird preferring ground and leaf litter layer
- *Apteropanorpa tasmanica* (wingless scorpion fly) - also occurs in alpine areas
- *Paralamyctes* n. sp. (centipede)
- *Proditrix* n. sp. ('pandani' moth)
- *Sabatinca* n. sp. (primitive mandibulate moth)

Wet Eucalypt Forest

The wet eucalypt forests of Tasmania contain the tallest of any flowering plants in the world. Wet eucalypt forest comprises wet sclerophyll forest and mixed forest but can also include swamp forest and other variants. Wet sclerophyll forest is identified by having a tall stratum dominated by eucalypts with an understorey of broad-leaf shrubs. Mixed forest has an understorey of rainforest species and an over-storey of tall eucalypts which become sparse as the forest approaches maturity. Mixed forest is considered the last successional phase of the wet forest series and will progress to rainforest in the absence of fire.

Wet eucalypt forest can be divided into about 14 broad categories and over 60 floristic communities depending on the dominant eucalypt. Although dependent on fire for successful regeneration, wet eucalypt forests are maintained by a relatively long fire-free interval of between 100 to 350 years. They are also dependent on a high and reliable rainfall.

Swamp forests include closed forests on poorly drained, flat ground, which are dominated by a closed tree canopy of non-eucalypt species such as blackwood *Acacia melanoxylon*, teatree *Leptospermum* spp. or paperbark *Melaleuca* spp. Swamp forests differ from wet eucalypt and mixed forest in that fire is not essential for successional regeneration of the dominant canopy species. Six broad groups of swamp forest have been recognised and further subdivided into 29 communities on the basis of floristic similarity and environmental affinities. Extensive stands of swamp forest occur on the coastal lowlands of northwestern Tasmania, predominantly on the flat valley floors of the Duck, Montagu and Welcome Rivers.

Threatened Wet Eucalypt Animals

- *Accipiter novaehollandiae* (grey goshawk) - depends on wet forest, especially blackwood swamps
- *Aquila audax fleayi* (wedge-tailed eagle) - nests in wet forest but also dry sclerophyll habitat
- *Dasyurus maculatus* (spotted-tail quoll) - breeds and forages throughout wet forest
- *Lathamus discolor* (swift parrot) - also feeds and breeds in dry sclerophyll habitat
- *Austrochloritis victoriae* (southern hairy red snail) - wet forest or scrubland
- *Engaeus orramakunna* (Mt Arthur burrowing crayfish) - found in seepages in wet forest
- *Engaeus yabbimunna* (Burnie burrowing crayfish) - found in wet ferny glades near rivers
- *Helicarion rubicundus* (burgundy snail) - wet forest on Forestier and Tasman Peninsulas
- *Hoplogonus bornemisszai* (Bornemisszas stag beetle) - small range, wet forest specialist
- *Hoplogonus simsoni* (Simsons stag beetle) - small range, wet forest specialist
- *Hoplogonus vanderschoori* (Vanderschoors stag beetle) - small range, wet forest specialist
- *Lissotes latidens* (broad-toothed stag beetle) - occurs in isolated wet forest or wet patches
- *Lissotes menalcas* (Mt Mangana stag beetle) - occurs in isolated areas in southeast Tasmania
- *Ooperipatellus cryptus* (northwest velvet worm) - lives in logs in wet forest
- *Roblinella agnewi* (Mt Wellington snail) - leaf litter and rocks at high altitudes
- 'Skemps' snail (undescribed Charopid snail) - along creek lines in wet gullies in the northeast
- *Tasmanipatus anophthalmus* (blind velvet worm) - occurs in decaying logs in wet and dry habitats
- *Tasmanipatus barretti* (giant velvet worm) - occurs in decaying logs in wet forest elements
- *Tasmaphena lamproides* (keeled snail) - northwest and near offshore islands

Other Wet Eucalypt Animals of Interest

- *Cercartetus lepidus* (little pygmy possum) - status insufficiently known, forest species
- *Dasyurus viverrinus* (eastern quoll) - extinct on mainland Australia, breeds in wet and dry forest
- *Sarcophilus harrisii* (Tasmanian devil) - endemic, large territories and breeding range

- *Potorous tridactylus* (long-nosed potoroo) - status insufficiently known, requires survey
- *Isoodon obesulus* (southern brown bandicoot) - status unknown, requires survey
- *Sericornis magnus* (scrubtit) - endemic bird, restricted to ground and leaf litter layer in wet gullies
- *Calyptorhynchus funereus* (yellow-tailed black cockatoo) - requires large tree hollows for nesting
- Family Hepialidae - contains 15 species of primitive moths, many being endemic

Dry Sclerophyll Forest

Dry sclerophyll forests are identified structurally by the dominance of eucalypts more than five metres tall and a multi-layered understorey dominated by xerophytic shrubs usually less than eight metres tall. Six dry sclerophyll groups have been identified on the basis of the major understorey components and these are: heathy forests and woodlands, sedgey woodlands, shrubby forests, grassy woodlands, subalpine forests and woodlands, and *Allocasuarina verticillata* (previously *Casuarina stricta*) low forests.

Dry sclerophyll forests are formed under a variety of conditions and have evolved in response to low nutrient soils, periodic droughts and the prevalence of fire. They cover approximately 1.5 million ha and occur from lowland to upland regions in northern and eastern Tasmania and in the subalpine country of the southeastern Central Highlands. Dry sclerophyll forests contain a high diversity of plant and animal species and communities and subsequently form a major component of Tasmania's biodiversity. Approximately 27 of Tasmania's 29 eucalypt species (15 being endemic) and about half of the State's 1600 vascular plants occur in dry sclerophyll forests.

Threatened Dry Sclerophyll Animals

- *Acanthiza pusilla archibaldi* (King Island thornbill) - endemic to King Island scrubland
- *Aquila audax fleayi* (wedge-tailed eagle) - also occurs in wet eucalypt forest, nests and bird under threat
- *Dasyurus maculatus* (spotted-tail quoll) - breeds and forages throughout wet and dry forest
- *Lathamus discolor* (swift parrot) - also occurs in wet eucalypt forest and woodland, requires blue gum
- *Pardalotus quadragintus* (forty-spotted pardalote) - restricted to white gum forest and woodland
- *Antipodia chaostola* (Chaostola skipper) - dry open forests in the east
- *Austrochloritis victoriae* (southern hairy red snail) - localised on King Island
- *Lissotes latidens* (broad-toothed stag beetle) - occurs in isolated wet patches in dry forest
- *Miselaoma weldii* (Stanley snail) - scrub, open woodland and shrubbery on The Nut, Stanley
- *Schayera baiulus* (Schayers grasshopper) - isolated populations
- *Tasmanipatus anophthalamus* (blind velvet worm) - also occurs in logs in wet eucalypt forest
- *Tasmanipatus barretti* (giant velvet worm) - also occurs in logs in wet eucalypt forest

Other Dry Sclerophyll Animals of Interest

- *Aegotheles tasmanicus* (Australian owlet nightjar) - status unknown, breeds in hollows
- *Bettongia gaimardi* (Tasmanian bettong) - prefers poor quality gravelly soils with open understorey
- *Cercartetus lepidus* (little pygmy possum) - unknown status, forest species
- *Dasyurus viverrinus* (eastern quoll) - extinct on mainland Australia, breeds in wet and dry forest
- *Sarcophilus harrisii* (Tasmanian devil) - endemic, large territories and breeding range
- *Niveoscincus orocryptus diemensis* (mountain dragon) - unknown status, requires survey
- *Tyto novaehollandiae castanops* (masked owl) - requires old growth elements, e.g. tree hollows for nesting
- *Calyptorhynchus funereus* (yellow-tailed black cockatoo) - requires large tree hollows for nesting
- *Cryptops* n. sp. (centipede)
- *Discocharopa vigens* (snail)
- *Neopseudogarypus scutellatus* (pseudoscorpion)
- *Niceteria macrocosma* (geometrid moth)
- *Tasmanophilus* n. sp. (centipede)
- *Lissotes basilaris* ('Hobart' stag beetle) - localised around Hobart

Grassland and Grassy Woodland

Grassland and grassy woodland are two of Tasmania's most poorly reserved yet most severely threatened ecosystems. Lowland forms occur mainly in the eastern half of Tasmania, predominantly around Freycinet, the Midlands, and Ben Lomond regions. Highland grasslands occur mainly in the Central Highlands.

Grasslands are characterised by having a high diversity of herbaceous plants and are widespread on mainly deep, fertile soils in the drier parts of the State. Montane grasslands occur in altitudes greater than 600 m in the Central Plateau and northwest of Tasmania. They include important representatives of the Gondwanan element of flora as well as cosmopolitan genera. In highland areas *Poa labillardierei* and *P. gunnii* are dominant, whereas in areas below 600 m *Themeda triandra* is the dominant grass, with *Poa* species found in moist and poorly drained sites.

Highland tussock grassland is found on high altitude plains, usually composed of basalt or other base rich rocks. The most extensive areas are in the Surrey Hills, Vale of Belvoir, Middlesex Plains, Borradaile Plains in the northwest of the State, and on the medium elevation plains of the Central Plateau. There has been considerable conversion of highland silver tussock grassland to improved pasture in the last few decades, and most of its area is subject to stock grazing. Although a large proportion of the original area of the vegetation type survives, most is heavily invaded by exotic herbs, grasses and native shrubs.

Silver tussock is a narrow-leafed species that forms dense tussocks reaching about 1 m in height. While silver tussock survives well in even heavily grazed paddocks, the inter-tussock herbs are easily replaced by exotics. Silver tussock originally occurred on poorly-drained fertile flats, usually adjacent to streams or wetlands. It also occurred on sand dunes adjacent to wetlands and near the coast. In the Midlands of Tasmania silver tussock grasslands on river flats are highly valued as shelter for stock. Midlands remnants have high concentrations of threatened and unreserved plant species. This type of grassland usually occurs next to, or intermixed with, black gum woodland and forest.

Threatened Grassland and Grassy Woodland Animals

- *Lathamus discolor* (swift parrot) - also occurs in other forest types, needs blue gum
- *Pardalotus quadragintus* (forty-spotted pardalote) - linked exclusively to white gum forest and woodland
- *Perameles gunnii* (eastern-barred bandicoot) - naturally preferred habitat type, but adapted to others
- *Vombatus ursinus ursinus* (Bass Strait wombat) - only on Flinders Island woodland and scrub
- *Castiarina insculpta* (Miena jewel beetle) - historically in flowering tea tree scrubland at high altitudes
- *Catadromus lacordairei* (catadromus carabid beetle) - associated with basaltic clay soils in the Midlands
- *Chrysolarentia decisaria* (Tunbridge looper moth) - rediscovered at Tunbridge Lagoon in grassland
- *Fraus latistria* (broad-striped ghost moth) - found on sedges in heath or woodland
- *Oreixenica ptunarra* (ptunnara brown butterfly) - linked to *Poa* tussocks in grasslands

Other Grassland and Grassy Woodland Animals of Interest

- *Bettongia gaimardi* (Tasmanian bettong) - prefers poor quality gravelly soils with open understorey
- *Cisticola exilis* (golden headed cisticola) - naturally rare grassland bird on Bass Strait islands
- *Falco cenchroides* (Australian kestrel) - naturally rare, breeds and hunts in grassy woodlands
- *Pseudemoia pagenstecheri* (tussock skink) - insufficiently known status, grassland specialist
- *Pseudemoia rawlinsoni* (glossy grass skink) - insufficiently known status, grassland specialist
- *Corvus mellori* (little raven) - edge of range in northern Tasmania and Bass Strait islands, rare
- *Falco longipennis* (Australian hobby) - naturally rare in Tasmania
- *Coturnix pectoralis* (stubble quail) - insufficiently known status, grassy woodland specialist
- *Turnix varia* (painted button quail) - insufficiently known status, requires assessment
- *Lackrana carbo* (geometrid moth) - newly described species, more information required
- *Tornatellinops jacksonensis* (snail) - naturally rare litter snail in the Furneaux group

Wetlands

Wetlands are defined as areas that are inundated continuously, or on average for at least one month of the year and have some visible vegetation either above or below the water. They are usually treeless habitats dominated by aquatic herbs, sedges, reeds or rushes. Wetlands can be found surrounding streams or within streams and lakes. Wetlands may have dried out during drought conditions but will refill in normal rainfall periods. Wetlands can be areas of marsh, fen, peatland, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six metres. They are distributed across Tasmania from the coast to inland and at low and high altitudes.

Wetlands throughout Australia are a specific habitat subject to an international agreement (the Ramsar Convention) that deals with their protection and management. Tasmania has 91 wetlands listed in the *Directory of Important Wetlands in Australia* (Blackhall *et al.* 1996) and of these 10 are designated under the Ramsar Convention as being of international significance. The area surrounding Boullanger Bay-Robbins Passage in Tasmania's northwest is shortly to be considered for international recognition.

Tasmania's Wetlands of International Significance (Ramsar Sites)

- 'The Chimneys' Ringarooma Marshes - Ringarooma - 90 ha - private land.
- Apsley Marshes - Bicheno - 600 ha - private land.
- East Coast Cape Barren Island Lagoons - 4230 ha - Crown Land.
- Jocks Lagoon - St Helens - 10 ha - private land.
- Little Waterhouse Lake - 90 ha - northeast coast - Reserve.
- Logan Lagoon - 2320 ha - Logan Lagoon Conservation Area ('Wildlife Sanctuary') - Flinders Island.
- Moulting Lagoon - 3930 ha - Moulting Lagoon Game Reserve - Freycinet.
- Northwest Corner of Lake Crescent - 270 ha - Interlaken - Crown (Lakeside) Reserve.
- Pittwater - Orielton Lagoon - 2920 ha - Crown land - Sorell.
- Sea Elephant Conservation Area - 1730 ha - Lavinia Nature Reserve - King Island.

Tasmania's Wetlands of National Significance

- Douglas River - 100 ha - Douglas Apsley National Park - (inc. Register of the National Estate).
- Eagle Tarn Sphagnum - 1 ha - Mt Field National Park - (inc. Register of the National Estate).
- Freshwater Lagoon - 14 ha - Freycinet National Park.
- Granton Lagoon - (Gould's Lagoon Wildlife Sanctuary) - 3 ha - River Derwent - Conservation Area - (inc. Register of the National Estate).
- Lake Dulverton Wildlife Sanctuary - 200 ha - Conservation Area - listed on the Register of the National Estate.
- Lake Surprise -25 ha - Southwest National Park - listed on the Register of the National Estate - World Heritage Area.
- Lake Sydney - 10 ha - Southwest National Park - listed on the Register of the National Estate - World Heritage Area.
- Lake Tiberius Game Reserve - 900 ha - Oatlands - (inc. interim Register of the National Estate).
- Logan Lagoon - 700 ha - Flinders Island -Conservation Area ('Wildlife Sanctuary') - listed on the Register of the National Estate - Ramsar site.
- Maria Island Marine Reserve - 1500 ha - Maria Island National Park - listed on the Register of the National Estate.
- Moulting Lagoon - 3930 ha - Swansea Moulting Lagoon Game Reserve - listed on the Register of the National Estate, Ramsar site.
- Mt Rufus Sphagnum - 1 ha - Central Plateau - Cradle Mountain Lake St Clair National Park - World Heritage Area.
- Oyster Cove - 25 ha - Oyster Cove Historic Site - listed on the Register of the National Estate.
- River Derwent Wildlife Sanctuary - 550 ha - Dromedary - Conservation Area - listed on the Register of the National Estate.
- Rocky Cape - 100 ha - Rocky Cape National Park - listed on the Register of the National Estate.
- Sea Elephant Nature Reserve - 1730 ha - King Island - Lavinia Nature Reserve - listed on the Register of the National Estate, Ramsar site.
- Shadow Lake Sphagnum - 1 ha - Derwent Bridge - Cradle Mountain Lake St Clair National Park - listed on the Register of the National Estate -World Heritage Area.
- South East Cape - 10 ha - South-west National Park - listed on the Register of the National Estate - World Heritage Area.
- Syndicate Lagoon - 1 ha - Flinders Island - Conservation Area.
- Township Lagoon Nature Reserve - 15 ha - Tunbridge.

Tasmania's wetlands are divided into 14 structural types based on the dominant macrophyte. They contain over 300 plant species, the natural distribution of which are correlated with differences in water permanence, salinity and acidity. However, only one quarter of the State's natural wetlands have been surveyed, with a high proportion of this data being on shallow lentic waters. Tasmania's wetlands represent every national wetland classification except for coral reefs and salt exploitation pans. This diversity, coupled with Tasmania's geographic isolation, has resulted in a high rate of endemism, making the State's wetlands especially interesting and valuable to science. Unfortunately, very few of the listed wetlands are formally protected.

Threatened Wetland Animals

- *Galaxiella pusilla* (dwarf galaxias) - prefers swampy backwaters
- *Litoria raniformis* (green and gold frog) - global and local declines
- *Podiceps cristatus* (great-crested grebe) - traditional breeding site lost

Other Wetland Animals of Interest

- *Anas rhynchotis rhynchotis* (Australasian shoveller) - suspected decline in numbers across Tasmania
- *Aythya australis* (hard head duck) - suspected decline in numbers across Tasmania

- *Botaurus poiciloptilus* (Australasian bittern) - insufficiently known, cryptic species
- *Gallinago hardwickii* (Lathams snipe) - international migrant requires monitoring
- *Circus approximans* (swamp harrier) - requires monitoring as subject to threats like clearing of grasslands
- *Crinia tasmaniensis* (Tasmanian froglet) - endemic froglet
- *Oxyura australis* (blue-billed duck) - naturally rare species
- *Gallirallus tenebrosa* (dusky moorhen) - naturally rare species
- *Litoria burrowsae* (Tasmanian tree frog) - endemic frog
- *Milvus sphenurus* (whistling kite) - edge of species natural range in Tasmania
- *Nycticorax caledonicus* (rufous night heron) - edge of species natural range in Tasmania
- *Pseudomoia rawlinsoni* (glossy grass skink) - insufficiently known species, requires survey
- internationally ranging birds that visit wetlands, e.g. cattle egret, great egret, etc., are also significant

Saltmarsh

Saltmarsh occurs in places that are periodically inundated by the sea, but where wave action is subdued. Consequently, saltmarsh is largely confined to estuaries and inlets. Near the mouths of estuaries and inlets, where the inundating water is highly saline, saltmarshes are largely dominated by succulent herbs and shrubs. Where inflowing rivers and streams make the water less saline, then tussock rushes, tussock sedges, tussock grasses and non-succulent herbs are more prominent. Saltmarsh is poorly-reserved in Tasmania. Some owners of saltmarsh have attempted to drain them for agricultural use. This usually results in salt-scalded bare ground.

Threatened Saltmarsh Animals

- *Amelora acontistica* (chevron looper moth) - saltmarsh vegetation in Cremorne and Launderdale areas
- *Dasybela achroa* (saltmarsh looper moth) - saltmarsh vegetation in the Launderdale area
- *Haloniscus searlei* (salt lake slater) - found around Tunbridge area on salt lakes

Karst, Caves and Cliffs

Karst areas are landscapes where landforming processes are dominated by solution of the bedrock. Tasmania has Australia's highest proportion of land subject to karst processes, their boundaries determined by the presence of carbonate rocks and their hydrological catchments.

An abundance of highly sheltered sites such as sinkholes, cave entrance zones, cliffs and overhangs, creates refugia from environmental extremes such as fire and drought, resulting in ideal conditions for relict animal species. Sub-surface drainage systems and associated cave systems provide habitat for many rare and endemic invertebrate, microbial and fungal species and shelter for terrestrial vertebrates. Most Tasmanian caves have developed in Ordovician limestone, upper Pre-Cambrian and lower Cambrian dolomites and limestones. Some caves also develop in non-carbonate rocks including sea caves, soil piping tunnels, caves behind waterfalls, boulders and other weathering rocks. Magnesite karst, rare at the international level, is found in the catchments of the Arthur and Pieman Rivers.

Tasmanian caves have been shown to support a diverse invertebrate fauna with the richest cave faunal assemblages in temperate Australia. To date karst features including more than 1000 caves, have been recognised from over sixty areas in Tasmania. Their documentation is far from complete and experts suggest that there are probably more than 4000 caves and karst areas in Tasmania. Surveys have identified about 650 species of invertebrates in Tasmanian caves, representing 179 families and 271 genera but the total diversity is suspected to be even greater. Obligate cave species (particularly troglobites) are highly specialised (e.g. loss or reduction of eyes and pigment) and particularly sensitive to any change in the cave environment or inflowing streams.

Threatened Karst, Cave and Cliff Animals

- *Niveoscincus palfreymani* (Pedra Branca skink) - lives in rock crevices on one island
- *Echinodillo cavaticus* (Flinders Island cave slater) - obligate cave species
- *Goedetrechus mendumae* (blind cave beetle) - obligate cave species
- *Goedetrechus parallelus* (slender cave beetle) - obligate cave species
- *Hickmanoxyomma cavaticum* (Ida Bay harvestman) - obligate cave species
- *Hickmanoxyomma gibbergunyar* (harvestman) - obligate cave species
- *Idacarabus cordicollis* (roughed necked cave beetle) - obligate cave species
- *Idacarabus troglodytes* (Ida Bay cave beetle) - obligate cave species

- *Micropathus kiernani* (Kiernans cricket) - obligate cave species
- *Olgania excavata* (little six eyed spider) - obligate cave species
- *Parvotettix rangaensis* (Ranga cave cricket) - cave cricket in Furneaux group
- *Pseudotyrannochthonius typhlus* (pseudoscorpion) - obligate cave species
- *Tasmanotrechus cockerilli* (Cockerills cave beetle) - obligate cave species

Other Karst, Cave and Cliff Animals of Interest

All cave species are of high conservation significance

- *Arachnocampa tasmaniensis* (glow worm) - highly specialised creatures in karst and dark sites
- *Falco peregrinus* (peregrine falcon) - requires monitoring - nests on cliff faces and subject to persecution

Moorland, Heathland, Peatland and Sphagnum

Moorland broadly describes treeless vegetation dominated by heaths, sedges and typically containing the tussock sedge, buttongrass *Gymnoschoenus sphaerocephalus*. Tasmania's buttongrass moorlands have formed on nutrient deficient and poorly drained soils and are widespread in western and southwestern Tasmania. They comprise a mosaic of sedgeland, heathland, graminoid and scrub and appear similar in terms of vegetative morphology to the moorlands on mainland Australia and throughout the world. Approximately 165 vascular plant species from 46 families are considered typical of buttongrass moorlands, the most common families being the Epacridaceae, Myrtaceae, Apiaceae, Proteaceae, Cyperaceae, Poaceae and Restionaceae. Buttongrass moorlands have been classified into two main groups: Blanket Moor with 15 communities in western Tasmania, and Eastern Moor with 10 communities in the east of the State, each of which have highland and lowland forms.

Heath is vegetation with shrubs less than two metres tall and a canopy cover greater than 30 %. There are about 37 distinct heathland communities. Most lowland heath is found close to the coast. Small areas are occasionally found in poorly-drained inland situations and on inland rock plate hill tops. Heathland and buttongrass moorlands overlap in many of their components especially the graminoid heath communities. Buttongrass moorland is a vegetation type of poorly drained and infertile soils. It covers a large proportion of lowland western Tasmania, and extends to poorly drained sandy areas elsewhere in the State. It is less than two metres tall and is dominated by hummocks of buttongrass, with a rich mixture of shrubs, other sedges and rushes in-between. Like buttongrass moorland, heath is floristically variable but usually contains plant members in the families Epacridaceae, Myrtaceae, Proteaceae and Fabaceae. Heaths are most common in the alpine or treeless high country and usually occur in narrow strips flanked by eucalypt communities in coastal situations. Inland heathy communities in northeastern Tasmania have been extensively cleared and drained for agriculture and are of high conservation significance.

Shallow organic peatlands cover extensive areas throughout the wetter parts of western Tasmania. They form beneath most vegetation types and are divided into bogs and fens depending on the water chemistry and water source. Peatlands dominated by *Sphagnum* moss generally occur at altitudes above 600 metres in infertile areas with high rainfall and a low evaporation rate. *Sphagnum* moss grows at sites where drainage is impeded such as in river valleys, adjacent to lakes and streams or on sandstone shelves.

Sphagnum is defined by more than 30% cover of mounds of sphagnum (usually *Sphagnum cristatum*) in one layer. In most sphagnum areas in Tasmania there is a substantial shrub or tree layer above the moss. Sphagnum bogs occur in constantly wet, but flushed, areas of moderate fertility. Only a small part of the area of sphagnum bog in Tasmania is on private land. Much of this area has been mined for peat or harvested for the moss. While sphagnum bog as a whole is well reserved, the lower altitude bogs, some of which are on private land, are poorly reserved and distinct in their species' composition.

Threatened Moorland, Heathland, Peatland and Sphagnum Animals

- *Neophema chrysogaster* (orange-bellied parrot) - feeding and migratory habitat, southwest and west coast
- *Pseudomys novaehollandiae* (New Holland mouse) - prefers coastal heaths in eastern Tasmania
- *Vombatus ursinus ursinus* (Bass Strait wombat) - only found on Flinders Island heath and scrub
- *Allanaspides hickmani* (Hickmans pygmy mountain shrimp) - found in pools in swampy peatlands
- *Engaeus spinicaudatus* (Scottsdale burrowing crayfish) - burrows into wet sediments in heath and peat
- *Fraus latistria* (broad-striped ghost moth) - found on sedges in heath or woodland
- *Migas plomleyi* (Plomleys trapdoor spider) - moss on boulders near Launceston
- *Pasmaditta jungermanniae* (Jungermans snail) - moss boulders in wet forest near Launceston
- *Plesiothele fentoni* (Lake Fenton trapdoor spider) - lives in moss on boulders
- *Schayera baiulus* (Schayers grasshopper) - found in coastal heath and grassland

Other Moorland, Heathland, Peatland and Sphagnum Animals of Interest

- *Mastacomys fuscus* (broad-toothed rat) - restricted habitat requirements, prefers old age sedgeland
- *Pezoporus wallicus* (ground parrot) - unusual ground dwelling bird, threatened on mainland Australia
- *Stipiturus malachurus* (southern emu wren) - specialist restricted to heath and sedgeland
- *Calamanthus fuliginosus* (striated field wren) - specialist restricted to heath and sedgeland
- *Phylidonyris melanops* (tawny crowned honeyeater) - specialist preferring coastal heathland
- *Archipetalia auriculata* (alpine dragonfly) - specialist in this habitat
- *Synthemis macrostigma* (swamp dragonfly) - specialist in this habitat

Freshwater and Riparian

Tasmania has an abundance of freshwater streams, rivers, lakes and tarns, throughout the west, southwest and central parts of the State, and especially in the Central Highlands. Lowland plains, small in area and largely discontinuous, are traversed by a series of small rivers, of which the largest are the Derwent, Tamar, Huon and Gordon River systems. The physical characteristics of these rivers, such as flow rate, turbidity, acidity and substrate type, differ markedly.

Water passing through most western and southern rivers contains high percentages of tannin from buttongrass which reduces light penetration and inhibits the growth of algae and other aquatic plants. Of the 17 native fish species that have mainly freshwater habits, 11 are endemic to Tasmania. Other fish also enter freshwater but these are either marine or migratory fish that have a distinct freshwater and marine stage in their life history, e.g. Australian grayling.

Riparian vegetation refers to vegetation in the riverine environment directly influenced by the presence of water which is part of a river, stream or creek line. Riparian vegetation is an important component of Tasmania's natural landscape for biological and ecological reasons and has become the last refuge for a number of species. The aquatic vegetation of streams and rivers merges into marginal herbfield, heath or scrub within the zone of normal fluctuations of water levels. The species composition of macrophytic aquatic communities is limited but rich in specialised Tasmanian endemics such as *Oreomyrrhis gunni* (carraway) and *Epilobium perpusillum* (willowherb).

Threatened Freshwater and Riparian Animals

- *Galaxias fontanus* (Swan galaxias) - restricted to east coast
- *Galaxias johnstoni* (Clarence galaxias) - restricted distribution
- *Galaxias pedderensis* (Pedder galaxias) - very restricted distribution
- *Galaxias tanycephalus* (saddled galaxias) - endemic lake species
- *Galaxiella pusilla* (dwarf galaxias) - prefers swampy backwaters
- *Prototroctes maraena* (Australian grayling) - found on margins of sea entries
- *Astacopsis gouldi* (giant freshwater lobster) - endemic to rivers across northern Tasmania
- *Beddomeia angulata* (hydrobiid snail)
- *Beddomeia averni* (hydrobiid snail)
- *Beddomeia bellii* (hydrobiid snail)
- *Beddomeia bowryensis* (hydrobiid snail)
- *Beddomeia briansmithi* (hydrobiid snail)
- *Beddomeia camensis* (hydrobiid snail)
- *Beddomeia capensis* (hydrobiid snail)
- *Beddomeia fallax* (hydrobiid snail)
- *Beddomeia forthensis* (hydrobiid snail)
- *Beddomeia franklandensis* (hydrobiid snail)
- *Beddomeia fromensis* (hydrobiid snail)
- *Beddomeia fultoni* (hydrobiid snail)
- *Beddomeia gibba* (hydrobiid snail)
- *Beddomeia hallae* (hydrobiid snail)
- *Beddomeia hermansi* (hydrobiid snail)
- *Beddomeia hullii* (hydrobiid snail)
- *Beddomeia inflata* (hydrobiid snail)
- *Beddomeia kershawi* (hydrobiid snail)
- *Beddomeia kessneri* (hydrobiid snail)
- *Beddomeia krybetes* (hydrobiid snail)

- *Beddomeia launcestonensis* (hydrobiid snail)
- *Beddomeia lodderi* (hydrobiid snail)
- *Beddomeia mesibovi* (hydrobiid snail)
- *Beddomeia minima* (hydrobiid snail)
- *Beddomeia petterdi* (hydrobiid snail)
- *Beddomeia phasianella* (hydrobiid snail)
- *Beddomeia protuberata* (hydrobiid snail)
- *Beddomeia ronaldi* (hydrobiid snail)
- *Beddomeia salmonis* (hydrobiid snail)
- *Beddomeia tasmanica* (hydrobiid snail)
- *Beddomeia topsiae* (hydrobiid snail)
- *Beddomeia trochiformis* (hydrobiid snail)
- *Beddomeia tumida* (Great Lake hydrobiid snail)
- *Beddomeia turnerae* (hydrobiid snail)
- *Beddomeia waterhouseae* (hydrobiid snail)
- *Beddomeia wilmotensis* (hydrobiid snail)
- *Beddomeia wiseae* (hydrobiid snail)
- *Beddomeia zeehanensis* (hydrobiid snail)
- *Costora iena* (Great Lake caddisfly)
- *Diplectrona castanea* (caddisfly)
- *Diplectrona lyella* (caddisfly)
- *Diporochaeta pedderensis* (Lake Pedder earthworm) - occurs in the sediments around shoreline
- *Ecnomina vega* (caddisfly)
- *Glacidorbis pawpela* (Great Lake hydrobiid snail)
- *Hydrobiosella armata* (caddisfly)
- *Hydrobiosella sagitta* (caddisfly)
- *Hydroptila scamandra* (caddisfly)
- *Leptocerus souta* (caddisfly)
- *Mesacanthotelson setosus* (Great Lake phreatoicid)
- *Mesacanthotelson tasmaniae* (Great Lake phreatoicid)
- *Oecetis gilva* (caddisfly)
- *Onchotelson brevicaudatus* (Great Lake phreatoicid)
- *Onchotelson spatulatus* (Great Lake phreatoicid)
- *Orphninotrichia maculata* (caddisfly)
- *Orthotrichia adornata* (caddisfly)
- *Oxyethira mienica* (caddisfly)
- *Phrantela annamurrayae* (hydrobiid snail)
- *Phrantela conica* (hydrobiid snail)
- *Phrantela marginata* (hydrobiid snail)
- *Phrantela pupiformis* (hydrobiid snail)
- *Ramibeithrus kocinus* (caddisfly)
- *Stenopsychodes lineata* (caddisfly)
- *Tasimia drepana* (caddisfly)
- *Taskiria mccubbini* (Lake Pedder caddisfly)
- *Taskiropsyche lacustris* (Lake Pedder caddisfly)
- *Tasniphargus tyleri* (Great Lake amphipod)
- *Uramphisopus* n. sp. (Lake Pedder phreatoicid)
- *Uramphisopus pearsoni* (Great Lake phreatoicid)

Other Freshwater and Riparian Animals of Interest

- *Ceyx azurea* (azure kingfisher) - naturally rare species restricted to riparian zone
- *Galaxias parvus* (swamp galaxias) - naturally restricted, nominated as threatened
- *Galaxias auratus* (golden galaxias) - naturally restricted, nominated as threatened
- *Galaxias cleaveri* (Tasmanian mudfish) - naturally restricted unusual species

- *Ornithorhynchus anatinua* (platypus) - icon animal of Tasmania's waterways
- *Paragalaxias eleotroides* (Shannon paragalaxias) - naturally restricted, nominated as threatened
- *Paragalaxias julianus* (western paragalaxias) - naturally restricted, nominated as threatened
- *Paragalaxias mesotes* (Arthurs paragalaxias) - naturally restricted in Arthurs Lake, threatened

These species all have very restricted distributions.

- *Aphilorheithrus luteolus* (caddisfly)
- *Archaeophylax vernalis* (caddisfly)
- *Astacopsis franklinii* (eastern freshwater lobster) - waterways in eastern Tasmania
- *Astacopsis tricornis* (southern freshwater lobster) - waterways in the south and west of Tasmania
- *Caloca* n. sp. (caddisfly)
- *Cardioperla* n. sp. (stonefly)
- *Conoesucus* n. sp. (caddisfly)
- *Diplectrona* n. sp. (caddisfly)
- *Ecnomina* n. sp. (caddisfly)
- *Ethochorema ithyphallicum* (caddisfly)
- *Eusthenia reticulata* (stonefly)
- *Hydrobiosella orba* (caddisfly)
- *Kimminsoperla biloba* (stonefly)
- *Nanocochlea monticola* (hydrobiid snail)
- *Nanocochlea parva* (hydrobiid snail)
- *Nanocochlea pupoidea* (hydrobiid snail)
- *Nanocochlea monticola* (hydrobiid snail)
- *Nanoplectrus truchanasi* (caddisfly)
- *Neboissoperla* n. sp. (stonefly)
- *Oecetis umbra* (caddisfly)
- *Phrantela kutikina* (hydrobiid snail) - in cave ecosystems
- *Phrantela richardsoni* (hydrobiid snail)
- *Phrantela umbilicata* (hydrobiid snail)
- *Poecilochorema circumvoltum* (caddisfly)
- *Poecilochorema evansi* (caddisfly)
- *Pseudotricula eberhardi* (hydrobiid snail) - in cave ecosystems
- *Reikoperla* n. sp. (stonefly)
- *Smicrophylax simplex* (caddisfly)
- *Taschorema* n. sp.(caddisfly)
- *Tasmanoplegas* n. sp. (caddisfly)
- *Tasmanthrus* n. sp. (caddisfly)
- *Yulia yuli* (amphipod)

Coastal

Coastal vegetation is defined by its occurrence on well drained soils and the dominance of plant species that are confined to the coastal zone. The most common of these are coastal fescue *Austrofestuca littoralis*, coastal spinifex *Spinifex sericeus*, blue daisy-bush *Leucophyta brownii*, boobyalla *Acacia sophorae*, coastal beard-heath *Leucopogon parviflorus,* and coastal teatree *Leptospermum laevigatum.*

Tasmania has approximately 5400 km of coastline, more coastline per unit area than any other state in Australia. All coastal water-covered land within the 3 mile limit is Crown Land and 83% of the adjacent land is variously classified. Coastal vegetation contains species with morphological or physiological adaptations to salt spray and generally occurs along coastlines, around offshore islands and enclosing estuaries, coastal lagoons and salt marshes. The vegetation types are extremely diverse and form part of a fragile and dynamic ecosystem. The plant communities and areas that comprise coastal habitat include: coastal woodlands and forests, tidal flats including salt marshes, dunes, coastal sheets and sand ridges incorporating closed herbfields or marsupial lawns, heathlands, and cliffs and rocky coasts.

Salt marshes and saline wetlands are most extensive on coasts in the southeast, far northwest and Bass Strait Islands but are also associated with drainage basins in the Midlands. Coastal fauna such as seabirds and wading birds are often dependent on the dunes and fore-dunes for breeding sites and on the littoral zones, tidal mudflats and estuaries for foraging. Seals haul-out and breed on many rocky platforms.

There are approximately 440 vascular plants recorded in coastal vegetation (excluding Macquarie Island), comprising about 12 % of the State's flora. Species closest to the coast and on unstable substrate are usually succulents in the families Chenopodiaceae, Aizoaceae and Poaceae. Some species such as *Cakile* sp. and *Sarcocornia* sp. have seeds adapted to seawater and they recolonise the coastline using currents and tides. Tasmania has thirteen endemic vascular plants which are more or less restricted to the coast, four occur in the World Heritage Area.

Threatened Coastal Animals

- *Arctocephalus forsteri* (New Zealand fur seal) - haul-outs around the coast
- *Lathamus discolor* (swift parrot) - breeds mainly down the east coast
- *Neophema chrysogaster* (orange-bellied parrot) - restricted migration path up the west coast
- *Pardalotus quadragintus* (forty-spotted pardalote) - confined to narrow east coast strip
- *Pseudomys novaehollandiae* (New Holland mouse) - prefers coastal heathy areas
- *Pterodroma mollis* (soft-plumage petrel) - breeds on coasts of near offshore islands
- *Sterna albifrons sinensis* (little tern) - breeding colonies on beaches under threat
- *Sterna nereis* (fairy tern) - breeding colonies on beaches under threat
- *Sterna striata* (white-fronted tern) - breeds on coasts of near offshore islands
- *Thinornis rubricollis* (hooded plover) - nests on sandy oceanic beaches

Other Coastal Animals of Interest

- *Arctocephalus pusillus* (Australian fur seal) - haul-outs around the coast
- *Eudyptula minor* (little penguin) - threatened colonies around the coast, requires management
- *Haematopus longirostris* (pied oystercatcher) - declining numbers due to disturbance while nesting
- *Heliaeetus leucogaster* (white-bellied sea-eagle) - declining species with nests and adults under threat
- *Lerista bougainvilli* (Bouganvilles skink) - naturally rare species, edge of range
- *Mirounga leonina* (Southern elephant seal) - haul-outs around the coast
- *Morus serrator* (Australasian gannet) - past threats to breeding colonies
- *Phylidonyris melanops* (tawny-crowned honeyeater) - coastal heathland specialist
- *Puffinus tenuirostris* (short-tailed shearwater) - coastal colonies impacted
- 4-dentate sandhopper B (amphipod) - naturally rare species
- *Pupilla australis* (snail) - naturally rare species
- *Tasmanoplectron isolatum* (cricket) - naturally rare species
- *Tornatellinops jacksonensis* (snail) - naturally rare species

All birds listed under the JAMBA and CAMBA agreements are significant. This includes most international migratory birds and nationally listed threatened birds.

- *Limosa lapponica* (bar-tailed godwit) - JAMBA, CAMBA
- *Sterna caspia* (caspian tern) - JAMBA, CAMBA
- *Calidris ferruginea* (curlew sandpiper) - JAMBA, CAMBA
- *Numenius madagascariensis* (eastern curlew) - JAMBA, CAMBA
- *Puffinus carneipes* (fleshy-footed shearwater) - JAMBA
- *Calidris tenuirostris* (great knot) - JAMBA, CAMBA
- *Tringa nebularia* (greenshank) - JAMBA, CAMBA
- *Pluvialis squatarola* (grey plover) - JAMBA, CAMBA
- *Tringa brevipes* (grey-tailed tattler) - JAMBA, CAMBA
- *Pluvialis dominica* (lesser golden plover) - JAMBA, CAMBA
- *Charadrius mongolus* (lesser sand plover (Mongolian)) - JAMBA, CAMBA
- *Calidris melanotos* (pectoral sandpiper) - JAMBA
- *Calidris canutus* (red knot) - JAMBA, CAMBA
- *Calidris ruficollis* (red-necked stint) - JAMBA, CAMBA
- *Arenaria interpres* (ruddy turnstone) - JAMBA, CAMBA

- *Puffinus griseus* (sooty shearwater) - JAMBA, CAMBA
- *Tringia terek* (terek sandpiper) - JAMBA, CAMBA
- *Numenius phaeopus* (whimbrel) - JAMBA, CAMBA

Near Islands and Marine

Around the Tasmanian coast there are approximately 600 named islands, rocks or reefs. About 350 of these are true islands (i.e. the majority of the land mass lies above the high water mark), many supporting flora and fauna of conservation significance including breeding populations of seabirds and seals. The Bass Strait islands include the larger King Island and Flinders Island and those belonging to the Furneaux, Fleurieu, Hogan, Curtis and Kent groups, the most northerly being Rodondo and West Moncoeur. Southerly islands include Maatsuyker, Mewstone, Pedra Branca and others in the southwest region, followed by Tasmania's only sub-Antarctic region, Macquarie Island. The west and southwest coasts and islands are the most exposed and rugged in Tasmania, experiencing the wind blasts of the 'roaring forties'. The milder climate of Tasmania's east coast shows marked contrast on Maria Island, Bruny Island and headlands and pensinulas like Freycinet where species differ significantly from the west.

Threatened Near Island and Marine Animals

- *Acanthiza pusilla* (King Island brown thornbill) - restricted to King Island scrubland
- *Arctocephalus forsteri* (New Zealand fur seal) - breeds and hauls-out around the coast
- *Balaenoptera borealis* (sei whale) - global declines
- *Balaenoptera musculus* (blue whale) - global declines
- *Balaenoptera physalus* (fin whale) - global declines
- *Brachionichthys hirsutus* (spotted handfish) - declining isolated colonies under threat
- *Caretta caretta* (loggerhead turtle) - global declines
- *Chelonia mydas* (green turtle) - global declines
- *Dermochelys coriacea* (leathery turtle) - global declines
- *Diomedea cauta* (shy albatross) - threatened by longlining
- *Eretmochelys imbricata* (hawksbill turtle) - global declines
- *Eubalaena australis* (southern right whale) - global declines
- *Megaptera novaengliae* (humpback whale) - global declines
- *Niveoscincus palfreymani* (Pedra Branca skink) - only on Pedra Branca island
- *Notechis ater* (Chappell Island tiger snake) - isolated, recent decline in population
- *Pterodroma mollis* (soft-pumaged petrel)
- *Sterna striata* (white-fronted tern)
- *Vombatus ursinus ursinus* (Bass Strait wombat) - only found on Flinders Island
- *Austrochloritis victoriae* (southern hairy red snail) - only on King Island
- *Marginaster littoralis* (southeastern seastar) - littoral zone in the River Derwent
- *Patiriella vivipara* (live-bearing seastar) - littoral zone in southeast Tasmania
- *Smilasterias tasmaniae* (southeastern seastar) - littoral zone around Bruny Island

Other Near Island and Marine Animals of Interest

- *Arctocephalus pusillus doriferus* (Australian fur seal) - status currently under review
- Bathurst Harbour ecosystem - includes a skate and a range of unique marine and estuarine species
- *Cereopsis novaehollandiae* (Cape Barren goose) - harvested species, requires monitoring
- *Eudyptula minor* (little penguin) - threatened by impacts to colonies and viewing
- *Mirounga leonina* (southern elephant seal) - low numbers and under threat
- *Morus serrator* (Australasian gannet) - historical loss of breeding colonies
- *Puffinus tenuirostris* (short-tailed shearwater) - colonies impacted
- *Pelacanus conspicillatus* (Australian pelican) - requires monitoring
- *Acanthodillo* n. sp. (cave slater)
- *Cavernotettix craggiensis* (cave cricket) - Flinders Island
- *Cavernotettix flindersensis* (cave cricket) - Flinders Island
- *Engaeus martigener* (Flinders Island burrowing crayfish) - endemic to Flinders and Cape Barren Island
- *Letomola barrenense* (Bass Strait snail) - rare land snail
- *Parvotettix whinrayi* (cave cricket) - rare cricket on Flinders Island
- *Platyzosteria insulae* (Fisher Island cockroach - rare and only in Furneaux group

- *Protorchestia lakei* (coastal land hopper)
- *Tasmanoplectron isolatum* - rare cave cricket on Tasman Island
- *Tornatellinops jacksonensis* - rare land snail in the Furneaux Group

Macquarie Island

Macquarie Island, World Heritage Area, lies approximately 1500 km south southeast of Tasmania. The reserve is 12 785 ha in area and includes the main island of Macquarie, the islets of Judge and Clerk, Bishop and Clerk, and several sea stacks and reefs close by.

Indigenous vertebrate fauna on most offshore islands, including Macquarie Island are marine and dominated by a variety of seals, cetaceans and sea and shore birds. Over seventy species of birds have been recorded on or near Macquarie Island and approximately 300 species of terrestrial invertebrates have been identified in the reserve. Vegetation types on Macquarie Island are treeless and comprise tall tussock grassland, short grassland, herbfields, feldmark, and mire (includes bog and fen). Feldmark is the most widespread vegetation type covering approximately half the island and dominated by the endemic *Azorella macquariensis* and mosses. There is a known vascular flora of 46 species. Bryophytes comprise the most significant component of most vegetation types.

Threatened Macquarie Island Animals

- *Arctocephalus forsteri* (New Zealand fur seal) - hauls-out on Macquarie Island
- *Diomedea exulans exulans* (Macquarie Island wandering albatross)
- *Halobaena caerulea* (blue petrel)
- *Leucocarbo purpurascens* (Macquarie Island shag) - endemic to Macquarie Island
- *Oceanites oceanicus* (Wilsons storm petrel)
- *Pachyptila turtur subantarctica* (fairy prion, southern sub species)
- *Phoebetria palpebrata* (light-mantled sooty albatross)
- *Pterodroma lessonii* (white-headed petrel)
- *Pterodroma mollis* (soft-pumaged petrel)
- *Sterna striata* (white-fronted tern)
- *Sterna vittata bethunei* (Antarctic tern, New Zealand subspecies)
- *Thalassarche chrysostoma* (grey-headed albatross)
- *Thalassarche melanophrys* (black-browed albatross)

Other Macquarie Island Animals of Interest

- *Aptenodytes patagonicus* (king penguin) - large breeding colonies
- *Arctocephalus* 'complex' (sub-Antarctic fur seal 'hybrids') - breed on Macquarie Island
- *Arctocephalus pusillus doriferus* (Australian fur seal) - status currently under review
- *Arctocephalus gazella* (Antarctic fur seal) - breeds on Macquarie Island
- *Arctocephalus tropicalis* (sub-Antarctic fur seal) - status currently under review
- *Ebinania macquariensis* (marine fish) - endemic
- *Eudyptes chrysocome* (rockhopper penguin)
- *Eudyptes schlegeli* (royal penguin) - breeds only on Macquarie Island
- *Hydrurga leptonyx* (leopard seal) - status currently under review
- *Macronectes giganteus* (southern giant petrel) - longlining threats, nominated as threatened
- *Macronectes halli* (northern giant petrel) - longlining threats, nominated as threatened
- *Mirounga leonina macquariensis* (southern elephant seal) - status currently under review
- *Neophoca cinerea* (Australian sea-lion) - occasional visitor
- *Neophoca hookeri* (Hookers sea-lion) - occasional visitor
- *Neophrynichthys magnicirrus* (marine fish) - endemic
- *Phoebetria fusca* (sooty albatross) - occasional visitor, nominated as threatened
- *Puffinus griseus* (sooty shearwater)
- *Pygoscelis papua papua* (gentoo penguin)
- *Stercorarius skua lonnbergi* (great skua)
- *Apetaenus watsoni* (kelp fly) - endemic
- *Australimyza macquariensis* - endemic fly
- *Ephydrella macquariensis* - endemic fly

- *Macquaridrilus bennettae* - endemic freashwater worm
- *Microscolex macquariensis* (earthworm) - endemic
- *Schoenophilus pedestris* - endemic fly
- *Telmatogeton macquariensis* - endemic midge

Marine fish and marine and terrestrial invertebrates have been little sampled and studied. Research suggests that the Macquarie Island marine zone is an important faunal ecotone for a large number of pelagic and inshore marine species. Four asteroids (seastars) and two holothurians (sea cucumbers) are endemic to Macquarie Island, however, the endemicity in other invertebrate groups such as bivalves, etc. may be vast. A good review is provided in Selkirk (*et al.* 1990).

More Information

Blackhall, S. A., Lynch, A. J. and Corbett, C. (1996). Tasmania. In A Directory of Important Wetlands in Australia. (2nd ed.). Australian Nature Conservation Agency, Canberra, pp 533-604.

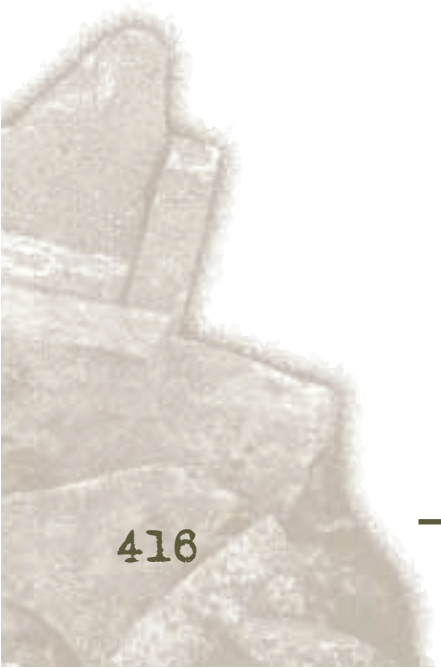
Bryant, S. L. and Anderson, R. M. (1999). Directory of flora and fauna conservation in Tasmania. Parks and Wildlife Service, Tasmania.

Kirkpatrick, J. B. and Gilfedder, L. A. (1999). Tasmanian bushcare toolkit. Parks and Wildlife Service, Hobart.

Reid, J. B., Hill, R. S., Brown, M. J. and Hovenden, M. J. (Eds.) (1999). Vegetation of Tasmania. Flora of Australia Supplementary Series Number 8. Jointly published by the University of Tasmania, Forestry Tasmania and the Cooperative Research Centre for Sustainable Production Forestry, Hobart, Tasmania.

Selkirk, P. M.; Seppelt, R. D. and Selkirk, D. R. (1990). Subantarctic Macquarie Island: Environment and Biology. Studies in Polar Research. Cambridge University Press, UK.

Smith, S. J. (1990). Checklist of the vertebrate animals of Tasmania. Tasmanian Government Printing Office, Hobart.



APPENDIX

The table below contains a list of all animal species which are on Tasmania's *Threatened Species Protection Act 1995* and the Commonwealth *Endangered Species Protection Act 1992*, as of mid 1999. It also contains animals currently recommended for listing. As nominations are being received all the time, the species and/or their status may have already changed. Please contact the Threatened Species Unit, or view the Department's Web Page for the most current listings.

Status Codes

Rare (means rare at risk)
Vulnerable
Endangered
Extinct
Review (being assessed for listing or de-listing on the Act)
- (not listed on the Act)

Scientific name	Common name or type	Status Tasmania	Status Com'w
Mammals			
Arctocephalus forsteri	New Zealand fur seal	Rare	-
Balaenoptera musculus	blue whale	Endangered	Endangered
Balaenoptera physalus	fin whale	Vulnerable	Vulnerable
Dasyurus maculatus maculatus	spotted-tailed quoll	-	Vulnerable
Eubalaena australis	southern right whale	Endangered	Endangered
Megaptera novaengliae	humpback whale	Endangered	Vulnerable
Perameles gunnii	eastern barred bandicoot	-	Vulnerable
Pseudomys novaehollandiae	New Holland mouse	Rare	-
Thylacinus cynocephalus	thylacine	Extinct	Extinct
Vombatus ursinus ursinus	Bass Strait wombat	-	Review
Birds			
Acanthiza pusilla archibaldi	King Island brown thornbill	-	Endangered
Accipiter novaehollandiae	grey goshawk	Rare	-
Aquila audax fleayi	wedge-tailed eagle (subspecies)	Vulnerable	Endangered
Cyanoramphus novaezelandiae erythrotis	Macquarie Island parakeet	Extinct	Extinct
Diomedea exulans	wandering albatross	Endangered	Vulnerable
Dromaius minor	King Island emu	Extinct	Extinct
Dromaius novaehollandiae diemenensis	Tasmanian emu	Extinct	Extinct
Gallirallus philippensis macquariensis	Macquarie Island rail	Extinct	Extinct
Halobaena caerulea	blue petrel	Vulnerable	Vulnerable
Lathamus discolor	swift parrot	Vulnerable	Endangered
Leucocarbo albiventer purpurascens	Macquarie Island shag	Vulnerable	Vulnerable
Macronectes giganteus	southern giant petrel	Review	-
Macronectes halli	northern giant petrel	Review	-
Neophema chrysogaster	orange-bellied parrot	Endangered	Endangered
Oceanites oceanicus	Wilsons storm petrel	Rare	-
Pachyptila turtur subantarctica	fairy prion (sub-species)	Vulnerable	Vulnerable
Pardalotus quadragintus	forty-spotted pardalote	Endangered	Endangered
Phoebetria fusca	sooty albatross	Review	-
Phoebetria palpebrata	light-mantled albatross	Vulnerable	-
Podiceps cristatus	great crested grebe	Rare	-
Pterodroma lessonii	white-headed petrel	Vulnerable	-
Pterodroma mollis	soft-plumaged petrel	Vulnerable	Vulnerable
Sterna albifrons sinensis	little tern	Endangered	Endangered
Sterna nereis	fairy tern	Rare	-
Sterna striata	white-fronted tern	Rare	-
Sterna vittata bethunei	Antarctic tern	Endangered	Endangered
Thalassarche cauta	shy albatross	Vulnerable	Vulnerable
Thalassarche chrysostoma	grey-headed albatross	Vulnerable	Vulnerable
Thalassarche melanophrys	black-browed albatross	Vulnerable	-
Thinornis rubricollis	hooded plover	-	Vulnerable

Scientific name	Common name or type	Status Tasmania	Status Com'w
Reptiles			
Caretta caretta	loggerhead turtle	Endangered	Endangered
Chelonia mydas	green turtle	Vulnerable	Vulnerable
Dermochelys coriacea	leatherback turtle	Vulnerable	Vulnerable
Eretmochelys imbricata	hawksbill turtle	Vulnerable	Vulnerable
Niveoscincus palfreymani	Pedra Branca skink	Vulnerable	Vulnerable
Notechis ater serventyi	Chappell Island tiger snake	Review	-
Amphibians			
Litoria raniformis	green and gold frog	Vulnerable	-
Fish			
Brachionychthys hirsutus	spotted handfish	Review	Endangered
Charcharodon carcharias	great white shark	Review	-
Galaxias auratus	golden galaxias	Review	-
Galaxias fontanus	Swan galaxias	Endangered	Endangered
Galaxias johnstoni	Clarence galaxias	Endangered	Endangered
Galaxias parvus	swamp galaxias	Review	-
Galaxias pedderensis	Pedder galaxias	Endangered	Endangered
Galaxias tanycephalus	saddled galaxias	Vulnerable	Vulnerable
Galaxiella pusilla	dwarf galaxiid	Rare	Vulnerable
Paragalaxias dissimilis	Shannon paragalaxias	Review	-
Paragalaxias eleotroides	Great Lake paragalaxias	Review	-
Paragalaxias julianus	western paragalaxias	Review	-
Paragalaxias mesotes	Arthurs paragalaxias	Review	-
Prototroctes maraena	Australian grayling	Vulnerable	Vulnerable
INVERTEBRATES			
Worms			
*Dasyurotaenia robusta (*see footnote)*	tapeworm (parasitic)	Vulnerable	-
Diporochaeta pedderensis	Lake Pedder earthworm	Endangered	-
Peripatus (Velvet Worms)			
Ooperipatellus cryptus	northwest velvet worm	Rare	-
Tasmanipatus anophthalmus	blind velvet worm	Endangered	-
Tasmanipatus barretti	giant velvet worm	Rare	-
Spiders and Relatives			
Hadronyche pulvinator	Cascade funnel-web spider	Extinct	-
Hickmanoxyomma cavaticum	Ida Bay harvestman	Rare	-
Hickmanoxyomma gibbergunyar	cave harvestman	Rare	-
Migas plomleyi	Plomleys trapdoor spider	Rare	-
Olgania excavata	little six eyed spider	Rare	-
Plesiothele fentoni	Lake Fenton trapdoor spider	Extinct	-
Pseudotyrannochthonius typhlus	cave false scorpion	Rare	-
Crustaceans			
Allanaspides hickmani	Hickmans mountain shrimp	Rare	-
Astacopsis gouldi	giant freshwater lobster	Vulnerable	Vulnerable
Echinodillo cavaticus	Flinders Island cave slater	Rare	-
Engaeus orramakunna	Mt Arthur burrowing crayfish	Vulnerable	-
Engaeus spinicaudatus	Scottsdale burrowing crayfish	Vulnerable	-
Engaeus yabbimunna	Burnie burrowing crayfish	Vulnerable	-
Haloniscus searlei	salt lake slater	Rare	-
Mesacanthotelson setosus	Great Lake phreatoicid 4	Rare	-
Mesacanthotelson tasmaniae	Great Lake phreatoicid 5	Rare	-
Onchotelson brevicaudatus	Great Lake phreatoicid 2	Rare	-
Onchotelson spatulatus	Great Lake phreatoicid 3	Rare	-
Tasniphargus tyleri	Great Lake amphipod	Rare	-

Scientific name	Common name or type	Status Tasmania	Status Com'w
Uramphisopus pearsoni	Great Lake phreatoicid 1	Rare	-
Butterflies and Moths			
Amelora acontistica	chevron looper moth	Vulnerable	-
Antipodia chaostola	chaostola skipper	Endangered	-
Chrysolarentia decisaria	Tunbridge looper moth	Extinct	-
Dasybela achroa	saltmarsh looper moth	Vulnerable	-
Dirce aesiodora	pencil pine moth	Vulnerable	-
Fraus latistria	broad-striped ghost moth	Rare	-
Oreixenica ptunarra	ptunarra brown butterfly	Vulnerable	-
Grasshoppers and Crickets			
Micropathus kiernani	Kiernans cave cricket	Rare	-
Parvotettix rangaensis	Ranga cave cricket	Rare	-
Schayera baiulus	Schayers grasshopper	Endangered	-
Caddisflies			
Costora iena	Great Lake caddisfly	Extinct	-
Diplectrona castanea	caddisfly	Extinct	-
Diplectrona lyella	caddisfly	Rare	-
Ecnomina vega	caddisfly	Rare	-
Hydrobiosella armata	caddisfly	Rare	-
Hydrobiosella sagitta	caddisfly	Rare	-
Hydroptila scamandra	caddisfly	Rare	-
Leptocerus souta	caddisfly	Rare	-
Oecetis gilva	caddisfly	Rare	-
Orphninotrichia maculata	spotted microcaddisfly	Rare	-
Orthotrichia adornata	microcaddisfly	Rare	-
Oxyethira mienica	Miena microcaddisfly	Rare	-
Ramiheithrus kocinus	caddisfly	Rare	-
Stenopsychodes lineata	caddisfly	Rare	-
Tasimia drepana	caddisfly	Rare	-
Taskiria mccubbini	McCubbins caddisfly	Endangered	-
Taskiropsyche lacustris	Lake Pedder caddisfly	Endangered	-
Beetles			
Castiarina insculpta	Miena jewel beetle	Extinct	-
Catadromus lacordairei	catadromus carabid beetle	Rare	-
Goedetrechus mendumae	blind cave beetle	Vulnerable	-
Goedetrechus parallelus	slender cave beetle	Vulnerable	-
Hoplogonus bornemisszai	Bornemisszas stag beetle	Endangered	-
Hoplogonus simsoni	Simsons stag beetle	Vulnerable	-
Hoplogonus vanderschoori	Vanderschoors stag beetle	Vulnerable	-
Idacarabus cordicollis	rough necked cave beetle	Rare	-
Idacarabus troglodytes	Ida Bay cave beetle	Rare	-
Lissotes latidens	broad-toothed stag beetle	Endangered	-
Lissotes menalcas	Mt Mangana stag beetle	Vulnerable	-
Tasmanotrechus cockerilli	Cockerills cave beetle	Vulnerable	-
Land Snails			
Anoglypta launcestonensis	northeast forest snail	Review	-
Austrochloritis victoriae	southern hairy red snail	Rare	-
Helicarion rubicundus	burgundy snail	Rare	-
Miselaoma weldii	Stanley snail	Vulnerable	-
Pasmaditta jungermanniae	Juggermans snail	Rare	-
Roblinella agnewi	Mt Wellington land snail	Rare	-
Tasmaphena lamproides	keeled snail	Rare	-
Undescribed Charopid snail	'Skemps' snail	Rare	-

Scientific name	Common name or type	Status Tasmania	Status Com'w
Freshwater Snails			
Beddomeia angulata	freshwater hydrobiid snail	Rare	-
Beddomeia averni	freshwater hydrobiid snail	Rare	-
Beddomeia bellii	freshwater hydrobiid snail	Rare	-
Beddomeia bowryensis	freshwater hydrobiid snail	Rare	-
Beddomeia briansmithi	freshwater hydrobiid snail	Rare	-
Beddomeia camensis	freshwater hydrobiid snail	Rare	-
Beddomeia capensis	freshwater hydrobiid snail	Rare	-
Beddomeia fallax	freshwater hydrobiid snail	Rare	-
Beddomeia forthensis	freshwater hydrobiid snail	Rare	-
Beddomeia franklandensis	freshwater hydrobiid snail	Rare	-
Beddomeia fromensis	freshwater hydrobiid snail	Rare	-
Beddomeia fultoni	freshwater hydrobiid snail	Rare	-
Beddomeia gibba	freshwater hydrobiid snail	Rare	-
Beddomeia hallae	freshwater hydrobiid snail	Rare	-
Beddomeia hermansi	freshwater hydrobiid snail	Rare	-
Beddomeia hullii	freshwater hydrobiid snail	Rare	-
Beddomeia inflata	freshwater hydrobiid snail	Rare	-
Beddomeia kershawi	freshwater hydrobiid snail	Rare	-
Beddomeia kessneri	freshwater hydrobiid snail	Rare	-
Beddomeia krybetes	freshwater hydrobiid snail	Vulnerable	-
Beddomeia launcestonensis	freshwater hydrobiid snail	Rare	-
Beddomeia lodderae	freshwater hydrobiid snail	Rare	-
Beddomeia mesibovi	freshwater hydrobiid snail	Rare	-
Beddomeia minima	freshwater hydrobiid snail	Rare	-
Beddomeia petterdi	freshwater hydrobiid snail	Rare	-
Beddomeia phasianella	freshwater hydrobiid snail	Rare	-
Beddomeia protuberata	freshwater hydrobiid snail	Rare	-
Beddomeia ronaldi	freshwater hydrobiid snail	Rare	-
Beddomeia salmonis	freshwater hydrobiid snail	Rare	-
Beddomeia tasmanica	freshwater hydrobiid snail	Rare	-
Beddomeia topsiae	freshwater hydrobiid snail	Rare	-
Beddomeia trochiformis	freshwater hydrobiid snail	Rare	-
Beddomeia tumida	Great Lake hydrobiid snail	Vulnerable	-
Beddomeia turnerae	freshwater hydrobiid snail	Rare	-
Beddomeia waterbouseae	freshwater hydrobiid snail	Rare	-
Beddomeia wilmotensis	freshwater hydrobiid snail	Rare	-
Beddomeia wiseae	freshwater hydrobiid snail	Rare	-
Beddomeia zeehanensis	freshwater hydrobiid snail	Rare	-
Glacidorbis pawpela	Great Lake snail	Rare	-
Phrantela annamurrayae	freshwater hydrobiid snail	Rare	-
Phrantela conica	freshwater hydrobiid snail	Rare	-
Phrantela marginata	freshwater hydrobiid snail	Rare	-
Phrantela pupiformis	freshwater hydrobiid snail	Rare	-
Seastars			
Marginaster littoralis	seastar	Endangered	-
Patiriella vivipara	live-bearing seastar	Endangered	-
Smilasterias tasmaniae	seastar	Rare	-

** not covered in this handbook as little information is available. Dasyurotaenia robusta is a parasitic tapeworm found in the small intestine of the Tasmanian devil, believed to be the intermediate host animal. This tapeworm species has only been found in Tasmanian devils collected from one small location north of Hobart, but little else is known.*

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