Environment

Priority Species

of the Moreton Bay Region

Contents

3 Introduction

What Determines A Priority Species?

Priority Species – A Definition

Figure 1: Moreton Bay Areas Of Significant Biodiversity Value

5 How Were The Priority Species Identified?

Steps 1 - 4

Figure 2: Species Sheet Layout

The Priority Species

10 Species Sheets

Species sheets listed in order of priority

117 Limitations And Considerations

117 Glossary

117 References

Introduction

The Moreton Bay region is renowned for its diverse natural environment.

As with many other areas of south-east Queensland, the Moreton Bay region is an area where subtropical biomes from the north meet temperate biomes from the south, which is reflected in the diversity of plants and animals encountered in the region. Areas of conservation in Moreton Bay are presented in Figure 1.

From Bribie Island and the mainland coast to the mountains in the hinterlands, the region covers an array of habitats – sandy ocean beaches, mangroves, tidal creeks and rivers, marshlands, brackish and freshwater swamps and lagoons, grasslands, woodlands and forests. Because of this variation, the range of native plants and animals living here is spectacular.

Moreton Bay Regional Council has commissioned this report to review the flora and fauna species occuring in our region that are of special significance. The product of this review will be used to develop further environmental planning tools that give these species priority, and to provide information to the community about significant flora and fauna species.

What Determines A Priority Species?

A priority species is one that, for various reasons, deserves special attention. This attention may, for example, be afforded because the species has been listed as threatened at the international, national, state or local level. Consequently, the concept of a priority species represents a key factor for the management of species and ecosystems, and it is often related, in general terms, to conservation issues. For example, the concept is a universally accepted term in the compilation of the so-called “Red Lists” at the local, national and international level (see IUCN 2001).

For the intent and purposes of this document, the definition of what constitutes a priority species in the Moreton Bay region is presented below and is based on a definition put forward by the Queensland Department of Environment and Resource Management (DERM) (formerly the Environmental Protection Agency (EPA)).

Priority Species – A Definition

(after EPA 2002)

A species that is currently listed as threatened (that is, extinct, extinct in the wild, endangered, vulnerable or near threatened) under the Commonwealth *Environment Protection and Biodiversity Protection Act 1999* and/or the Queensland *Nature Conservation (Wildlife) Regulation 2006*; or identified in various action plans as being of concern; or listed under international agreements; or at risk (that is, a poorly known population, or at their distributional limits); or of management concern within specific bioregions based on the opinion of experts; or of scientific interest (for example, because of specific habitat requirements, or a restricted distribution).

It should be highlighted that not all the priority species listed in this document are threatened, or mentioned in specific action plans, or otherwise. Rather, they have been identified as priority species because of their perceived values in the Moreton Bay region, such as iconic status, habitat values or cultural significance, for example. An example of such a species is the Moreton Bay Fig *(Ficus macrophylla)*.

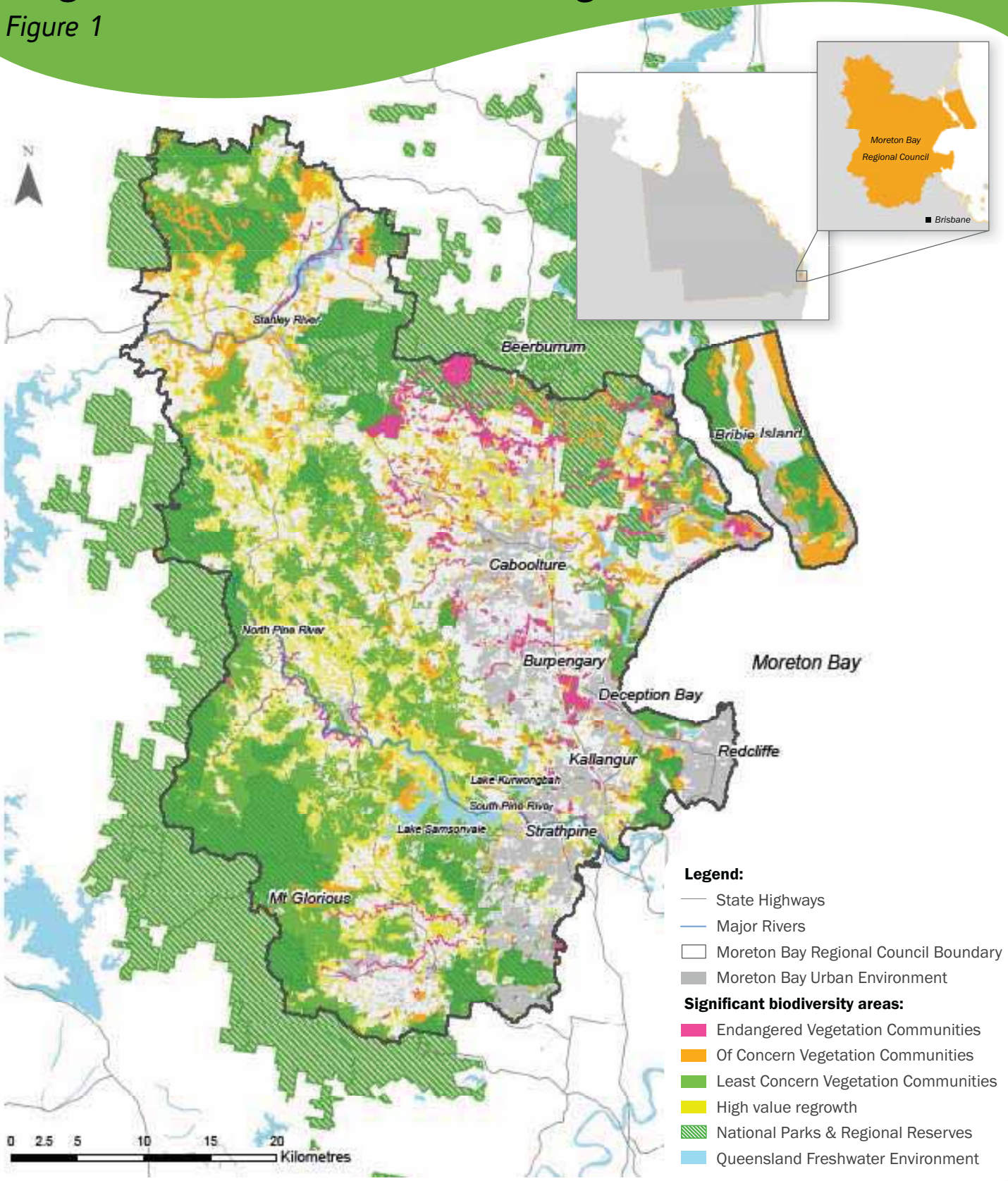
Given the above definition, and other considerations, for the Moreton Bay region, priority species are important because:

- Their populations may be in decline due to various pressures, such as development and habitat destruction.
- The species are in need of monitoring; particularly in terms of their population status and response to disturbance.

Environment

Moreton Bay Areas Of Significant Biodiversity Value

Figure 1



Map distribution data supplied by Golder Associates ©.

How Were The Priority Species Identified?

A four-step process was applied to identify priority species.

Step 1

A set of criteria was developed to define what constitutes a priority flora and fauna species. These criteria were largely based on the EPA's (2002) definition, and included the following aspects:

- Legislative status (that is, Commonwealth, State, regional or local, in order of importance).
- Confirmed or no confirmed records of species in the Moreton Bay region.
- Other significance (for example, iconic or cultural).

These criteria were ranked according to an order of importance; these are presented in Table 1. This is just an indicative ranking and is by no means absolute.

Table 1: Ranking criteria

Ranking	Criterion*
1	EPBC Act, endangered, confirmed records
2	EPBC Act, vulnerable, confirmed records
3	EPBC Act, endangered, no confirmed records
4	EPBC Act, vulnerable, no confirmed records
5	NCW Reg, endangered, confirmed records
6	NCW Reg, vulnerable, confirmed records
7	NCW Reg, near threatened, confirmed records
8	NCW Reg, endangered, no confirmed records
9	NCW Reg, vulnerable, no confirmed records
10	NCW Reg, near threatened, no confirmed records
11	BAMM, priority, confirmed records
12	BAMM, priority, no confirmed records
13	EPBC Act, migratory, confirmed records
14	EPBC Act, migratory, no confirmed records
15	Other significant species as identified by experts and others

* EPBC Act – Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*; NCW Reg – Queensland *Nature Conservation (Wildlife) Regulation 2006*; BAMM – DERM's *Biodiversity Assessment and Mapping Methodology*.

How Were The Priority Species Identified?

Step 2

A review of all known species and potential species occurring within the Moreton Bay region was undertaken using the following data sources:

- The Commonwealth's *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) Protected Matters Reporting Tool, available at: www.environment.gov.au/epbc/pmst/index.html[1].
- The DERM's Wildlife Online; available at: www.derm.qld.gov.au/wildlife ecosystems/wildlife/wildlife_online/.
- The DERM's essential habitat mapping; available at: www.derm.qld.gov.au/wildlife ecosystems/biodiversity/regional_ecosystems/introduction_and_status/regional_ecosystem_maps/index.php.
- The DERM's Biodiversity Assessment and Mapping Methodology (EPA 2002); available at: www.derm.qld.gov.au/wildlife ecosystems/biodiversity/biodiversity_assessment_and_mapping_methodology_bamm.html.
- The Queensland Herbarium's HERBRECS and CorVeg database; available through contacting the herbarium at: www.derm.qld.gov.au/wildlife-ecosystems/plants/queensland_herbarium/.
- The Queensland Museum; available at: www.qm.qld.gov.au/Research/Biodiversity/Studying+biodiversity/Zoology+Data+Search.
- Birds Australia's Birdata; available through contacting Birds Australia at: www.birdata.com.au.
- Moreton Bay Regional Council's species database.
- Consultation with local experts.
- Available popular and scientific literature.

Actual, publicly-available records exist for well over 3500 terrestrial plant and animal species in the Moreton Bay region. This does not, however, include many of the terrestrial insects, spiders, molluscs and other invertebrates that also inhabit the region. Therefore, it can be expected that this list of priority species is by no means complete.

Nevertheless, the list identified from the above sources was considered representative of the expected species in the Moreton Bay region.

Step 3

Using the list generated above, and the criteria identified in Table 1, a list of priority species was developed.

Step 4

Once all the priority species were identified, a species profile was developed for each, which includes:

- A brief description of the species, together with the characteristics that define it as a priority species, its preferred habitat, defining feature, etc.
- A glossy photograph of that species.
- A distribution map of the species based on known records (where these were available).

In some instances, a species profile has not been developed for those species identified as a priority where no detailed information or records could be found. That is not to say that these species are not priority species. The intention of having these species on the priority list is to keep them in mind as species that could occur in the Moreton Bay region.

The Priority Species

The list of priority species for the Moreton Bay region includes 111 plants and animals (Table 2). These are presented in order of priority based on their ranking, as defined in Table 1.

Species Profiles

In the sections that follow, information on each of the priority species is presented as a species profile. The layout and a key to the species profile is presented in Figure 2.

Priority species that do not have a species profile due to a lack of information include:

- Australian swiftlet (*Aerodramus terraereginae*, priority species no. 92)
- Small-leaved jasmine (*Jasminum jenniae*, priority species no. 72)
- Long haired ricinocarpos (*Ricinocarpos speciosus*, priority species no. 82)
- Mountain tea-tree (*Leptospermum oreophilum*, priority species no. 84)
- *Gonocarpus effuses* (priority species no. 110)

[1] It is acknowledged that the species identified in the Protected Matters Report are not necessarily based on actual occurrences of those species in the area. Rather, their listing in that report is based on potential to occur identified through habitat preferences. Nevertheless, the results obtained from that list were cross-referenced with those actual records obtained from the other databases.

A guide to the species sheets

Figure 2

Description

Defining feature: A special or interesting characteristic that sets this species apart from others.

Physical description: The physical appearance of the species, often differentiating between males and females, and adults and juveniles. This section also includes descriptions of special behaviours displayed by the species.

Habitat

The environment and preferred habitats of the species.

Feeding

The diet of the animal and any special feeding behaviours.

Breeding

Season: The breeding season of animals and particular factors that may influence the timing of breeding activities.

Additional information pertaining to breeding activities such as nest building and nesting location, number of offspring, incubation and care of offspring.

Lifecycle

The reproductive cycle of plants including times of flowering, fruiting and seeding.

Conservation

Status: The conservation status of the species in Queensland under the *Nature Conservation Act 1992* and nationally under the *Environmental Protection and Biodiversity Conservation Act 1999,* or other relevant sources.

Threats: Threats to the conservation and survival of the species.

Recommendations: Advice and actions that can be undertaken to help in conserving the species' populations.

Additional information

Extra interesting or significant information that is not presented under the sections above.

A photo of the animal or plant species.

A map showing the known records and sightings of the species in the Moreton Bay region.

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

Distribution

The distribution of the species within Australia with focus on their presence in Queensland.

References: Key references used to compile the species sheet and available as additional sources of information. .

The Priority Species

Priority	Common Name	Scientific Name
1	Loggerhead turtle	*Caretta caretta*
2	Lesser swamp orchid	*Phaius australis*
3	Spotted-tailed quoll (southern subspecies)	*Dasyurus maculatus maculatus*
4	Giant barred frog	*Mixophyes iteratus*
5	Red goshawk	*Erythrotriorchis radiatus*
6	Wallum sedgefrog	*Litoria olongburensis*
7	Koala	*Phascolarctos cinereus*
8	Water mouse	*Xeromys myoides*
9	Dugong	*Dugong dugon*
10	Brush sophora	*Sophora fraseri*
11	Red lilly pilly	*Syzygium hodgkinsoniae*
12	Macadamia nut	*Macadamia tetraphylla*
13	Bopple nut	*Macadamia ternifolia*
14	Macadamia nut	*Macadamia integrifolia*
15	Shade lily	*Romnalda strobilacea*
16	Australian lungfish	*Neoceratodus forsteri*
17	Grey-headed flying-fox	*Pteropus poliocephalus*
18	Bahr's scrub croton	*Croton mamillatus*
19	Wallum froglet	*Crinia tinnula*
20	Powerful owl	*Ninox strenua*
21	Richmond birdwing butterfly	*Ornithoptera richmondia*
22	Glossy black-cockatoo	*Calyptorhynchus lathami*
23	Green-thighed frog	*Litoria brevipalmata*
24	Common death adder	*Acanthophis antarcticus*
25	Richmond birdwing vine	*Pararistolochia praevenosa*
26	Thready barked myrtle	*Gossia inophloia*
27	Brush-tailed phascogale	*Phascogale tapoatafa*
28	Platypus	*Ornithorhynchus anatinus*
29	Squirrel glider	*Petaurus norfolcensis*
30	Black flying-fox	*Pteropus alecto*
31	Little red flying-fox	*Pteropus scapulatus*
32	Frilled lizard	*Chlamydosaurus kingii*
33	Land mullet	*Bellatorias major*

Priority	Common Name	Scientific Name
34	Feathertail glider	*Acrobates pygmaeus*
35	Brolga	*Grus rubicunda*
36	Moreton Bay fig	*Ficus macrophylla*
37	Short-beaked echidna	*Tachyglossus aculeatus*
38	Eastern osprey	*Pandion cristatus*
39	Emu	*Dromaius novaehollandiae*
40	Fleay's Frog	*Mixophyes fleayi*
41	Regent honeyeater	*Anthochaera phrygia*
42	Southern giant-petrel	*Macronectes giganteus*
43	Coxen's fig-parrot	*Cyclopsitta diophthalma coxeni*
44	Swift parrot	*Lathamus discolor*
45	Nightcap plectranthus	*Plectranthus nitidus*
46	Yellow swamp orchid	*Phaius bernaysii*
47	Oxleyan pygmy perch	*Nannoperca oxleyana*
48	Northern quoll	*Dasyurus hallucatus*
49	Australasian bittern	*Botaurus poiciloptilus*
50	Wandering pepper cress	*Lepidium peregrinum*
51	Ravine orchid	*Sarcochilus fitzgeraldii*
52	Christmas bells	*Blandfordia grandiflora*
53	Wandering albatross	*Diomedea exulans*
54	Shy albatross	*Thalassarche cauta*
55	Australian painted snipe	*Rostratula australis*
56	Black-breasted button-quail	*Turnix melanogaster*
57	Long-nosed potoroo	*Potorous tridactylus tridactylus*
58	Slender milkvine	*Marsdenia coronata*
59	Corky milkvine	*Marsdenia longiloba*
60	Ball nut	*Floydia praealta*
61	Toadflax	*Thesium australe*
62	Hop bush	*Dodonaea rupicola*
63	Missionary nutgrass	*Cyperus semifertilis*
64	Black-browed albatross	*Thalassarche melanophris*
65	Three-leaved bosistoa	*Bosistoa transversa*

Priority	Common Name	Scientific Name
66	Southern dayfrog	*Taudactylus diurnus*
67	Cascade treefrog	*Litoria pearsoniana*
68	Tusked frog	*Adelotus brevis*
69	Little tern	*Sternula albifrons*
70	Australian fritillary butterfly	*Argyreus hyperbius inconstans*
71	Water grass	*Lilaeopsis brisbanica*
72	Small-leaved jasmine	*Jasminum jenniae*
73	Wallum rocketfrog	*Litoria freycineti*
74	Beach stone-curlew	*Esacus magnirostris*
75	Major Mitchell's cockatoo	*Lophochroa leadbeateri*
76	Southern emu-wren	*Stipiturus malachurus*
77	Painted honeyeater	*Grantiella picta*
78	Red-tailed tropicbird	*Phaethon rubricauda*
79	Plumed frogmouth	*Podargus ocellatus plumiferus*
80	Illidge's ant-blue butterfly	*Acrodipsas illidgei*
81	Mark's cassia	*Cassia marksiana*
82	Long haired ricinocarpos	*Ricinocarpos speciosus*
83	Tiny wattle	*Acacia baueri subsp. baueri*
84	Mountain tea-tree	*Leptospermum oreophilum*
85	Tea-tree	*Leptospermum luehmannii*
86	Fine-leaved tuckeroo	*Lepiderema pulchella*
87	Aponogeton	*Aponogeton elongatus subsp. fluitans*
88	Swamp herb	*Maundia triglochinoides*
89	Pouched frog	*Assa darlingtoni*
90	Square-tailed kite	*Lophoictinia isura*
91	Grey goshawk	*Accipiter novaehollandiae*

Priority	Common Name	Scientific Name
92	Australian swiftlet	*Aerodramus terraereginae*
93	Black-necked stork	*Ephippiorhynchus asiaticus*
94	Red-browed treecreeper	*Climacteris erythrops*
95	Sooty oystercatcher	*Haematopus fuliginosus*
96	Black-chinned honeyeater	*Melithreptus gularis*
97	Turquoise parrot	*Neophema pulchella*
98	Lewin's rail	*Lewinia pectoralis*
99	Sooty owl	*Tyto tenebricosa tenebricosa*
100	Cotton pygmy-goose	*Nettapus coromandelianus*
101	Freckled duck	*Stictonetta naevosa*
102	Golden-tipped bat	*Kerivoula papuensis*
103	Elf skink	*Eroticoscincus graciloides*
104	Rose's shade-skink	*Saproscincus rosei*
105	Rusty vine	*Marsdenia hemiptera*
106	Rainforest acomis	*Acomis acoma*
107	Large-leaved wonga vine	*Pandorea baileyana*
108	Fraser Island creeper	*Tecomanthe hillii*
109	Corky cucumber	*Nothoalsomitra suberosa*
110	Gonocarpus	*Gonocarpus effusus*
111	Giant ironwood	*Choricarpia subargentea*
112	Hairy hazelwood	*Symplocos harroldii*
113	Water-shield	*Brasenia schreberi*
114	Tangle orchid	*Papillilabium beckleri*
115	Grease nut	*Hernandia bivalvis*
116	Wading birds	
117	Australian river mussel	*Cucumerunio novaehollandiae*
118	Sapphire rockmaster	*Diphlebia coerulescens*
119	North Pine River Freshwater Snail	*Fluvidona anodonta*

Loggerhead turtle

Caretta caretta

Description

Defining feature: The loggerhead turtle is the world's largest hard-shelled marine turtle and has a heart-shaped shell.

Physical description: The loggerhead turtle's shell is dark brown in colour with reddish and darker brown patches. Their skin is typically yellow to brown in colour. The shell of adult females has an average length of 96 cm. Hatchlings are dark brown in colour and have a shell length of around 4 cm.

Habitat

Adult loggerhead turtles live within coral and rocky reefs, seagrass beds and muddy bays. They have a preference for coastal habitats but have been known to frequent inland water bodies and travel hundreds of kilometres out to sea. Adult female loggerhead turtles require sandy beaches for nesting. Once hatched, juvenile loggerhead turtles head out into the open ocean where they will live for up to 15 years before moving inshore.

Feeding

Adult loggerhead turtles are primarily carnivorous and mostly eat small invertebrates that live on the seafloor, jellyfish and even fish, but will sometimes eat seagrass. Juvenile loggerhead turtles feed on algae and food particles floating in the top 5 m of the water column. There are important foraging areas located within Moreton Bay.

Breeding

Season: The breeding season for loggerhead turtles in Australia is from November to March with a peak in late December and early January.

Loggerhead turtles can live for over 50 years in the wild and reach breeding age at between 22 to 27 years old. Once a turtle has chosen its feeding and breeding areas, it will move between these areas for the rest of its life. Females often choose nesting areas on which they hatched. Nesting areas are concentrated in southern Queensland, particularly on the south-east coast, on the islands of the Capricorn-Bunker group within the southern Great Barrier Reef, and on the islands of the Swain Reefs. Low density nesting is also known to occur on the northern ends of Fraser and Moreton Islands.

Conservation

Status: The loggerhead turtle is listed as endangered in Queensland under the *Nature Conservation (Wildlife) Regulation 2006* and nationally under the *Environment Protection and Biodiversity Conservation Act 1999.*

Threats: Loggerhead turtles face a number of threats, mostly associated with commercial and recreational fishing and coastal development. The biggest threat for loggerhead turtles in the open ocean comes from commercial fishing as they get entangled in nets and can often drown. Turtles also ingest large amounts of plastic debris that floats in the ocean as they mistake it for food. In eastern Queensland predation by feral animals such as dogs and foxes is known to disturb nesting sites.

Recommendations: The 'Recovery Plan for Marine Turtles in Australia' outlines actions for the protection, conservation and management for loggerhead turtles. Care should be taken when fishing to avoid catching loggerhead turtles on fishing lines or striking with fishing boats.

Department of Sustainability, Environment, Water, Population and Communities 2011. Caretta caretta in Species Profile and Threats Database, Department of Sustainability, Environment, Water, Population and Communities, Canberra. http://www.environment.gov.au/sprat. Accessed 5 April 2011. National Geographic 2011. Loggerhead Sea Turtle in Animals: Facts. http://animals.nationalgeographic.com/animals/reptiles/loggerhead-sea-turtle/. Accessed 6 April 2011. Marine Turtle Specialist Group 1996. Caretta caretta. In: IUCN 2010. IUCN Red List of Threatened Species. Version 2010.4. www.iucnredlist.org. Accessed 18 April 2011. Map distribution data supplied by Moreton Bay Regional Council and WildNet (DERM). Map produced by Golder Associates ©. Photo supplied by A Boyle.

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

Distribution

Loggerhead turtles are found throughout eastern, northern and western Australia. In the vicinity of Moreton Bay, loggerhead turtles have been recorded nesting at several locations along the Redcliffe peninsula, as well as Woorim beach on the east coast of Bribie Island.

Priority Number: 1

Lesser swamp orchid

Phaius australis

Description

Defining feature: The lesser swamp orchid has the biggest flower of any Australian orchid and is one of Australia's most desired orchids.

Physical description: The lesser swamp orchid has four to eight long, pleated leaves and up to two flower stalks. The flowers are perfumed and are red-brown in colour with yellow veins and grow to around 10 - 15 cm across.

Habitat

The lesser swamp orchid is mostly associated with coastal wetlands, swampy grassland or swampy forest, and is relatively adaptable to different levels of light and soil types.

Lifecycle

The lesser swamp orchid flowers in spring (September-November) and can reproduce both sexually through pollination from another plant by bees and asexually by making a clone of itself.

Conservation

Status: The lesser swamp orchid is listed as endangered in Queensland under the *Nature Conservation (Wildlife) Regulation 2006* and nationally under the *Environment Protection and Biodiversity Conservation Act 1999.*

Threats: The greatest threats to the lesser swamp orchid are illegal collection of plants and habitat loss. This orchid is also threatened by the spread of invasive weed species as well as fire, animal grazing and trampling.

Recommendations: To help preserve the lesser swamp orchid, plants must not be removed from the wild (as it is illegal) and only specimens from licensed nurseries should be replanted. It is also important to fence off swampy areas from stock and to have processes in place to control weeds and feral pigs or other animals.

Distribution

The lesser swamp orchid is found in southern Queensland and northern New South Wales. This species is distributed from north of the Evans Head area to the Barron River in northeast Queensland.
In the Moreton Bay area, the lesser swamp orchid has been recorded at Bribie Island and Deception Bay.

Note: This species is thought to occur within Moreton Bay region; however limited to no distribution records are available. Records are known immediately adjacent to Moreton Bay region. Council welcomes additional information on the whereabouts of this species.

References: Department of Sustainability, Environment, Water, Population and Communities 2011. Phaius australis in Species Profile and Threats Database, Department of Sustainability, Environment, Water, Population and Communities, Canberra. http://www.environment.gov.au/sprat. Accessed 4 April 2011. Photo supplied by Jon Cara ANOS(Qld) - Kabi Group.

Priority Number: 2

Spotted-tailed quoll

(southern subspecies)

Dasyurus maculatus maculatus

Description

Defining feature: The spotted-tailed quoll is the largest native marsupial carnivore on the Australian mainland. This quoll has reddish-brown fur with distinctive white spots over its back carrying on to the tail; distinguishing it from all other Australian mammals.

Physical description: The spotted-tailed quoll is a nocturnal, carnivorous marsupial. Female spotted-tailed quolls are much smaller than their male counterparts. Adult males weigh on average 2.6 - 4.6 kg, while adult females are slightly smaller at 1.5 - 2.1 kg.

Habitat

Spotted-tailed quolls have a preference for mature wet forest habitat, but have also been recorded from a wide range of habitats including temperate and subtropical rainforests in mountain areas to lowland forest. Quolls sleep in a den during the day.

Feeding

Spotted-tailed quolls prey on mammals such as possums, gliders and rabbits. Their primary prey changes depending on the season and where they live. Spotted-tailed quolls are also excellent climbers and can scale high trees to capture their prey.

Breeding

Season: Spotted-tailed quolls mate and give birth over the winter months (June-August). Litters usually consist of four to six young that need milk from their mothers for around eight weeks, after which they may be left in the maternal den while the mother hunts.

Conservation

Status: The spotted-tailed quoll is listed as vulnerable in Queensland under the *Nature Conservation (Wildlife) Regulation 2006* and is listed as endangered nationally under the *Environment Protection and Biodiversity Conservation Act 1999.*

Threats: The greatest threat to the spotted-tailed quoll is the loss, fragmentation, disturbance and degradation of habitat through clearing of vegetation and timber harvesting. These threats not only affect the spotted-tailed quoll directly but can also reduce the amount of prey. Other threats include predation, competition for food, fire and poisoning by cane toads and 1080 (sodium fluroacetate) pesticide.

Recommendations: Changes in the application of bait laced with 1080 could reduce the effect on the spotted-tailed quoll. It is beneficial to survey for populations of spotted-tailed quoll prior to creating disturbance for land development.

References: Department of Sustainability, Environment, Water, Population and Communities 2011. Dasyurus maculatus maculatus in Species Profile and Threats Database, Department of Sustainability, Environment, Water, Population and Communities, Canberra. http://www.environment.gov.au/sprat. Accessed 4 April 2011. Borsboom A 1996. Conservation Management Profile: Spotted-tailed quoll (southern subspecies) Dasyurus maculatus maculatus.Department of Environment and Resource Management, Queensland Government. http://www.derm.qld.gov.au/register/p02353aa.pdf. Retrieved April 6 2011. Map distribution data supplied by Moreton Bay Regional Council and WildNet (DERM). Map produced by Golder Associates ©. Photo supplied by Mervyn C Mason Golder Associates Pty Ltd.

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

Distribution

The spotted-tailed quoll was once widely distributed; however, their current mainland range has reduced by up to 90%. In Queensland they live in the coastal area from Bundaberg to the border and inland to Monto and Stanthorpe, and have been recorded in a few north and south-east areas of the Moreton Bay region.

Priority Number: 3

Giant barred frog

Mixophyes iteratus

Description

Defining feature: The giant barred frog is one of Australia's largest species of ground-dwelling frog.

Physical description: Giant barred frogs are large and can grow up to 115 mm in length. This frog is olive to dark brown on top with paler or darker blotches, and cream to pale yellow below. The limbs have dark bands and the back of the thighs are black with large yellow spots. The pupil of the eye is vertical and the iris is pale golden in the upper half and brown in the lower half.

Habitat

The giant barred frog lives in deep leaf litter along shallow rocky streams in uplands and lowlands in rainforest and wet sclerophyll forest, including farmland. Sclerophyll is a type of vegetation characterised by hard, leathery, evergreen foliage that is specially adapted to prevent moisture loss. Many habitats in which this frog lives are the lower reaches of streams which have been affected by major disturbances such as clearing, timber harvesting and urban development in the stream headwaters.

Feeding

The giant barred frog forages for prey in leaf litter and primarily feeds on large insects and spiders.

Breeding

Season: The breeding season of the giant barred frog occurs in late spring to summer. Breeding takes place around shallow flowing rocky streams and eggs are laid on moist creek banks or rocks that are above water level.

Conservation

Status: The giant barred frog is listed as endangered in Queensland under the *Nature Conservation (Wildlife) Regulation 2006* and nationally under the *Environment Protection and Biodiversity Conservation Act 1999.*

Threats: The giant barred frog is at risk from a number of threats including reduction in water quality from sediment or pollution, habitat loss through clearing and urban development, degradation of riparian vegetation from grazing and weed invasion, change to water flows, and predation by feral animals. Many populations of this frog in south-east Queensland occur along narrow remnant riparian vegetation, illustrating their importance. This species is also at risk from chytrid fungus, a disease that affects amphibians worldwide.

Recommendations: To help the recovery of the giant barred frog from further population decline waterways should be protected from pollution and sedimentation. Habitat with known populations of the giant barred frog should not be cleared. Habitat should be managed for pests and weeds.

References: Department of Environment and Resource Management, Queensland Government 2010. Conservation Management Profile: Giant barred Frog. http://www.derm.qld.gov.au/wildlife-ecosystems/wildlife/threatened_plants_and_animals/endangered/giant_barredfrog.html. Retrieved April 18 2011. New South Wales Department of Environment and Conservation 2011. Giant Barred Frog. http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=105382. Accessed 18 April 2011. Department of Sustainability, Environment, Water, Population and Communities 2011. Mixophyes iteratus in Species Profile and Threats Database, Department of Sustainability, Environment, Water, Population and Communities, Canberra. Available from: http://www.environment.gov.au/sprat. Accessed 18 Apr 2011.
Map distribution data supplied by Moreton Bay Regional Council and WildNet (DERM). Map produced by Golder Associates ©. Photo supplied by the Moreton Bay Regional Council.

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

Distribution

Populations of the giant barred frog are found in small, isolated patches of forest along the coast from south-eastern Queensland to Hawkesbury River in New South Wales. Within Moreton Bay this species is predominantly found in northern areas.

Priority Number: 4

Red goshawk

Erythrotriorchis radiatus

Description

Defining feature: The red goshawk is a large, swift and powerful hawk that is endemic to Australia.

Physical description: The red goshawk is boldly mottled and streaked, with reddish scalloping on the back and upper wings, reddish underneath and with very large yellow legs and feet. Birds grow to a length of 45 - 60 cm with a wing span of 100 - 135 cm. The females are always larger, and are paler and heavily streaked underneath. Juveniles have a reddish head which distinguishes them from the adult birds.

Habitat

The red goshawk lives in wooded and forested areas of tropical and warm-temperate Australia. These habitats typically support high numbers of prey. Such areas have forest cover that is open enough to allow fast attack and flight manoeuvring, but thick enough to provide cover for ambushing prey. Nests are in tall trees within one kilometre of permanent water systems (rivers, swamps, pools).

Feeding

The red goshawk's diet is comprised largely of other birds. The goshawk usually catches its prey by hunting from a concealed perch, but changing this perch every one to five minutes. They also attack their prey by launching from high in the air.

Breeding

Season: The breeding season for the red goshawk is long, with courtship starting as early as April and young not leaving until as late as the end of December. Breeding normally takes place in spring, with eggs being laid between May and October.

The red goshawk breeds solitarily, nesting in a large tree in forested or woody areas that are close to water. Breeding pairs use the same nests and nesting territories year after year. The nest is large (approximately 0.5 m - 1.2 m across) and the eggs are incubated for 39 to 43 days. After hatching, the chicks stay in the nest for a further 50 or so days.

Conservation

Status: The red goshawk is listed as endangered in Queensland under the *Nature Conservation (Wildlife) Regulation 2006* and as vulnerable nationally under the *Environment Protection and Biodiversity Conservation Act 1999.*

Threats: The biggest threat to the red goshawk is habitat loss. In particular, widespread deforestation of lowland forests is thought to be contributing to the decline of the red goshawk in Queensland.

Recommendations: The presence of red goshawk breeding pairs should be established within forests to provide information to assist the survival of the species.

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

Distribution

The red goshawk is solitary and very thinly dispersed across coastal and sub-coastal Australia from the western Kimberley Division to north-eastern New South Wales.

References: BirdLife International 2008. Erythrotriorchis radiatus. In: IUCN 2010. IUCN Red List of Threatened Species. Version 2010.4. www.iucnredlist.org. Accessed 18 April 2011. Map distribution data supplied by Moreton Bay Regional Council and WildNet (DERM). Map produced by Golder Associates ©. Photo supplied by John Augusteyn.

Priority Number: 5

Wallum sedgefrog

Litoria olongburensis

Description

Defining feature: The wallum sedgefrog is a small, slender tree frog with a dark brown stripe that runs from its snout through the eye and ear, and a white streak that starts below the eye and runs down its sides between the thigh and ribs.

Physical description: The wallum sedgefrog is a green tree frog that has a pointed snout that protrudes over the lower jaw. The skin on its back is smooth and the colour ranges from grey-brown, to beige to bright green, with occasional dark flecks. The females of this species grow up to 34 mm and are somewhat larger than the male which grows up to 26 mm.

Habitat

The wallum sedgefrog's habitat is restricted to densely vegetated areas in the coastal lowlands of south-east Queensland. This frog is commonly found in swamps but is also seen in creeks and reed beds around freshwater lakes, or amongst sedges, reeds and ferns.

Feeding

The diet of adult wallum sedgefrogs consists mainly of small invertebrates, while the larval form of the frog eats biofilm which is an aggregation of microorganisms that stick to each other and to surfaces of surrounding reeds.

Breeding

Season: The wallum sedgefrog breeds in spring, summer and autumn after periods of rain.

The wallum sedgefrog usually breeds in semi-permanent swamps that have thick, emergent vegetation where eggs are laid singly in water at the base of plants.

Conservation

Status: The wallum sedgefrog is listed as vulnerable in Queensland under the *Nature Conservation (Wildlife) Regulation 2006* and nationally under the *Environment Protection and Biodiversity Conservation Act 1999.*

Threats: The wallum sedgefrog has suffered from extensive habitat loss resulting from pressures associated with urban development and the establishment of sand mining and pine plantations.

Recommendations: Large populations of wallum sedgefrog have persisted in protected reserves in Queensland. Handling of frog species should be avoided to reduce the risk of introducing disease and exotic fish species should not be released into natural waterways.

Distribution

The wallum sedgefrog is distributed from coastal lowland areas of south-east Queensland to north-east New South Wales. This species is also known from several islands off the Queensland Coast, including Bribie Island in Moreton Bay.

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

References: Department of Sustainability, Environment, Water, Population and Communities 2011. Litoria olongburensis in Species Profile and Threats Database, Department of Sustainability, Environment, Water, Population and Communities, Canberra. http://www.environment.gov.au/sprat. Accessed 7 April 2011. Department of Environment and Resource Management, Queensland Government 2011. Conservation Management Profile: Wallum sedgefrog. http://www.derm.qld.gov.au/wildlife-ecosystems/wildlife/az_of_animals/wallum_sedgefrog.html. Retrieved April 7 2011. Hines H, Newell D, Meyer E, Hero J-M, Clarke J 2004. Litoria olongburensis. In: IUCN 2010. IUCN Red List of Threatened Species. Version 2010.4. www.iucnredlist.org. Accessed 18 April 2011. Map distribution data supplied by Moreton Bay Regional Council and WildNet (DERM). Map produced by Golder Associates ©. Photo supplied by Mark G Sanders EcoSmart Ecology Pty Ltd.

Priority Number: 6

Koala

Phascolarctos cinereus

Description

Defining feature: The koala is an arboreal (tree-dwelling) marsupial. It is inactive for most of the day, feeding and moving mainly at night (nocturnal).

Physical description: The koala's fur ranges from grey to brown on top, and white below. The koala has large furry ears, no tail and a prominent black nose. A male koala weighs 6 - 12 kg and is larger than the females who weigh 5 - 8 kg. Male koalas also have a noticeably larger head. Female koalas have a rear opening pouch that contains two teats for their young to suckle, while males have a prominent chest gland which they use to mark trees and branches with their scent. They spend almost all of their time in trees and have large, sharp claws that are adapted for this behaviour.

Habitat

Koalas live in a variety of habitats depending on the availability of food trees. However, they prefer open forests and woodlands. Individual koalas live within a home range that is flexible and often overlaps with other koalas. Within Queensland these ranges can vary in size from five hectares, to as much as 296 hectares in central Queensland. Many koalas live within urban areas and can be seen in parks and nature reserves, in school playgrounds, and in trees along road verges.

Feeding

A koala's diet is predominantly made up of leaves from a variety of gum trees. This food source is high in toxins and low in nutrients.

Breeding

Season: Koalas give birth between August and May, with most births occurring in December and January.

Female koalas mature for breeding at two years of age, and healthy koalas will usually breed every year. The young joey will stay in the mothers pouch until six months of age but will not reach independence until it is weaned at 12 months old. The joey will stay close to its mother until 18 months old when it will seek alternative habitat.

Conservation

Status: The koala is listed as vulnerable in the south-east Queensland bioregion under the *Nature Conservation (Wildlife) Regulation 2006.* The koala is listed as vulnerable in Queensland, New South Wales and the Australian Capital Territory under the *Environment Protection and Biodiversity Conservation Act 1999.*

Threats: Many koala populations occur on land that has or is at risk of being developed for urban expansion, or for pastoral or agricultural development. Koalas living within urban areas are at risk of getting struck by cars or attacked by dogs as they move through the area in search of food. Koalas living in more rural areas are at risk of injury or death from wildfire or controlled fires (used as a method to help control larger fires).

Recommendations: Currently the *Queensland Nature Conservation (Koala) Conservation Plan 2006 and Management Program 2006-2016 (the Koala Plan)* sets out key research and management actions that are required to help stop the decline of koala populations. Some important actions to help protect the koala include retention of habitat, reduction in the fragmentation of habitat, minimising impediments to their movement such as non-koala friendly fencing, and minimising vehicle strikes and dog attacks.

References: Gordon G. 1996. Conservation Management Profile: Koala Phascolarctos cinereus.Department of Environment and Resource Management, Queensland Government. http://www.derm.qld.gov.au/register/p02352aa.pdf. Retrieved 7 April 2011. New South Wales Department of Environment and Conservation 2011. Koala profile. http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10616. Accessed 7 April 2011. Map distribution data supplied by Moreton Bay Regional Council and WildNet (DERM). Map produced by Golder Associates ©. Photo supplied by the Moreton Bay Regional Council.

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

Distribution

Koalas are currently found as far north as the Chillagoe/Herberton area and as far west as Jundah in central inland Queensland. The highest density of urban koalas in south eastern Queensland, and Moreton bay area, is in the Pine Rivers area.

Priority Number: 7

Water mouse

Xeromys myoides

Description

Defining feature: The water mouse has very small eyes and ears that are round and short. Unlike other species of water rats, the water mouse does not have webbed hind feet and is often called the false water rat.

Physical description: The water mouse is a small rodent with a maximum length of 126 mm. Its fur is short, very dense, silky and is coloured dark slate-grey on top and white underneath.

Habitat

The water mouse is found in three distinct locations in Australia, all of which provide similar habitat including mangroves and associated saltmarsh, sedgelands, clay pans, heathlands and freshwater wetlands. The water mouse displays differences in nesting behaviours between these locations.

Feeding

The water mouse eats a variety of crustaceans and marine shellfish such as mud lobster and mottled shore crab.

Breeding

Season: Little is known about the breeding biology of the water mouse, however it is thought that breeding takes place between May and December.

The water mouse can create five different nest types which may be shared by up to eight individuals, however there is usually only one sexually active male present.

Conservation

Status: The water mouse is listed as vulnerable in Queensland under the *Nature Conservation (Wildlife) Regulation 2006* and nationally under the *Environment Protection and Biodiversity Conservation Act 1999.*

Threats: Land development and associated removal and degradation of habitat are the biggest threats to the survival of the water mouse. Development most likely to impact includes residential development, marina development and aquaculture projects.

Recommendations: Ideally habitat known to contain the water mouse should be retained. However, often development has or will go ahead and impacts should be minimised through actions such as creating buffer zones of natural vegetation around habitats, fencing off livestock and controlling weeds.

References: Department of Sustainability, Environment, Water, Population and Communities 2011. Xeromys myoides in Species Profile and Threats Database, Department of Sustainability, Environment, Water, Population and Communities, Canberra. http://www.environment.gov.au/sprat. Accessed 7 April 2011. Winter J, Woinarski J, Aplin K 2008. Xeromys myoides. In: IUCN 2010. IUCN Red List of Threatened Species. Version 2010.4. www.iucnredlist.org. Accessed 18 April 2011. Map distribution data supplied by Moreton Bay Regional Council and WildNet (DERM). Map produced by Golder Associates ©. Photo supplied by the Moreton Bay Regional Council.

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

Distribution

The water mouse is known to occur in three discrete populations on the eastern and northern Australian coastline. Within Queensland it occurs along the central south and south-east regions, and is also found on the islands of Moreton Bay including Bribie Island, and north and south Stradbroke Islands.

Priority Number: 8

Dugong

Dugong dugon

Description

Defining feature: The dugong is the only plant-eating mammal that lives its entire life in the marine environment.

Physical description: The dugong is a large herbivorous marine mammal that has a long rotund body and a fluke for propulsion. Adult dugongs can reach lengths of more than three metres and weigh up to 420 kilograms.

Habitat

Dugongs occur in wide, shallow, protected bays and mangrove channels, and in the inside edge of large inshore islands. These areas coincide with extensive seagrass beds.

Feeding

Dugong feed almost exclusively on seagrass; the preferred species is *Halophila ovalis*. An adult will feed on about 30 kilograms of seagrass each day. Dugong have relatively poor eyesight, and rely on sensitive bristles covering the upper lip of their large snouts to find and grip seagrass. Dugongs in Moreton Bay are not completely herbivorous - research shows that they supplement their diet with macro-invertebrates, such as sea squirts.

Breeding

Female dugongs do not begin breeding until they are 10-17 years old. A single calf is usually born, and females invest considerable parental care into their young. Timing between births is unclear. Despite being long-lived, females may only give birth to a few calves during their lifetime.

Conservation

Status: The dugong is listed as vulnerable in Queensland under the *Nature Conservation (Wildlife) Regulation 2006* and nationally under the *Environment Protection and Biodiversity Conservation Act 1999.*

Threats: Threats to the dugong include boat strike, diminishing seagrass meadows (through pollution from herbicide runoff, sewage, detergents and heavy metals) and incidental mortality in gill fishing nets and shark meshing. The slow reproductive output of dugongs makes them particularly susceptible to threatening processes.

Recommendations: The dugong would benefit from monitoring the effects of boating traffic in known habitat and introducing controls. Improving erosion and sedimentation controls to prevent siltation of seagrass beds would also benefit this species.

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

Distribution

A large proportion of the world's dugong population is found in northern Australian waters from Moreton Bay in the east to Shark Bay in the west. Dugong have been recorded in the Pumicestone Passage, between Bribie Island and the mainland, in the Moreton Bay Region.

References: Queensland Department of Environment and Resource Management (http://www.derm.qld.gov.au)

Priority Number: 9

Brush sophora

Sophora fraseri

Description

Defining feature: The brush sophora is a small sparsely branched shrub that grows to 1 - 2 m tall.

Physical description: The brush sophora is covered in soft, short hairs and has leaves that are 6 - 15 cm long. The flowers are pale yellow and are arranged in groups at the end of the branches.

Habitat

Brush sophora grows in moist habitats along rainforest margins or in large canopy gaps in forests. It is often found at altitudes between 60 m and 600 m.

Lifecycle

The brush sophora flowers from September to November, and fruits from December to March.

Conservation

Status: The brush sophora is listed as vulnerable in Queensland under the *Nature Conservation (Wildlife) Regulation 2006* and nationally under the *Environment Protection and Biodiversity Conservation Act 1999.*

Threats: The biggest threat to the brush sophora is the loss of habitat to agriculture, development, timber harvesting, livestock and infestation by weeds. They also face local extinction because the populations are so small.

Recommendations: Habitat that contains a population of brush sophora should be protected from development and other threats.

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

Distribution

Brush sophora is found in south-east Queensland where it is widespread but not common. In the Moreton Bay area, records of brush sophora have been made at Kobble Creek, D'aguilar, Laceys Creek, Mount Mee, Mount Glorious and Stanmore

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References: Department of Sustainability, Environment, Water, Population and Communities 2011. Approved Conservation Advice (s266B of the Environment Protection and Biodiversity Conservation Act 1999): Approved Conservation Advice for Sophora fraseri.http://www.environment.gov.au/biodiversity/threatened/species/pubs/8836-conservation-advice.pdf. Accessed April 7 2011. Map distribution data supplied by Moreton Bay Regional Council and WildNet (DERM). Map produced by Golder Associates ©. Photo supplied by the Moreton Bay Regional Council.

Priority Number: 10

Red lily pilly

smooth-bark rose apple

Syzygium hodgkinsoniae

Description

Defining feature: The red lily pilly is a rare subtropical rainforest tree.

Physical description: The red lily pilly is a small tree that reaches approximately 10 m in height, with a trunk diameter of up to 15 cm. The bark is smooth and dark brown. The leaves are dark green, large, thick and heavy, measuring up to 15 cm long and 6 cm wide.

Habitat

The red lily pilly grows in subtropical rainforest near streams or rivers.

Lifecycle

The red lily pilly flowers from January to May producing white fragrant flowers. The fruits are bright red and fleshy, and measure up to 4 cm in diameter. These fruits mature through August to November.

Conservation

Status: The red lily pilly is listed as vulnerable in Queensland under the *Nature Conservation (Wildlife) Regulation 2006* and nationally under the *Environmental Protection and Biodiversity Conservation Act 1999.*

Threats: The red lily pilly faces threats from weed infestation, clearing and fragmentation of habitat, damage by livestock, and illegal collection for horticulture.

Recommendations: Manage habitat utilised by the red lily pilly through fencing off livestock and controlling weeds within and adjacent to habitat.

Distribution

In Queensland, the red lily pilly is distributed along the coastal parts of Moreton and Wide Bay districts to Maleny and Kin Kin. In North Queensland, populations have been recorded near Kuranda and Gordonvale.

Note: This species is thought to occur within Moreton Bay region; however limited to no distribution records are available. Records are known immediately adjacent to Moreton Bay region. Council welcomes additional information on the whereabouts of this species.

References: Department of Sustainability, Environment, Water, Population and Communities 2008. Approved Conservation Advice for Approved Conservation Advice for Syzygium hodgkinsoniae (Smooth-bark Rose Apple), Department of Sustainability, Environment, Water, Population and Communities, Canberra. http://www.environment.gov.au/biodiversity/threatened/species/pubs/3539-conservation-advice.pdf. Accessed 14 April 2011. Department of Sustainability, Environment, Water, Population and Communities 2011. Syzygium hodgkinsoniae — Smooth-bark Rose Apple, Red Lilly Pilly in Species Profile and Threats Database, Department of Sustainability, Environment, Water, Population and Communities, Canberra. http://www.environment.gov.au/sprat. Accessed 7 April 2011. The Royal Botanic Gardens and Domain Trust (2011). PlantNET - The Plant Information Network System of The Royal Botanic Gardens and Domain Trust, Sydney, Australia. http://plantnet.rbgsyd.nsw.gov.au. Accessed 7 April 2011. Photo supplied by the Moreton Bay Regional Council.

Priority Number: 11

Macadamia nuts:

rough-shelled bush nut, bopple nut, macadamia nut

Macadamia species: Macadamia tetraphylla, Macadamia ternifolia, Macadamia integrifolia

Description

Defining feature: The macadamia nut is a medium-sized tree that grows up to 20 m in height, with the top branches of the tree reaching up to 20 m in width. The cross-breeding of *Macadamia integrifolia* and *Macadamia tetraphylla* makes a hybrid that forms the basis of the commercial macadamia nut industry in Australia and Hawaii.

Physical description: Macadamia nuts are flowering plants often referred to as macadamia nut plants. These plants are evergreen. Flowers range in colour from cream or white, to pale pink, pale lilac or purple. The nuts are woody brown and globular, and contain seeds within a hard wrinkled, brown shell inside a green husk that is up to 3 cm in diameter.

Habitat

Macadamia nuts inhabit subtropical rainforest where they grow in a variety of areas from moderate to steep hill slopes, to partially open rainforest edges. These plants grow best in mild climate conditions that are frost-free with reasonably high rainfall.

Lifecycle

Macadamia nuts have a juvenile stage that lasts around six years. Flowering occurs from January to November and fruits occur from November to April. Reproduction of the macadamia nut occurs through seeds that are eaten by animals or dispersed by stream systems.

Conservation

Status: The three macadamia nut species *(Macadamia tetraphylla, Macadamia ternifolia, Macadamia integrifolia)* are listed as vulnerable in Queensland under the *Nature Conservation (Wildlife) Regulation 2006* and nationally under the *Environment Protection and Biodiversity Conservation Act 1999.*

Threats: The greatest threat to the macadamia nut is land clearance for development or agriculture. Other threats to these plants include weed invasion, wind and fire. They are also at risk of seed predation by rats and other pests.

Recommendations: Re-vegetating cleared areas around the macadamia tree can provide shelter for the tree and may also help to increase biodiversity and control weed populations. Fencing off livestock may also help the recovery of macadamia nuts. It is recommended that commercial hybrids are not released into the wild.

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

Distribution

Macadamia nuts are found from south-east Queensland to northern New South Wales. In south-east Queensland, macadamia nuts have been recorded at Mount Glorious, Cedar Creek, Highvale and Petrie. This species is predominantly found in the south-west of the Moreton Bay region, including Burpengary.

References: Department of Sustainability, Environment, Water, Population and Communities 2011. Macadamia integrifolia in Species Profile and Threats Database, Department of Sustainability, Environment, Water, Population and Communities, Canberra. http://www.environment.gov.au/sprat. Accessed 7 April 2011. Department of Sustainability, Environment, Water, Population and Communities 2011. Macadamia tetraphylla in Species Profile and Threats Database, Department of Sustainability, Environment, Water, Population and Communities, Canberra. http://www.environment.gov.au/sprat. Accessed 7 April 2011. Map distribution data supplied by Moreton Bay Regional Council and WildNet (DERM). Map produced by Golder Associates ©. Photo supplied by the Moreton Bay Regional Council (Macadamia tetraphylla).

Priority Number: 12-14

Shade lily

Romnalda strobilacea

Description

Defining feature: The shade lily is an evergreen tree that occurs in rainforests.

Physical description: The shade lily grows to around 1 m high with stems that are 10 cm long. Leaves extend to up to 90 cm long while the flowers are small and white.

Habitat

The shade lily occurs in complex rainforest where they have a preference for moist gullies or stream banks.

Lifecycle

The shade lily flowers in early to late spring.

Conservation

Status: The shade lily is listed as vulnerable in Queensland under the *Nature Conservation (Wildlife) Regulation 2006* and nationally under the *Environment Protection and Biodiversity Conservation Act 1999.*

Threats: The greatest threats to the shade lily are loss of habitat to agriculture development, and degradation of habitat by weed species.

Recommendations: Identifying populations of shade lily and removing weeds within their habitats can help to reduce the threat to this plant.

Distribution

The total population of the shade lily is unknown but the species is distributed from Kin Kin to Mt Mee in south Queensland. Some of these populations are located within protected estates and forest reserves that are currently protected from broad-scale clearing including the Bellthorpe State Forest.

Note: This species is thought to occur within Moreton Bay region; however limited to no distribution records are available. Records are known immediately adjacent to Moreton Bay region. Council welcomes additional information on the whereabouts of this species.

References: Department of Sustainability, Environment, Water, Population and Communities 2011. Romnalda strobilacea in Species Profile and Threats Database, Department of Sustainability, Environment, Water, Population and Communities, Canberra. http://www.environment.gov.au/sprat. Accessed 6 April 2011. Department of Sustainability, Environment, Water, Population and Communities 2008. Approved Conservation Advice for Romnalda strobilacea, Department of Sustainability, Environment, Water, Population and Communities, Canberra. http://www.environment.gov.au/biodiversity/threatened/species/pubs/5948-conservation-advice. Accessed 6 April 2011.

Photo supplied by Glenn Leiper.

Priority Number: 15

Australian lungfish

Neoceratodus forsteri

Description

Defining feature: The Australian lungfish is a large, freshwater fish that is able to breathe air using a single lung, in addition to breathing in water using its gills.

Physical description: The Australian lungfish weighs up to 48 kg and grows up to 2 m in length. Adults are olive-green or grey-brown above and yellow-orange below, with some white on the belly. Juveniles are dark olive, brown or yellow with a mottled pattern above and a pink belly. The fins of this fish resemble flippers and they have a small mouth with large, crushing teeth. Although they can breathe air, they predominantly use their gills but will surface to breathe air when they are active and require more oxygen such as when looking for food or spawning.

Habitat

The Australian lungfish is restricted to areas of permanent freshwater and cannot live or migrate through sea water. The lungfish requires still or slow-flowing, shallow, vegetated pools of water for feeding and spawning. Juvenile Australian lungfish prefer to live in dense covers of macrophytes (aquatic plants) that provide shelter and shade.

Feeding

The Australian lungfish feeds mainly at night with adults foraging in macrophyte beds in shallow water while juveniles ambush their prey, catching and holding them with sharp, cone-shaped teeth. Adult lungfish are benthic omnivores (eating both plants and animals on the bottom of the river) and eat a variety of food from frogs and prawns to fallen flowers and aquatic plants. Juvenile lungfish feed on a softer diet of small-bodied prey such as insect larvae and crustaceans.

Breeding

Season: Spawning for Australian lungfish occurs at night between August and December. Their eggs hatch after 30 days.

The Australian lungfish is a long-living species with estimates of its lifespan ranging from 50 to 100 years. They breed from around fifteen years old for males and twenty years old for females. Young lungfish look like tadpoles but start to resemble adults at six to seven months. Lungfish delay or skip breeding if their spawning habitat is disrupted by events such as large floods.

Conservation

Status: The Australian lungfish is listed as vulnerable nationally under the *Environment Protection and Biodiversity Conservation Act 1999.*

Threats: The biggest threat to the Australian lungfish is from dams and the associated changes in water quality and flow resulting from waterway impoundments. Natural movement through the river is blocked and flooding of dams removes much of their breeding habitat. These fish are also threatened by the clearing of vegetation from river banks which reduces their available habitat. Australian lungfish are also caught by recreational fishermen targeting other species.

Recommendations: In order to help populations of Australian lungfish, there are a number of things that dam operators can do to help minimise the impact on the species including gradually releasing dam water at times which will have the least impact on populations. The replanting of vegetation along waterways in which lungfish live will provide the species with more area in which to shelter and spawn. Replanted vegetation will also provide refuge to lungfish, helping to prevent the fish being displaced by fast-flowing floodwater.

References: Department of Sustainability, Environment, Water, Population and Communities 2011. Neoceratodus forsteri in Species Profile and Threats Database, Department of Sustainability, Environment, Water, Population and Communities, Canberra. http://www.environment.gov.au/sprat. Accessed 6 April 2011. Map distribution data supplied by Moreton Bay Regional Council and WildNet (DERM). Map produced by Golder Associates ©. Photo supplied by The Queensland Museum.

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

Distribution

The Australian lungfish is restricted to south-eastern Queensland where it naturally occurs in the Mary and Burnett River systems. It has also been translocated and now also occurs in the North Pine River (including Lake Samsonvale), the Brisbane River (including Lake Wivenhoe), and Enoggera Reservoir.

Priority Number: 16

Grey-headed flying-fox

Pteropus poliocephalus

Description

Defining feature: The grey-headed flying-fox is endemic to Australia and is the largest Australian fruitbat. Flying-foxes are important to the health and maintenance of many ecosystems within eastern Australia, as they pollinate and disperse seeds for a wide range of native trees.

Physical description: The grey-headed flying-fox is one of the largest bats in the world and ranges in weight from 0.6 kg to 1 kg. This species is the only Australian flying-fox that has a collar of orange-brown encircling the neck. As the name suggests, the head is covered in light grey fur. The belly fur is also grey and is often flecked with white and ginger. The legs are covered in a thick fur which extends to the ankle.

Habitat

The grey-headed flying-fox lives in a variety of habitats including rainforests, woodlands and urban areas. Grey-headed flying-foxes require roosting sites (perches on which to sleep) and places to forage for food. This species will roost in groups on exposed tree branches that are typically located near water, often returning to the same roosting sites for extended periods of time.

Feeding

The grey-headed flying-fox is a frugivore (eats fruit) and a nectarivore (eats nectar from flowers). This species feeds in a wide range of vegetation communities including rainforests, woodlands, urban areas and commercial fruit crops. However, none of these communities provide year-round food and the grey-headed flying-fox has to migrate in order to find food.

Breeding

Season: The grey-headed flying-fox mates in early autumn, with young usually born in October.

Grey-headed flying-foxes are thought to live to between 15 and 20 years, with females reaching sexual maturity at three years of age. A female grey-headed flying-fox will carry her young with her for up to five weeks while looking for food. Once the young have all of their fur they will be left in maternal camps (large groups of young) where they will be nursed until they are independent at around 12 weeks old. In the wild, females are prone to abort their young in response to environmental stresses such as a lack of food.

Conservation

Status: The grey-headed flying-fox is listed as vulnerable nationally under the *Environment Protection and Biodiversity Conservation Act 1999.*

Threats: The grey-headed flying-fox is faced with increasing mortality because of habitat destruction which has resulted in the disturbance of roosting and foraging habitats. The grey-headed flying-fox destroys commercial fruit and, consequently, mass culling of the species has occurred. This not only kills off adults but can also lead to the starvation of juveniles who rely on the milk from their mothers.

Recommendations: The state of Queensland has stopped issuing licenses for killing of grey-headed flying-foxes and is working to develop alternative control methods for orchards. Control methods such as full crop netting can be an alternative method and is not lethal to the grey-headed flying-fox.

References: Department of Sustainability, Environment, Water, Population and Communities 2011. Pteropus poliocephalus in Species Profile and Threats Database, Department of Sustainability, Environment, Water, Population and Communities, Canberra. http://www.environment.gov.au/sprat. Accessed 6 April 2011. Map distribution data supplied by Moreton Bay Regional Council and WildNet (DERM). Map produced by Golder Associates ©. Photo supplied by Moreton Bay Regional Council.

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

Distribution

The grey-headed flying-fox is found along the coastal belt from south-eastern Queensland to Melbourne. The grey-headed flying-fox is highly mobile and moves up and down the east coast in search of food. Consequently, there are no distinct populations and this species has been recorded throughout the Moreton Bay region.

Priority Number: 17

Bahr's scrub croton

Croton mamillatus

Description

Defining feature: Bahr's scrub croton is a very rare plant with less than a hundred plants known from the wild.

Physical description: Bahr's scrub croton is a small shrub with green leaves that are white and hairy underneath.

Habitat

Bahr's scrub croton grows on the edges of drier rainforests.

Lifecycle

The ecology of Bahr's scrub croton is largely unknown.

Conservation

Status: Bahr's scrub croton is listed as endangered in Queensland under the *Nature Conservation (Wildlife) Regulation 2006.*

Threats: Bahr's scrub croton has a very small population size that means it is vulnerable to common threats such as land development and invasion by pest plant species.

Recommendations: Identification of Bahr's scrub croton populations would help to locate areas that can be registered as nature refuges as for a population of Bahr's scrib croton in Campbell's Pocket on the upper Caboolture River.

Distribution

Bahr's scrub croton is found in south-east Queensland and has been recorded from Campbells Pocket Road near Caboolture. Until its discovery in the Caboolture Shire, this plant was previously only known from three locations south of Brisbane with less than 100 wild plants known worldwide.

Note: This species is thought to occur within Moreton Bay region; however limited to no distribution records are available. Records are known immediately adjacent to Moreton Bay region. Council welcomes additional information on the whereabouts of this species.

References: Weiber L 2008. Flora Profile: Bahr's Scrub Croton. In: Land for Wildlife South East Queensland. 2008. Newsletter of the Land for Wildlife Program South East Queensland. http://www.seqcatchments.com.au/LFW.html. Accessed 26 April 2011. Photo supplied by Glenn Leiper.

Priority Number: 18

Wallum froglet

Crinia tinnula

Description

Defining feature: Wallum froglets are very small frogs that are usually no longer than 15 mm and have a pointed snout.

Physical description: The colour and pattern of the wallum froglet is extremely variable from light grey or dark brown to dark grey above, and cream to dark grey underneath. The skin on the back of the froglet may be smooth or have irregular rounded projections. The wallum froglet is similar to other froglet species but can be distinguished by the fine white line that runs down the throat and body, and by its pointed snout.

Habitat

The wallum froglet is terrestrial and, like the name suggests, this species lives in swamps and sedge swamps within the coastal 'wallum' country. The wallum country is characterised by plant-rich shrubland and heathland on deep, nutrient-poor acidic sandy soils that regularly suffers from wildfire.

Feeding

Tadpoles of the wallum froglet are benthonic which means they subsist on sediment, detritus and algae.

Breeding

Season: Wallum froglets typically breed in autumn or early winter, but have been recorded breeding during all seasons following rain. During the breeding season male froglets make short and high-pitched calls from the base of plants near water to attract mates. Spawning typically occurs in July and August in shallow water where eggs are attached to submerged vegetation.

Tadpoles are grey or brown with irregular darker markings and have an oval shaped body and a tail that is one and a half times the length of the body.

Conservation

Status: The wallum froglet is listed as vulnerable in Queensland under the *Nature Conservation (Wildlife) Regulation 2006.*

Threats: Habitat loss is the biggest threat to wallum froglets. Their natural habitat has been cleared for agricultural and urban development, establishment of pine plantations and sand mining. Other threats include predation of eggs and larvae by introduced fish species and habitat degradation from weed invasion, feral animals and fire.

Recommendations: Wallum froglet habitat can be protected through creating buffer zones of vegetation around known breeding zones and rehabilitating already degraded habitat. Activities upstream of froglet habitat can influence water quality for this species so it is important not to pollute water upstream. Additionally, exotic fish should not be released into waterways.

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

Distribution

The wallum froglet only occurs in lowland coastal habitats in south-east Queensland and north-east New South Wales and on the sand islands off the Queensland coast (Fraser, Bribie, Moreton and North Stradbroke Islands).

References: Department of Environment and Resource Management, Queensland Government 2011. Conservation Management Profile: Wallum Froglet. http://www.derm.qld.gov.au/wildlife-ecosystems/wildlife/az_of_animals/wallum_froglet.html. Retrieved April 7 2011. New South Wales Department of Environment and Conservation 2011. Wallum froglet profile. http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10183. Accessed 7 April 2011. Map distribution data supplied by Moreton Bay Regional Council and Wild-Net (DERM). Map produced by Golder Associates ©. Photo supplied by the Moreton Bay Regional Council.

Priority Number: 19

Powerful owl

Ninox strenua

Description

Defining feature: The powerful owl is the largest owl in Australasia.

Physical description: Adults of the powerful owl can reach 60 cm in length, have a wingspan of up to 140 cm and can weigh up to 1.45 kg. The upper parts of the owl are a dark, grey-brown with off-white bars. The under parts are whitish with dark grey-brown v-shaped markings. The powerful owl has yellow eyes and feet.

Habitat

The powerful owl lives within a range of habitats from woodland and open forest, to rainforest. This owl roosts during the day in dense vegetation, but requires large sections of habitat in which to breed and hunt.

Feeding

The powerful owl prefers a diet of medium-sized tree dwelling marsupials such as the greater glider and possums.

Breeding

Season: Powerful owls nest in late-autumn to mid-winter, in tree hollows found in large gum trees. Clutches consist of two dull white eggs that are incubated for around 38 days.

Powerful owls are monogamous and mate for life. During the breeding season the male will roost in twenty to thirty different trees within 100 - 200 m of the nest tree. The powerful owl has a slow, deep and resonant double hoot and becomes more vocal during the breeding season.

Conservation

Status: The powerful owl is listed as vulnerable in Queensland under the *Nature Conservation (Wildlife) Regulation 2006.*

Threats: The biggest threat to the powerful owl is the fragmentation and loss of habitat. This can result in the destruction of roosting sites for the owl but it also affects their prey populations, therefore reducing their food resources. The powerful owl is particularly sensitive to any disturbance around nest sites during the nesting period. Young powerful owls are also at risk from predation by foxes, cats and dogs.

Recommendations: Forest sections that are to be developed should be searched for the presence of any powerful owls before clearing commences. Ideally, a 200 m buffer zone should be retained around nesting sites to avoid any disturbance and increase breeding success. Large old growth stands of forest, especially those with hollow-bearing trees, should be protected for nest sites.

Distribution

The powerful owl is endemic to eastern and south-eastern Australia and is mainly found on the coastal side of the great dividing range from Mackay in the north, down to south-western Victoria. Within the Moreton Bay region this species is predominantly found in the south, including Samford and Bunya areas.

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

References: New South Wales Department of Environment and Conservation 2011. Powerful Owl profile. http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=105626. Accessed 7 April 2011. Map distribution data supplied by Moreton Bay Regional Council and WildNet (DERM). Map produced by Golder Associates ©. Photo supplied by the Moreton Bay Regional Council.

Priority Number: 20

Richmond birdwing butterfly

Ornithoptera richmondia

Description

Defining feature: The Richmond birdwing butterfly is one of Australia's largest butterflies with a wingspan of up to 15 cm in females and 13 cm in males.

Physical description: The males and females of the Richmond birdwing butterfly are different from each other in appearance. The wings of the males are iridescent green and black on the upper side, with vivid blue, green and gold patches on the hind wings on the underside. The wings of the females are dark grey or brown with white and yellow patches on the upper and underside. Both males and females have a green stripe that runs between the head and stomach, and distinctive red patches on their bodies at the base of the wing. Larvae can grow up to 70 mm long and range in colour from black to whitish grey, with a series of fleshy spines running along the top of the body.

Habitat

The Richmond birdwing butterfly lives in subtropical rainforest. The larvae stage of the species is dependent on native *Pararistolochia* vines which are their host plants and are, consequently, found where these vines grow.

Feeding

Adult Richmond birdwing butterflies feed on nectar from a range of rainforest and exotic garden species. Larvae of this species eat their host plants but have high food demands and may cannibalise other Richmond birdwing larvae, reducing reproductive success.

Breeding

Season: The Richmond birdwing butterfly lays round, greenish-yellow eggs on native *Pararistolochia* vines. Both species of this vine (*Pararistolochia praevenosa* and *Pararistolochia laheyana*) are listed as near threatened in Queensland *(Nature Conservation Act 1992).* Eggs are also laid on the introduced Dutchman's pipe *(Aristolochia elegans)* but the leaves are toxic creating a 'death trap' for larvae that hatch and feed on the plant. There are two breeding seasons for butterflies found in the lowlands, and only one for those located at higher altitudes.

Conservation

Status: The Richmond birdwing butterfly is listed as vulnerable in Queensland under the *Nature Conservation (Wildlife) Regulation 2006.*

Threats: The Richmond birdwing butterfly is threatened by the loss of habitat, in particular for lowland rainforest containing *Pararistolochia* vines. The use of the introduced Dutchman's pipe to lay eggs is toxic and reduces the success of reproduction. Some populations of Richmond birdwing butterflies are becoming sterile due to inbreeding in isolated communities.

Recommendations: Replanting of the Richmond birdwing butterfly's host plants helps to re-establish populations in areas in which their host plants had been previously cleared. The removal of the introduced Dutchman's pipe vine would reduce the death of larvae.

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

Distribution

The Richmond birdwing butterfly is only known from two areas, from Caboolture to Kin Kin in the north and Nerang to Wardell in New South Wales in the south. This species is predominantly found in the north-west areas of the Moreton Bay region.

References: Wetland info Species Information Ornithoptera richmondia.Department of Environment and Resource Management, Queensland Government. http://www.epa.qld.gov.au/wetlandinfo/site/factsfigures/FloraAndFauna/Species/2014.f. Retrieved April 8 2011. Map distribution data supplied by Moreton Bay Regional Council and WildNet (DERM). Map produced by Golder Associates ©. Photo supplied by the Moreton Bay Regional Council.

Priority Number: 21

Glossy black-cockatoo

Calyptorhynchus lathami

Description

Defining feature: The glossy black-cockatoo is one of Australia's most threatened cockatoos. There are three subspecies of this cockatoo: *Calyptorhynchus lathami lathami, Calyptorhynchus lathami erebus* and *Calyptorhynchus lathami halmaturinus.*

Physical description: The glossy black-cockatoo is a large bird at 48 cm long, but is the smallest of the black-cockatoos. These birds are a dull brown to black with red tail panels. On females these tail panels are more orange in colour and have black bars. Females and juveniles also have yellow blotches on their head and neck, and big beaks.

Habitat

Glossy black-cockatoos are found in coastal and inland forests and wetlands. This species requires specialised habitat that contains both large old-growth hollowed out trees for nesting and she-oak species for feeding.

Feeding

Glossy black-cockatoos are highly specialised feeders. They feed almost entirely on the seeds of she-oaks (*Casuarina* and *Allocasuarina* plant species) so they are restricted to habitats that have high numbers of these trees. In order to feed, the cockatoos pick the cones from the trees, then holding them in their left claws, they extract the seeds with their strong beak.

Breeding

Season: The glossy black-cockatoo lays its eggs between March and August.

Female glossy black-cockatoos begin breeding at three years of age and produce one egg per year.

Conservation

Status: The glossy black-cockatoo is listed as vulnerable in Queensland under the *Nature Conservation (Wildlife) Regulation 2006*.

Threats: The biggest threat to the glossy black-cockatoo is the loss of habitat through clearing for development. This bird is also at risk from illegal bird smuggling and egg collecting as well as the threat from fire.

Recommendations: To help the survival of the glossy black-cockatoo, their habitat should be protected. In particular, food trees (*Allocasuarina* species) and nesting trees (gum species) should be protected. Large old trees, including dead trunks, are very important for nesting as it takes at least 100 years of growth before a tree forms suitable hollows. Habitat should be fenced off from grazing animals, and should have feral animal and weed control methods in place.

Distribution

Glossy black-cockatoos are found along the east coast from southern Queensland to western Victoria. This species is found throughout the Moreton Bay region. The subspecies' *Calyptorhynchus lathami erebus* is found in east-central Queensland and subspecies *Calyptorhynchus lathami lathami* has a patchy distribution in Queensland.

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

Sheet Number: 22

References: BirdLife International 2009. Calyptorhynchus lathami. In: IUCN 2010. IUCN Red List of Threatened Species. Version 2010.4. www.iucnredlist.org. Accessed 8 April 2011. New South Wales Department of Environment and Conservation 2011. Glossy Black-cockatoo profile. http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10140. Accessed 8 April 2011. Wetlandcare Australia 2011. Glossy Black-cockatoo. Northern Rivers, Catchment management Authority. http://www.wetlandcare.com.au/Content/articlefiles/674-Glossy%20Black-cockatoo.pdf. Accessed 8 April 2011. Map distribution data supplied by Moreton Bay Regional Council and WildNet (DERM). Map produced by Golder Associates ©. Photo supplied by Rohan Clarke Wildlife Images.

Green-thighed frog

Litoria brevipalmata

Description

Defining feature: Green-thighed frogs are named after the bright green or blue-green colour that occurs on the back of their thighs or groin. These markings easily distinguish the green-thighed frog from other frog species.

Physical description: Green-thighed frogs are small frogs that grow up to 40 mm in length. This frog is rich brown to chocolate brown on its back, with a broad, black stripe that runs from the snout to just behind its front leg where it ends as a series of blotches.

Habitat

Green-thighed frogs occur in a range of different habitats, from rainforest and moist eucalypt forest to dry eucalypt forest where surface water typically pools after rain.

Feeding

The green-thighed frog is thought to forage in leaf litter for its food.

Breeding

Season: Breeding for the green-thighed frog occurs in late spring and summer after periods of heavy rainfall. The frogs aggregate around grassy flood-prone areas to breed, where the male will often call to the females with a series of “quack” or “wok” sounds.

The green-thighed frog lays its eggs in a single layer at the waters surface amongst vegetation. The tadpoles are dark brown or black in colour and will hover with their head-up and tail down in the water column.

Conservation

Status: The green-thighed frog is listed as near threatened in Queensland under the *Nature Conservation (Wildlife) Regulation 2006.*

Threats: The green-thighed frog requires periodic local flooding for breeding and, consequently, any changes which reduce such flooding pose a threat to this species. Frogs are also threatened from the clearing of habitat for agriculture or development, reduction of water quality through grazing and pasture fertilisation, and the reduction of leaf litter through grazing and burning.

Recommendations: To help the survival of the green-thighed frog vegetation and leaf litter should be maintained within their habitat, particularly in areas surrounding ponds, dams and other moist areas. Natural flood regimes should be protected to aid successful breeding and water bodies should be protected from pollution. Habitat should be fenced off to protect it from grazing.

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

Distribution

The green-thighed frog has been sighted in isolated communities along the east coast from just north of Wollongong to south-east Queensland. It has also been sighted at several locations in the Moreton Bay region, predominantly in the north.

References: Hero J-M, Hines H, Meyer E, Lemckert F, Newell D, Clarke J 2004. Litoria brevipalmata. In: IUCN 2010. IUCN Red List of Threatened Species. Version 2010.4. www.iucnredlist.org. Accessed10 April 2011. New South Wales Department of Environment and Conservation 2011. Green-thighed Frog profile. http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10485. Accessed 11 April 2011. Frogs Australia Network 2005. Australian frog Database: Litoria brevipalmata. http://www.frogsaustralia.net.au/frogs/display.cfm?frog_id=135. Accessed 11 April 2011. Map distribution data supplied by Moreton Bay Regional Council and WildNet (DERM). Map produced by Golder Associates ©. Photo supplied by the Moreton Bay Regional Council.

Priority Number: 23

Common death adder

Acanthophis antarcticus

Description

Defining feature: The common death adder is native to Australia and is one of the most venomous land snakes both in Australia and worldwide.

Physical description: The common death adder has a broad triangular head, narrow neck, short thick body and a thin tail. Body colour ranges from grey to a rich reddish-brown on top, whitish with black or brown flecks on the underside. The tip of the tail is cream or black. Male common death adders are 44 cm long on average, while females average about 58 cm but can grow up to 100 cm long.

Habitat

The common death adder is found in a wide variety of well-drained habitats including rainforests, woodlands, shrublands and grasslands. They favour habitats with a lot of leaf litter as they spend most of their day lying concealed under loose sand, leaf litter or plants.

Feeding

The common death adder is carnivorous and hunts by ambush, waiting for its prey to come to it rather than searching for food. While waiting for its prey the common death adder will coil up its body with the tip of the tail near its mouth, where it wriggles its tail to mimic a worm in an attempt to lure prey closer. This species has a wide range of prey including frogs, insects, lizards, birds and small mammals. The prey changes with age and juveniles diets are dominated by lizards and frogs, while adults mainly take mammals and birds.

Breeding

Season: The common death adder typically mates in spring, producing live young that are usually born in March. Litter size is variable and can be between two and forty-two offspring, with females producing one litter every two years. Males reach sexual maturity at 24 months and females at 42 months of age.

Conservation

Status: The common death adder is listed as near threatened in Queensland under the *Nature Conservation (Wildlife) Regulation 2006.*

Threats: The common death adder is threatened by habitat loss due to land clearing for agriculture or development. Snakes are also directly at threat from road kills and death from the attempted predation of the poisonous cane toad. Other threats to the common death adder include impacts from the removal of woody debris and rocks within their habitat, predation by feral animals, trampling by livestock and deliberate killing by humans.

Recommendations: Protecting known and potential habitat of the common death adder from clearance, grazing and feral species will help reduce threats to this species. Minimising the removal of fallen logs and leaf litter within their habitat will help reduce the impact on this species.

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

Distribution

The common death adder has been recorded from the Gulf region of the Northern Territory across to central and eastern Queensland and New South Wales, and through to the southern parts of Southern Australia and Western Australia. This species is predominantly found in southern parts of the Moreton Bay region.

References: Department of Environment and Resource Management, Queensland Government 2010. Conservation Management Profile: Common death adder. http://www.derm.qld.gov.au/wildlife-ecosystems/wildlife/az_of_animals/common_death_adder.htmlll. Retrieved April 11 2011. Wetlandinfo Species Information Acanthophis antarcticus. Department of Environment and Resource Management, Queensland Government. http://www.epa.qld.gov.au/wetlandinfo/site/MappingFandD/WetlandMapsAndData/SummaryInfo/Species/511.jsp?Archive=true. Retrieved April 11 2011. Map distribution data supplied by Moreton Bay Regional Council and WildNet (DERM). Map produced by Golder Associates ©. Photo supplied by Mark G Sanders EcoSmart Ecology Pty Ltd.

Priority Number: 24

Richmond birdwing vine

Pararistolochia praevenosa

Description

Defining feature: The Richmond birdwing vine is the host plant for the Richmond birdwing butterfly and provides the only food source for the caterpillar.

Physical description: The Richmond birdwing vine is a large, woody, climbing vine that produces yellow to red tubular flowers up to 35 mm in length during spring. The vine is often characterised by dense brown hairs on leaf stems, shoots and flowering plants.

Habitat

The Richmond birdwing vine is found in rainforest type habitat and grows particularly well after rain and during winter when there are no caterpillars to feed on them.

Lifecycle

The Richmond birdwing vine is pollinated solely by midges. After pollination their yellow fruit capsules will form in spring, slowly expand and ripen over summer before turning golden orange in autumn and dropping to the ground. Germination is aided by the Australian brush turkey which buries the seeds with its claws as it feeds upon the fruit.

Conservation

Status: The Richmond birdwing vine is listed as near threatened in Queensland under the *Nature Conservation (Wildlife) Regulation 2006.*

Threats: The Richmond birdwing vine has become rare through land clearing and urbanisation. This vine is also threatened by prolonged drought.

Recommendations: The Richmond birdwing vine can grow within suburban gardens and this will help the species and also provide more host plants for the Richmond birdwing butterfly.

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

Distribution

The Richmond birdwing vine grows in coastal areas in south eastern Queensland. The vine has been recorded in the Caloundra City Conservation Reserve, Bellthorpe State Forest, Stanley River, Stony Creek, Neurum Creek and Mill Creek.

References: Richmond Birdwing Conservation Network. 2011. Richmond Birdwing Vine: Pararistolochia praevenosa. http://www.richmond-birdwing.org.au/images/Growing%20birdwing%20vines%20-%20Chris%20Hosking.pdf. Accessed 13 April 2011. Miller, B. 2007. Richmond Birdwing Vine (Pararistolochia praevenosa). Butterfly and other Invertebrates Club Inc. http://www.boic.org.au/01_cms/details.asp?ID=31. Accessed 13 April 2011. Wikipedia. 2011. Pararistolochia praevenosa. http://en.wikipedia.org/wiki/Pararistolochia_praevenosa. Accessed 13 April 2011. Map distribution data supplied by Moreton Bay Regional Council and WildNet (DERM). Map produced by Golder Associates ©. Photo supplied by the Moreton Bay Regional Council.

Priority Number: 25

Thready barked myrtle

Gossia inophloia

Description

Defining feature: Thready barked myrtle is a rare flowering shrub with an edible black berry to 7mm.

Physical description: Thready barked myrtle is a small to medium shrub that grows up to 2 m in height. This plant produces small white flowers in spring to early summer. New growth of this shrub is pink to bronze in colour and the colour can be retained for many months.

Habitat

The thready barked myrtle prefers locations that are shaded or semi-shaded with well-drained soils.

Lifecycle

Thready barked myrtle produces a small blackberry that ripens during autumn.

Conservation

Status: Thready barked myrtle is listed as near threatened in Queensland under the *Nature Conservation (Wildlife) Regulation 2006.*

Threats: Thready barked myrtle is at threat from the myrtle rust fungus. Myrtle rust is distinctive in that it produces masses of powdery bright yellow or orange-yellow spores on infected parts of the plant.

Recommendations: To help stop the spread of myrtle rust to thready barked myrtle it is recommended that infected plants are reported to Biosecurity Qld (13 25 23).

Distribution

Thready barked myrtle is found north from Mt Glorious including Stanley River.

Note: This species is thought to occur within Moreton Bay region; however limited to no distribution records are available. Records are known immediately adjacent to Moreton Bay region. Council welcomes additional information on the whereabouts of this species.

References: Australian Native Plants Nursery 2011. Gossia inophloia syn Austromyrtus inophloia. http://www.australianplants.com/plants.aspx?id=1663. Accessed 26 April 2011. Australian Native Plants Society (Australia) 2011. Gossia inophloia. http://anpsa.org.au/g-ino.html. Accessed 26 April 2011. Photo supplied by Glenn Leiper.

Priority Number: 26

Brush-tailed phascogale

Phascogale tapoatafa

Description

Defining feature: The brush-tailed phascogale has a characteristic bottle brush tail with black hairs that are up to 4 cm long.

Physical description: The brush-tailed phascogale is a tree-dwelling, carnivorous marsupial. The head, back and sides are covered with grey fur, while the belly fur is a pale cream. Ears are large and without fur and its eyes are large and black. Adult brush-tailed phascogales have a body length of up to 20 cm and a tail length of 20 cm.

Habitat

The brush-tailed phascogale prefers dry, open forests with sparse ground cover of herbs, grasses, shrubs or leaf litter. This species can also be found in swamps, rainforest and wet forest. However, it is rare in semi-arid or arid environments.

Feeding

The brush-tailed phascogale is nocturnal and predominantly eats invertebrates such as spiders, beetles and cockroaches, as well as feeding on nectar. Occasionally it will feed on small vertebrates. Individuals use their small fingers to capture prey from crevices and under bark.

Breeding

Season: Mating season for the brush-tailed phascogale is between May and July, during which time males can travel long distances in search of a mate. The young are born at around 30 days, typically in litters of three to eight offspring. Juveniles leave the pouch at seven weeks old and are fully weaned at 20 weeks. Females can live up to three years but generally only produce one litter.

The brush-tailed phascogale nests in tree hollows that are lined with leaves and shredded bark and are covered with pungent faeces which acts as a territorial marker.

Conservation

Status: The brush-tailed phascogale is considered a species of least concern in Queensland under the *Nature Conservation (Wildlife) Regulation 2006.*

Threats: The brush-tailed phascogale is threatened by habitat loss through the clearing of forest for agriculture and development, with the biggest threat being the loss of hollow bearing trees. This species is also at competition with the introduced honeybee for suitable nesting hollows in large trees. This species faces pressure from predation by foxes and cats, and is at risk from inappropriate fire regimes.

Recommendations: To help recover populations of the brush-tailed phascogale the protection and maintenance of known habitat, particularly old growth trees, needs to be undertaken. For areas of habitat in which there are no tree-hollows present it is recommended that nest boxes are installed and future nest trees are retained. Pest control and a change in fire regimes could also help the survival of this species.

Distribution

The brush-tailed phascogale has a patchy distribution around the coast of Australia. This species occurs across the northern tip of Cape York Peninsula in Queensland, and from Rockhampton in Queensland to South Australia. This species is predominantly found in the west and south of the Moreton Bay region.

References: Menkhorst P, Rhind S, Ellis M 2008. Phascogale tapoatafa. In: IUCN 2010. IUCN Red List of Threatened Species. Version 2010.4. www.iucnredlist.org. Accessed 13 April 2011. Map distribution data supplied by Moreton Bay Regional Council and WildNet (DERM). Map produced by Golder Associates ©. Photo supplied by The Queensland Museum.

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

Priority Number: 27

Platypus

Ornithorhynchus anatinus

Description

Defining feature: The platypus is a mammal with a large bill. Unlike most mammal species, the platypus does not have teats, and lays eggs instead of giving birth to live young.

Physical description: The platypus is a small mammal with males measuring 50 cm in length and weighing about 1.5 kg, while females measure 40 cm long and weigh 1 kg. Their large bill is like soft, wet rubber. The bill is very sensitive and used to find food. Their body is very streamlined and covered in a thick, brown fur. They have a flat tail, short stout legs and webbed front feet. Male platypus have a sharp spur on each ankle that is thought to be used in territorial fights between males during the mating season.

Habitat

Platypus live in freshwater habitats such as slow-moving rivers, creeks, lakes and farm dams. They build simple burrows along the river banks, just above the waterline, often among tree roots. Their day is predominantly spent in the water looking for food or in their burrow, but they also spend time basking in the sun.

Feeding

Platypus hunt with their eyes, ears and nostrils closed and rely on their sensitive bill to locate food. Their diet consists of small water animals such as insect larvae, freshwater shrimps and crayfish. When food is located they store it in cheek pouches before returning to the surface to eat. Platypus have no teeth so instead grind their food between two horny plates.

Breeding

Season: In Queensland platypus mate in August. After mating the female platypus will increase her food intake and build a nesting burrow. The female platypus will then barricade herself into the burrow to lay and incubate her eggs. Incubation takes one to two weeks after which tiny, naked young emerge and must make their way to their mother. Young will suckle on mammary patches where milk oozes from the mothers skin. The young will stay in the burrow for four months before venturing out. They are fully developed at one year old.

Conservation

Status: The platypus is considered a species of least concern in Queensland under the *Nature Conservation (Wildlife) Regulation 2006* and is ranked as a low priority for conservation under the Department of Environment and Resource Management's 'Back on Track' species prioritisation framework.

Threats: Platypus are most at threat from reduced stream and river flows during drought and through stream regulation and the extraction of water for agricultural, domestic and industrial purposes. They are also threatened by flooding. Pollution, algal growths, increased siltation and the destruction of river beds all put added pressure on platypus populations.

Recommendations: Maintaining or planting vegetation along waterways will help to stabilise the waterway and provides habitat for the platypus. Keeping waterways free from pollution would also benefit the platypus.

References: Department of Environment and Resource Management, Queensland Government 2010. Conservation Management Profile: Platypus. http://www.derm.qld.gov.au/wildlife-ecosystems/wildlife/az_of_animals/platypus.html. Retrieved April 14 2011. Lunney D, Dickman C, Copley P, Grant T, Munks S, Carrick F, Serena M, Ellis M. 2008. Ornithorhynchus anatinus. In: IUCN 2010. IUCN Red List of Threatened Species. Version 2010.4. www.iucnredlist.org. Accessed 13 April 2011. Map distribution data supplied by Moreton Bay Regional Council and WildNet (DERM). Map produced by Golder Associates ©. Photo supplied by Moreton Bay Regional Council.

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

Distribution

Platypus are found in eastern Australia from the tropics of far north Queensland, to the cooler regions of Tasmania. Within Queensland platypus live in rivers to the east of the great dividing range. Platypus are found throughout the Moreton Bay region.

Priority Number: 28

Squirrel glider

Petaurus norfolcensis

Description

Defining feature: The squirrel glider has a distinctive black stripe that runs from between its eyes to the middle of its back.

Physical description: The squirrel glider has blue-grey to brown-grey fur on top, a white belly and the top two-thirds of its tail is black. The tail is very bushy and averages 27 cm in length. Adult squirrel gliders have a head and body length of about 21 cm. Squirrel gliders are often mistaken for sugar gliders, however the squirrel glider is much larger, has a more pointed face, longer and narrower ears, and a bushier tail.

Habitat

The squirrel glider inhabits dry sclerophyll forest and woodlands. Sclerophyll is a type of vegetation characterised by hard, leathery, evergreen foliage that is specially adapted to prevent moisture loss. This species requires hollow-bearing trees and a mix of eucalypts and other species, including at least one plant that flowers heavily in the winter to ensure a source of food.

Feeding

Squirrel gliders forage in the upper and lower forest canopies and in the shrub understory. They feed on nectar, pollen, flowers, Acacia gum and insects. When other food is scarce in winter the squirrel glider will feed on winter flowers of plants such as the Queensland blue gum.

Breeding

Season: Birth of squirrel gliders occurs throughout the year and likely reflect the availability of food. Females can have up to two litters per year. The young are thought to leave the nest at around six months of age but remain near the nest for another year.

The squirrel glider is nocturnal and lives in family groups of between two and ten members.

Conservation

Status: The squirrel glider is considered to be a species of least concern in Queensland under the *Nature Conservation (Wildlife) Regulation 2006.*

Threats: The squirrel glider is under threat from the loss of habitat through land clearing for agriculture or development. The selective removal of old growth trees removes the hollow bearing trees in which this species nests. The squirrel glider is further threatened by inappropriate fire regimes and predation by foxes and cats.

Recommendations: To help recover the squirrel glider population, their habitat needs to be maintained and, where possible, improved through planting of food and habitat species.

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

Distribution

The squirrel glider is distributed on the east coast of Australia from Cairns to central Victoria and across south-east Queensland, except for the Gold Coast and Toowoomba. They are distributed throughout the Moreton Bay region.

References: New South Wales Parks and Wildlife Service. Threatened Species Information: Squirrel Glider. http://www.environment.nsw.gov.au/resources/nature/tsprofileSquirrelGlider.pdf. Accessed 14 April 2011. New South Wales Department of Environment and Conservation 2011. Squirrel glider profile. http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10604. Accessed 14 April 2011. Map distribution data supplied by Moreton Bay Regional Council and WildNet (DERM). Map produced by Golder Associates ©. Photo supplied by The Queensland Museum.

Priority Number: 29

Black flying-fox

Pteropus alecto

Description

Defining feature: The black flying-fox is a large flying-fox that is an important pollinator and disperser of seeds for rainforest plants. It is often mistaken for the grey-headed flying-fox. However, it can be distinguished by its greater size, darker colour and bare legs.

Physical description: The black flying-fox is a large species, growing up to 26 cm long and weighing up to a kilogram. The body is covered in short black fur, with an incomplete rusty red collar.

Habitat

The black flying-fox inhabits rainforest, eucalypt forests, and swamp forest. During the day they are often found in large roosting camps with thousands of other bats, including grey-headed flying-foxes.

Feeding

The black flying-fox leaves its roosting camp at dusk to feed, finding their food by sight, smell and by following other flying-foxes. Their diet includes rainforest fruits and nectar, and pollen from flowering eucalypts, paperbarks and Banksias. During drought or times when their preferred native food is scarce, the black flying-fox is known to take fruit from orchads.

Breeding

Season: Black flying-foxes mate in autumn and give birth to a single young in late winter or early spring. Young bats are carried around by their mothers, clinging to fur and nipples to hold on. Young flying-foxes mature when they are 18 months old and will be ready to breed at two to three years old.

Conservation

Status: The black flying-fox is considered a species of least concern in Queensland under the *Nature Conservation (Wildlife) Regulation 2006.*

Threats: The black flying-fox is under pressure from the clearing of habitat, which affects their roosting and feeding areas. Individuals are often shot and harassed, and attempts are frequently made to relocate roosting camps that are located near urban areas.

Recommendations: Forest that is home to the black flying-fox should be maintained wherever possible, including weed removal. Orchardists should be encouraged to protect fruit crops with appropriately installed nets.

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

Distribution

The black flying-fox is distributed through coastal and near-coastal areas across northern Australia, through eastern Queensland and down to New South Wales. This species is predominantly found in the south of the Moreton Bay Region.

References: Department of Environment and Resource Management, Queensland Government 2010. Conservation Management Profile: Black Flying-fox. http://www.derm.qld.gov.au/wildlife-ecosystems/wildlife/az_of_animals/black_flyingfox.html. Retrieved April 14 2011. New South Wales Department of Environment and Conservation 2011. Black Flying-fox profile. http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10696. Accessed 14 April 2011. Map distribution data supplied by Moreton Bay Regional Council and WildNet (DERM). Map produced by Golder Associates ©. Photo supplied by A Boyle.

Priority Number: 30

Little red flying-fox

Pteropus scapulatus

Description

Defining feature: The little red flying-fox is one of Australia's smallest flying-foxes and is an important pollinator and seed disperser.

Physical description: The little red flying-fox is reddish-brown in colour and has a light yellow-brown fur patch across its shoulders. This species grows to 21 cm in length and weighs between 200 g and 600 g. The wing membranes are transparent in flight and have pale yellow hairs on the underside.

Habitat

The little red flying-fox lives across a range of different habitat including woodlands, mangroves and, particularly, eucalypt forests. They roost in large groups in trees, leaving at night to search for food.

Feeding

The little red flying-fox is a herbivore and prefers to feed on gum blossoms, where it will travel to dry inland areas in search of these blossoms. This species feeds on a variety of fruit juices, nectar, pollen and small seeds, and is known to raid fruit in orchards.

Breeding

Season: Little red flying-foxes gather in large groups, or camps, of up to 100,000 individuals during November and December to establish breeding pairs. After mating, females will leave the camp and create their own camp, often with females of other flying-fox species. The young are born in April or May.

Young little red flying-foxes are carried by their mother for one month while still suckling. They will then be left at the roost and suckled periodically until they are able to fly. Juveniles will infrequently suckle over the next several months while developing basic skills before becoming independent. Little red flying-foxes become sexually active at 18 months of age.

Conservation

Status: The little red flying-fox is considered a species of least concern in Queensland under the *Nature Conservation (Wildlife) Regulation 2006.*

Threats: There are no major threats to the little red flying-fox. However, it is locally threatened in parts of its home range by the clearance of habitat for development and agriculture.

Recommendations: It is recommended that clearance of the little red-flying-fox's habitat is minimised where possible.

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

Distribution

The little red flying-fox is found across northern Australia from the west of Western Australia, across to central Queensland and through New South Wales and north-eastern Victoria. This species is distributed throughout the Moreton Bay region, including Bribie Island.

References: Department of Environment and Resource Management, Queensland Government 2010. Conservation Management Profile: Little Red Flying-fox. http://www.derm.qld.gov.au/wildlife-ecosystems/wildlife/az_of_animals/little_red_flyingfox.html. Retrieved April 26 2011. Hall L, McKenzie N 2008. Pteropus scapulatus. In: IUCN 2010. IUCN Red List of Threatened Species. Version 2010.4. www.iucnredlist.org. Downloaded on 26 April 2011. McCoy M 2000. Little Red Flying-fox. In: Strahan R (Ed.) 2000. The Mammals Of Australia: Revised Edition. Australia Museum and Reed New Holland. Map distribution data supplied by Moreton Bay Regional Council and WildNet (DERM). Map produced by Golder Associates ©. Photo supplied by A Boyle.

Priority Number: 31

Frilled lizard

Chlamydosaurus kingii

Description

Defining feature: The frilled lizard is characterised by a the presence of a frill around the neck.

Physical description: The body of the frilled lizard is relatively short with a long neck and tail. This lizard is cryptically coloured and varies in body colour from grey-brown or orange-brown to nearly black. The frill is more brightly coloured than the body and varies from yellow to black, with touches of orange and red. The frill is supported in such a manner that when the lizard's mouth is wide open, the frill will fully extend. When not extended the frill lies folded around the neck and shoulders. Males are larger than females measuring 29 cm (snout to vent) and weighing up to 870 g, while females are 23.5 cm in length and weigh 400 g.

Habitat

The frilled lizard inhabits tropical warm temperate forest and woodland with open shrubby grass understorey where it spends most of its time perched on tree branches. The lizard is more numerous and active during the wet season than the dry season. This is a result of an increase in temperature, increased rainfall, increased food and the start of its reproductive period.

Feeding

The frilled lizard feeds on a variety of prey, but their diet is predominantly made up of invertebrates. Frilled lizards usually forage in the morning and early afternoon. They hunt by sitting and waiting in trees for prey, before descending rapidly to capture their prey.

Breeding

Season: Frilled lizards breed in the early wet season from September to October. Adult males fight for mates, displaying their frills and biting each other. One to two clutches of 8-23 eggs are laid from early to mid-wet season from November to February. The eggs are laid in a nest 5-20cm below ground, and usually in sunny areas. Incubation takes two to three months.

Conservation

Status: The frilled lizard is considered a species of least concern in Queensland under the *Nature Conservation (Wildlife) Regulation 2006.*

Threats: The frilled lizard is under threat from bush fires, predation and poaching for the pet trade.

Recommendations: The frilled lizard would benefit from more extensive population monitoring, and further research into the number of lizards that are taken for the pet trade.

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

Distribution

The frilled lizard is distributed across northern Australia, from the Kimberley district, Western Australia, through northern Northern Territory, to Cape York Peninsula and eastern Queensland. This species is predominantly found in the eastern parts of the Moreton Bay Region.

References: Doughty P, Allison A 2009. Chlamydosaurus kingii. In: IUCN 2010. IUCN Red List of Threatened Species. Version 2010.4. www.iucnredlist.org. Accessed 14 April 2011. Toro L 1999. Chlamydosaurus kingii. James Cook University. http://www.jcu.edu.au/school/tbiol/zoology/herp/Chlamydosauruskingii.PDF. Accessed 14 April 2011. Map distribution data supplied by Moreton Bay Regional Council and WildNet (DERM). Map produced by Golder Associates ©. Photo supplied by Mark G Sanders EcoSmart Ecology Pty Ltd.

Priority Number: 32

Land mullet

Bellatorias major / Egernia major

Description

Defining feature: The land mullet is Australia's largest skink.

Physical description: The land mullet is powerfully built and has a fish-like head and body. The body is smooth, shiny, black and covered in fish-like scales. Individuals can reach lengths of 50 cm or more and can live for up to 23 years. Juvenile land mullets tend to be dark brown and often have white or cream spots.

Habitat

The land mullet lives on the edges of coastal rainforests. They are often seen in private gardens near their forest homes, particularly if the garden is well-vegetated.

Feeding

The land mullet forages for food on the forest floor. Juveniles eat mostly insects and other invertebrates. As the land mullet gets older the diet changes with more vegetation consumed. Around 80% of their diet consists of fallen berries and fruit, new leaves and flowers.

Breeding

Season: Land mullets mate in late spring to early summer and give birth to live young three months later. Females usually give birth to four to eight young who will stay around the parents for some time, creating an extended family group. At maturity the young will leave the family home in search of their own territories and mates.

Conservation

Status: The land mullet is considered a species of least concern in Queensland under the *Nature Conservation (Wildlife) Regulation 2006.*

Threats: The land mullet may actually benefit from some forms of human disturbance to their habitat. In particular, activities that create clearings next to habitat with thick cover provide the land mullet with places to bask in the sun next to shelter. However, extensive reduction in their habitat for urban development and agriculture, where no cover is left, is a threat to this species. A reduction in fallen logs within habitat will have a negative impact on the land mullet as they act as protection from predators and places of social interaction for this species.

Recommendations: The land mullet can withstand a certain amount of forest clearance without negative impact on the population. However, habitat needs to be protected from large scale disturbances. In addition, habitat needs to provide sufficient logs for the species. Logs can be off cuts from timber logging that is placed within land mullet habitat.

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

Distribution

The land mullet is found in south-eastern Queensland, down to Gosford in New South Wales. This species is distributed throughout the Moreton Bay region but is predominantly found in south-western areas.

References: Australian Reptile Park 2010. Land Mullet - Egernia major. http://www.reptilepark.com.au/animalprofile.asp?ID=78. Accessed 15 April 2011. Map distribution data supplied by Moreton Bay Regional Council and WildNet (DERM). Map produced by Golder Associates ©. Photo supplied by Mervyn C Mason Golder Associates Pty Ltd.

Priority Number: 33

Feathertail glider

Acrobates pygmaeus

Description

Defining feature: The feathertail glider is the world's smallest gliding mammal. It is also the only Australian mammal that has a feather-like tail.

Physical description: The feathertail glider has an unusual tail, which has short fur on the top and bottom and a fringe of long, stiff hairs on each side that resemble the barbs of a feather. This tail is 10 - 80 mm long and provides grip on twigs and small branches. This species is the size of a small mouse and measures 65 - 80 mm in length and weighs 10 - 14 g. Their coat is uniform mid-grey, with dark patches around the eyes; the underside is lighter. The eyes are large, face forward and are thought to provide nocturnal vision. The feathertail glider has large serrated pads on each toe and sharp claws.

Habitat

The feathertail glider inhabits tall forests and woodlands where it can leap and glide up to 25 m. It is predominantly found in tall, mature and moist forests and it is thought that this species requires complex or mature forests to meet its feeding and nesting requirements.

Feeding

The feathertail glider feeds on nectar, pollen and insects. They forage in a variety of locations from bushes to large trees, and on the ground.

Breeding

Season: The feathertail glider is thought to breed all year round. Females can breed in their first year, while males do not become sexually mature until their second year.

Feathertail gliders nest in large groups of up to twenty individuals. Nests are constructed in almost any available enclosed space including tree hollows, bird boxes, old possum nests and telephone boxes. The gliders build spherical nests from vegetation and bark, and line them with soft, flexible material such as leaves and feathers.

Conservation

Status: The feathertail glider is considered a species of least concern in Queensland under the *Nature Conservation (Wildlife) Regulation 2006.*

Threats: The feathertail glider is at risk from the loss of habitat through deforestation for urban development or agriculture. This species is also preyed upon by a range of introduced predators including foxes and cats.

Recommendations: The feathertail glider would benefit from the protection of known habitat against logging, and the control of introduced prey species.

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

Distribution

The feathertail glider is distributed along the eastern coast of Australia from north Queensland to Victoria. This species is found in the northern and southern areas of the Moreton Bay region.

References: Woodside DP 2000. Feathertail Glider. In: Strahan R (Ed.) 2000. The Mammals Of Australia: Revised Edition. Australia Museum and Reed New Holland. Wikipedia 2011. Feathertail Glider. http://en.wikipedia.org/wiki/Feathertail_Glider. Accessed 26 April 2011. Map distribution data supplied by Moreton Bay Regional Council and WildNet (DERM). Map produced by Golder Associates ©. Photo supplied by The Queensland Museum.

Priority Number: 34

Brolga

Grus rubicunda

Description

Defining feature: The brolga is one of only two cranes found in Australia and is one of Australia's largest flying birds. This bird performs a 'dance' where one to many pairs of birds face each other, crouch down and stretch upwards, trumpet, leap and toss grass and sticks into the air.

Physical description: The brolga is a very large bird standing at 1.3 m tall with a wingspan of up to 2.5 m. Its body is predominantly light grey with a thick band of bare red skin from the beak to the back of the neck. Hanging below the brolga's lower jaw is a black flap of skin known as a dewlap. Their legs are long and black in colour. The bill is relatively large compared to the head and is dark, long and straight. Young birds are darker in colour and don't have the red band or the dewlap.

Habitat

The brolga is dependent upon wetlands, especially shallow swamps where they forage. They are also known to forage in dry grassland, ploughed paddocks or even desert claypans.

Feeding

Brolga are omnivorous and feed using their heavy, straight bill as a 'crowbar' to probe the ground to get to sedge roots and tubers which is their preferred food. They also feed on large insects, frogs and a wide range of invertebrates including freshwater molluscs and crustaceans.

Breeding

Season: Brolga nests are a platform constructed from grasses and sticks, held together by mud, on an island or in the water. The brolga lays two eggs from winter to autumn and the parents share in incubation and subsequent rearing of young. The young reach maturity at 90 to 100 days old but will remain with the parents until the start of the next breeding season.

The famous brolga 'dance' is thought to be a courtship or bonding display.

Conservation

Status: The brolga is considered to be a species of least concern in Queensland under the *Nature Conservation (Wildlife) Regulation 2006.*

Threats: The brolga is under pressure from the loss of wetland habitat through clearing and draining for agriculture and flood mitigation. Activities that threaten the brolga include the use of pesticides and herbicides, predators, and inappropriate burning regimes. Although no longer common, brolga's were often poisoned or shot because drainage pathways would lead them to feed on crops.

Recommendations: The management and reintroduction of ecologically sustainable water flows to wetland habitat will benefit the brolga. Fencing off breeding areas from livestock and undertaking predator management will help prevent losses of chicks and eggs.

Distribution

The brolga is abundantly distributed through the northern tropics of Australia, but is sparse further south. In the Moreton Bay area it has been recorded near Pumicestone Road, Toorbul, Bells Creek, Redcliffe Airport and Greens Road, Griffin.

Note: This species is thought to occur within Moreton Bay region; however limited to no distribution records are available. Records are known immediately adjacent to Moreton Bay region. Council welcomes additional information on the whereabouts of this species.

References: New South Wales Department of Environment and Conservation 2011. Brolga profile. http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10382. Accessed 15April 2011. Department of Sustainability and Environment, 2003. Action Statement Flora and Fauna Guarantee Act 1988 No. 119: Brolga. http://www.dse.vic.gov.au/CA256F310024B628/0/D3A092ECF3F22EB0CA2570ED0007797C/$File/119+Brolga+2001.pdf. AcceAprilMoretonIMoreton. Photo supplied by The Queensland Museum.

Priority Number: 35

Environment

Moreton Bay fig

Ficus macrophylla

Description

Defining feature: The Moreton Bay fig is known for its beautiful buttress tree roots (projecting roots on the side of the tree), which are also known for damaging footpaths.

Physical description: The Moreton Bay fig is a medium to large evergreen tree that grows 15 m to 35 m high and is almost as wide. The leaves are large and oval to elliptical in shape, 100 - 250 mm long and are dark glossy green above and rusty beneath. The bark is grey-brown and often marked with blemishes. The fruits are 20 - 25 mm in diameter, and are yellowish then turn purple when ripe. In nature this fig is a 'strangler fig', which means that the seed germinates in the canopy of a host tree where the plant grows as an epiphyte (living off another tree) while sending down roots to ground level, eventually enlarging and enveloping the host tree and becoming free standing.

Habitat

The Moreton Bay fig is a rainforest species and requires a good supply of water to its roots and lots of space to grow.

Lifecycle

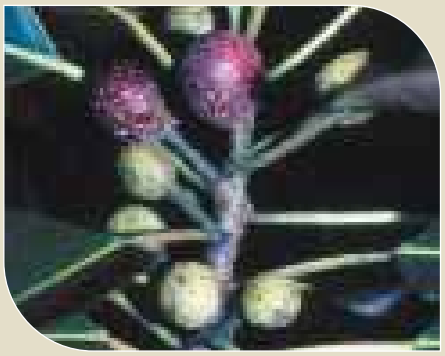
The Moreton Bay fig has a mutual relationship with fig wasps. Figs can only be pollinated by fig wasps, while fig wasps only reproduce in fig flowers. The Moreton Bay fig fruits all year round but is most abundant in February to May. The seeds of the Moreton Bay fig are readily dispersed by birds that forage on the fruit.

Conservation

Status: Moreton Bay fig is considered to be a species of least concern in Queensland under the *Nature Conservation (Wildlife) Regulation.*

Threats: The roots of the Moreton Bay fig are surface feeding, rather than being deep roots that obtain nutrients far below the ground. Consequently this makes the Moreton Bay fig susceptible to the threat of earth compaction as it impedes the roots ability to obtain nutrients. The roots and buttress are also sensitive to herbicides used to control weeds.

Recommendations: Fencing around Moreton Bay figs can help to protect them from earth compaction. Spraying herbicides around the roots and buttress should be avoided.



Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

Distribution

The Moreton Bay fig is widely distributed throughout the Moreton Bay Region.

References: Starr F, Starr K, Loope L 2003. Ficus macrophylaa: Moreton Bay Fig. United States Geological Survey - Biological Resources Division. http://www.hear.org/starr/hiplants/reports/pdf/ficus_macrophylla.pdf. Accessed 15 April 2011. Australian Native Plants Society, 2008. Ficus macrophylla. http://anpsa.org.au/f-mac.html. Accessed 15 April 2011. Map distribution data supplied by Moreton Bay Regional Council and WildNet (DERM). Map produced by Golder Associates ©. Photo supplied by the Moreton Bay Regional Council.

Priority Number: 36

Short-beaked echidna

Tachyglossus aculeatus

Description

Defining feature: The short-beaked echidna is one of only three egg-laying mammals (monotremes) in the world.

Physical description: The short-beaked echidna is covered in spines, with the exception of the underside, face and legs. These spines reach 5 cm in length, and are actually modified hairs. In between the spines is fur which ranges in colour from honey to a dark reddish-brown to black. The fur colour varies depending on their location, with echidnas in the hotter, northern regions being lighter in colour. Short-beaked echidnas have a snout that is 7 - 8 cm long and very stiff, allowing them to break up logs and termite mounds in the hunt for food. Adults vary in size from 35 cm to 53 cm long; males weigh about 6 kg, while females weigh about 4.5 kg. If disturbed, the short-beaked echidna will roll up into a ball, presenting their spines in every direction.

Habitat

The short-beaked echidna is often found among rocks, in hollow logs and in holes among tree roots. They will often burrow into the soil, or shelter under bushes during wet or windy weather.

Feeding

Termites are the food of choice for the short-beaked echidna. The echidna has a keen sense of smell and uses its long, sticky tongue to capture prey. Because it has no teeth, it has to grind up food between its tongue and the bottom of its mouth. Echidnas will eat other food including grubs, larvae and worms.

Breeding

Season: Unlike most other mammals, short-beaked echidnas produce young from eggs, rather than giving birth to live young. The breeding season is from the end of June to September, during which the female develops a pouch in which she lays a single egg two weeks after mating. The egg will take around ten days to hatch, after which the young echidna will stay in the pouch for about three months. Specialised pores in the skin inside her pouch produce milk for the young to suckle. Young leave the pouch at around three months due to their growing spines, but will not be fully weaned until several months of age.

Conservation

Status: The short-beaked echidna is considered to be a species of least concern in Queensland under the *Nature Conservation (Wildlife) Regulation 2006.*

Threats: The short-beaked echidna is less affected by land clearance than other native animals as they have the ability to live almost anywhere when there is a supply of ants. Despite their covering of spines they do have natural predators such as eagles and Tasmanian devils. Echidnas are also easily killed by cars or roaming dogs.

Recommendations: Many short-beaked echidnas are killed on the roads so care should be taken to avoid them when driving, particularly at night.

References: Aplin K, Dickman C, Salas L, Helgen K. 2008. Tachyglossus aculeatus. In: IUCN 2010. IUCN Red List of Threatened Species. Version 2010.4. www.iucnredlist.org. Accessed 15 April 2011. New South Wales National Parks and Wildlife Service. Short-beaked Echidnas. http://www.lcrtp.com.au/environment_and_awards/Short-beaked%20Echidna.pdf. Accessed April 15 2011. Parks and Wildlife Service Tasmania, 2009. Short-Beaked Echidna, Tachyglossus aculeatus. http://www.parks.tas.gov.au/index.aspx?base=4796. Accessed 15 April 2011. Map distribution data supplied by Moreton Bay Regional Council and WildNet (DERM). Map produced by Golder Associates ©. Photo supplied by The Queensland Museum.

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

Distribution

Short-beaked echidnas are spread throughout Australia, including Tasmania and a number of offshore islands. This species is found throughout the Moreton Bay region, including Bribie Island.

Priority Number: 37

Eastern osprey

Pandion cristatus

Description

Defining feature: The eastern osprey is a large hawk that feeds on fish.

Physical description: The eastern osprey is a large bird that grows to 65 cm long. It is dark brown above and white below with a white head and neck, a dark line through their yellow eyes, a mottled brown 'necklace' and bare grey legs. Males and females are similar in appearance but there are differences in size; females are larger weighing in between 1.2 - 1.9 kg, while males weigh between 1.0 - 1.1 kg. Juvenile eastern osprey's look similar to adults but have darker yellow orange eyes.

Habitat

Eastern ospreys occur predominantly in coastal habitats, but are also found in terrestrial wetlands as they are known to follow major rivers inland. This species requires extensive areas of open fresh, brackish or salt water for foraging for food. Such areas include inshore waters, bays, beaches, coastal cliffs, estuaries, mangrove swamps, reservoirs and large lakes.

Feeding

Eastern ospreys predominantly feed on fish, but have also been known to eat molluscs, crustaceans, insects, reptiles, birds and mammals. The osprey normally feeds during the day by soaring or circling above a body of water and scanning for fish. Once prey is located they will hover for a moment before diving down and snatching the prey from the water with their feet, sometimes submerging up to a metre below the surface.

Breeding

Season: The breeding season of the eastern osprey is from April to February. Females lay a clutch of two to three eggs that are whitish with brownish spots or blotches. The eggs are incubated by both parents for 33 - 38 days, after which they remain in the nest for another nine to eleven weeks before fledging (when wings are developed enough for flight). Once young have fledged they will continue to return to the nest for food for another two to three months.

The eastern osprey constructs a nest that looks like a large bowl and is mostly made of sticks. Nesting predominantly occurs in tall (usually dead) trees in a variety of coastal habitats from open woodland to open forest within 1 - 2 km of water. Nests can also be constructed in a variety of other habitats including on cliffs, rocks, on the ground, deserted beaches, jetties and on artificial nest platforms.

Conservation

Status: The eastern osprey is considered to be a species of least concern in Queensland under the *Nature Conservation (Wildlife) Regulation 2006.*

Threats: The eastern osprey is most at threat from habitat loss and degradation, in particular the loss of breeding habitat and nesting trees. Smaller threats to this species include the ingestion of prey items that contain pollutants or fishing tackle, competition for food with fisheries, and accidental mortality through collision with power lines or wind turbines.

Recommendations: To aid the conservation of the eastern osprey a buffer zone of vegetation should be established around nest zones to minimise disturbance. If known habitat can not be saved then the relocation of nests should be undertaken.

References: Department of Sustainability, Environment, Water, Population and Communities 2011. Pandion cristatus in Species Profile and Threats Database, Department of Sustainability, Environment, Water, Population and Communities, Canberra. http://www.environment.gov.au/sprat. Accessed 18 Apr 2011. New South Wales Scientific Committee 2009. Eastern Osprey Pandion cristatus. Review of current information in NSW. June 2009. Unpublished report arising from the Review of the Schedules of the Threatened Species Conservation Act 1995. NSW Scientific Committee, Hurstville. Map distribution data supplied by Moreton Bay Regional Council and WildNet (DERM). Map produced by Golder Associates ©. Photo supplied by the Moreton Bay Regional Council.

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

Distribution

The eastern osprey is seen in eastern (coastal) areas of the Moreton Bay region.

Priority Number: 38

Emu

Dromaius novaehollandiae

Description

Defining feature: The emu is found only in Australia and is the largest bird on the continent standing up to nearly 2 m high.

Physical description: The emu is a very large flightless bird with very long legs and neck. Adult emu are covered in shaggy grey-brown feathers except for their upper neck and head which is near naked and the skin is bluish-black. Young emu are striped with a dark black-brown over a buff coloured down.

Habitat

The main habitat for the emu is open grassland, sclerophyll forest and savanna woodland. Sclerophyll is a type of vegetation characterised by hard, leathery, evergreen foliage that is specially adapted to prevent moisture loss. Emus are rarely found in rainforest or very dry areas. These birds can move large distances in the search for food and water.

Feeding

The emu is omnivorous and eats a variety of food including seeds, fruits, insects and the growing shoots of plants. They also eat other small animals and animal droppings.

Breeding

Season: Emu nesting takes place over winter. The nest is a large platform of grass on the ground up to two metres in diameter. The female will lay up to nine large blue-green eggs, before leaving. The male will then sit on the eggs, incubating them for about eight weeks without eating, drinking or leaving the nest. He will then look after the chicks by himself for up to six months after hatching.

Conservation

Status: The emu is considered to be a species of least concern in Queensland under the *Nature Conservation (Wildlife) Regulation 2006.*

Threats: The emu is at threat from frequent large fires that lead to a significant reduction in food supplies. Fires that occur during the breeding season can also lead to the destruction of eggs.

Recommendations: Fires that are deliberately set as part of a large fire regime should be avoided in areas that are known to provide habitat for the emu, particularly during the breeding season.

Distribution

The emu is widespread across mainland Australia. Sightings in Moreton Bay have been on Bribie Island. However, these are rare and it is thought that the emu may have become locally extinct.

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

References: Northern Territory Government Parks and Wildlife Commission 2011. Threatened Species of the Northern Territory: Emu Dromaius novaehollandiae.Department of Natural Resources, Environment and the arts. http://www.nt.gov.au/nreta/wildlife/animals/threatened/pdf/birds/emu_vu.pdf. Accessed 18 April 2011. Birds Australia. 2011. Birds in Backyards: Emu. http://birdsinbackyards.net/species/Dromaius-novaehollandiae. Accessed 18 April 2011.Australian Reptile Park. 2011. Emu. http://www.reptilepark.com.au/animalprofile.asp?id=23. Accessed 18 April 2011. Map distribution data supplied by Moreton Bay Regional Council and WildNet (DERM). Map produced by Golder Associates ©. Photo supplied by Dean Ingwersen Birds Australia.

Priority Number: 39

Fleay's frog

Fleay's barred frog

Mixophyes fleayi

Description

Defining feature: Fleay's frog has a steeply sloped, blunt snout. It is distinguishable from other species by spots on its sides and the triangular pattern on the back of the thighs. They also have a distinctive eye colour in which the top third of the iris is silver or pale blue, while the remaining part of the iris is brown.

Physical description: Fleay's frog is a large frog that can grow up to 90 mm long and is adapted to living underground (fossorial). The top of the frog is light to dark brown with darker marbling. The bottom surface and limbs are usually yellow. The throat and underside of the thighs may be speckled with brown. The upper side of the thighs are grey-brown with seven to eight narrow, black bands.

Habitat

Fleay's frog is found along small streams that are close to their population origin in montane rainforest and open forest communities adjoining rainforest. Adults may be found in leaf litter or along watercourses.

Feeding

Fleay's frog mainly feeds on small insects and other invertebrates that live on the forest floor.

Breeding

Season: Fleay's frog breeds in spring and summer. Frogs do not appear to breed during or immediately after heavy rain when water flow is high, presumably due to the risk of their eggs and tadpoles being washed downstream.

Fleay's frog reproduces by building a nest in shallow running water in flat sections of mountain streams. They deposit between 600 to 1,300 eggs into the nest, or in some cases directly onto rocks.

Conservation

Status: Fleay's frog is listed as endangered in Queensland under the *Nature Conservation (Wildlife) Regulation 2006* and nationally under the *Environment Protection and Biodiversity Conservation Act 1999.*

Threats: The direct threats to Fleay's frog are currently uncertain, however they are likely to be similar to other threatened frog species. Threats to frog populations result from large areas of habitat being degraded by feral animals, domestic stock and through the invasion of weeds. The clearing of habitat, both directly and upstream, is likely to affect flow regimes and water quality as well as destroy the frog's habitat. Fleay's frog is also likely to be affected by chytridiomycosis, an infectious disease caused by the chytrid fungus that affects amphibians worldwide.

Recommendations: Gardens should be kept free of chemicals including insecticides, pesticides and fertilisers as Fleay's frog has very thin skin that absorbs chemicals easily. The frogs can also become sick or die after eating poisoned insects. Care should be taken to prevent amphibian populations from becoming infected with chytridiomycosis by preventing further spread of the amphibian chytrid within Australia.

References: Department of Sustainability, Environment, Water, Population and Communities 2011. Mixophyes fleayi in Species Profile and Threats Database, Department of Sustainability, Environment, Water, Population and Communities, Canberra. http://www.environment.gov.au/sprat. Accessed 6 April 2011. The Animal Files 2011. Fleay's Barred Frog. http://www.theanimalfiles.com/amphibians/frogs/fleays_barred_frog.html. Accessed 6 April 2011. Hines H, Meyer E, Newell D, Clarke J, Hero J-M 2004. Mixophyes fleayi. In: IUCN 2010. IUCN Red List of Threatened Species. Version 2010.4. www.iucnredlist.org. Accessed 18 April 2011. Photo supplied by Mark G Sanders EcoSmart Ecology Pty Ltd.

Distribution

Fleay's frog habitat within Queensland includes permanent and semi-permanent freshwater streams between 100 m to 1,000 m in altitude. Specifically in rainforest and other forest communities of the McPherson, Main and Conondale Ranges, Mt Tamborine, and the Mistake and Bunya Mountains.

Note: This species is thought to occur within Moreton Bay region; however limited to no distribution records are available. Records are known immediately adjacent to Moreton Bay region. Council welcomes additional information on the whereabouts of this species.

Priority Number: 40

Regent honeyeater

Anthochaera phrygia

Description

Defining feature: The regent honeyeater is a striking yellow and black bird that is endemic to south-eastern Australia.

Physical description: The regent honeyeater has a black head, neck, throat, upper breast and bill, while the back and lower breast are pale lemon in colour with a black scalloped pattern. Its wings and tail feathers are edged with bright yellow. The regent honeyeater is 20 - 24 cm in length, with a wingspan of 30 cm and a weight of 39 - 45 g. The head has a patch of warty, yellowish to pinkish skin around the dark red-brown eye, and a sturdy, downward curving black bill. The plumage of the juveniles is much duller and browner than that of adult birds, and their facial skin is smooth and blue-grey in colour.

Habitat

The regent honeyeater inhabits dry open forest and woodland, particularly box-ironbark eucalypt woodland. At times of food shortage regent honeyeaters will also use other woodland types and wet coastal lowland forest dominated by eucalyptus.

Feeding

The regent honeyeater predominantly feeds on the nectar from a wide range of gum trees and mistletoes. Two key gum species are yellow box and swamp mahogany. Nectar and fruit from mistletoes are eaten during the breeding season. When nectar is scarce lerp and honeydew comprise a large proportion of the diet. Insects make up about 15% of the total diet and are important components of the diet of young.

Breeding

Season: The regent honeyeater breeds from May to March, but peaks in breeding activity from September to November. The female lays up to three eggs and then incubates them for 14 days. Once hatched the young will be cared for and fed by both parents for 16 days until their wings have developed enough for flight and they leave the nest. They become fully independent three to four weeks after leaving the nest.

Regent honeyeaters normally nest in the canopy of forests or woodlands, in the top of tall trees. The nest is constructed by the female and is made from bark, grass, twigs and other materials, such as wool.

Conservation

Status: The regent honeyeater is listed as endangered in Queensland under the *Nature Conservation (Wildlife) Regulation 2006* and nationally under the *Environment Protection and Biodiversity Conservation Act 1999.*

Threats: The decline of the regent honeyeater is mainly a result of the loss, fragmentation and degradation of their habitat. Such habitat decline is attributable to clearance of forest for agriculture and grazing by livestock preventing native vegetation from regenerating. The regent honeyeater is also in competition for resources with larger, more aggressive honeyeaters, and at threat from predation by other birds.

Recommendations: To help recovery of the regent honeyeater population, key breeding and foraging habitats need to be protected and enhanced. Habitats can be enhanced through planting of vegetation in key areas, fencing off livestock and by protecting land from development. It is also suggested that a captive population of this species be kept.

References: Department of Sustainability, Environment, Water, Population and Communities 2011. Anthochaera phrygia in Species Profile and Threats Database, Department of Sustainability, Environment, Water, Population and Communities, Canberra. Available from: http://www.environment.gov.au/sprat. Accessed 18 Apr 2011 New South Wales Department of Environment and Conservation 2011. Regent Honeyeater. http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10841. Accessed 18 April 2011. Map distribution data supplied by Moreton Bay Regional Council and WildNet (DERM). Map produced by Golder Associates ©.
Photo supplied by Dean Ingwersen Birds Australia

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

Distribution

The regent honeyeater is found from south-eastern Queensland to north-eastern Victoria. It is predominantly found in northern areas of the Moreton Bay region and Bribie Island.

Priority Number: 41

Southern giant-petrel

Macronectes giganteus

Description

Defining feature: The southern giant-petrel is the largest petrel, growing up to 100 cm in length with a wingspan between 150 and 210 cm.

Physical description: The southern giant-petrel is a large seabird. Adults are grey-brown with a faded and mottled-white head, neck and breast. The underwing has a pale leading edge and differentiates it from similar species. Some adults are all white with only a few small black speckles, although this is rare.

Habitat

The southern giant-petrel is a marine bird that occurs in Antarctic to subtropical waters. During summer this bird mainly occurs over Antarctic waters. In winter this species is thought to concentrate north of 50° S and is commonly seen off the coast of Australia, New Zealand, South America and South Africa. It occurs in both open ocean and inshore waters and is attracted to land at sewage outfalls where it scavenges.

Feeding

The southern giant-petrel is an opportunist scavenger and predator. It will commonly predate on a variety of small seabirds including albatrosses and penguins, as well as octopus, squid and krill. It also scavenges over land and regularly follows ships scavenging for bait and off cuts, often resulting in birds becoming hooked and drowning.

Breeding

Season: The southern giant-petrel breeds yearly with pairs returning to their breeding sites in August and September. A single egg is typically laid between September and October, and will hatch 59 days later. Fledging occurs at around 115 days of age, after which young will disperse for several years. The southern giant-petrel will then return at 6 - 7 years of age as a reproductive adult to the same colony in which it was born.

Conservation

Status: The southern giant-petrel is listed as endangered in Queensland under the *Nature Conservation (Wildlife) Regulation 2006* and nationally under the *Environment Protection and Biodiversity Conservation Act 1999.*

Threats: The biggest threat to the southern giant-petrel is mortality as a result of long-line fishing. Disturbance to breeding sites associated with research stations or human visitation can result in reduced breeding success. Southern giant-petrels are also threatened by predation by, or can have their breeding habitat degraded, by introduced pests such as caribou, sheep, rabbits, cats, rats and foxes.

Recommendations: Fishing vessels can undertake by-catch mitigation measures which will help to decrease the number of southern giant-petrels accidentally killed by fishing vessels. Pest eradication should be undertaken on remote islands and there should be minimal human presence where possible. Breeding sites should be protected.

References: Department of Sustainability, Environment, Water, Population and Communities 2011. Macronectes giganteus in Species Profile and Threats Database, Department of Sustainability, Environment, Water, Population and Communities, Canberra. Available from: http://www.environment.gov.au/sprat. Accessed 18 Apr 2011. New South Wales Department of Environment and Conservation 2011. Southern giant-petrel. http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=109121. Accessed 18 April 2011. Map distribution data supplied by Moreton Bay Regional Council and WildNet (DERM). Map produced by Golder Associates ©.
Photo supplied by Chris Tzaros Birds Australia.

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

Distribution

The southern giant-petrel is widespread throughout the Southern Ocean and has a circumpolar range from Antarctica to 20° S. It breeds on six Antarctic and subantarctic islands in Australian territory including Macquarie Island in the Southern Ocean and Frazier Island in the Australian Antarctic Territories.

Priority Number: 42

Coxen's fig-parrot

Cyclopsitta diophthalma coxeni

Description

Defining feature: Coxen's fig-parrot is a small, green parrot with a stout build and a short tail.

Physical description: The feathers of adult birds are a rich green above and yellow green below, and the sides of the breast are yellow. The flight feathers are deep blue and dark grey, with red markings on the inner edges. The beak of Coxen's fig-parrot is two-toned, with pale-grey at the base and black towards the tip. Male and female fig-parrots differ slightly in their appearance with males having a blue forehead with scattered red feathers and cheeks that are orange-red and are bordered below by a band of mauve-blue. The females have a blue coloured forehead with little or no scattered red feathers and smaller and duller orange-red cheeks. This bird measures 13 cm to 16 cm in length.

Habitat

Coxen's fig-parrot is found in rainforest habitat including subtropical and dry rainforest. The birds preferred habitat is mostly lowland subtropical rainforest, however much of this has now been cleared, forcing the species into habitat that is drier and more hilly. This species prefers areas around water that support figs and other trees with fleshy fruits upon which they feed. Coxen's fig-parrot has also been seen in coastal eucalypt/melaleuca forest where fig densities are high (e.g. near Bundaberg).

Feeding

Coxen's fig-parrot is omnivorous and feeds mainly on the seeds of fig trees and occasionally on nectar, insect larvae and lichen. This species is known to favour the Moreton Bay fig and the green-leaved strangler fig, but will also eat a range of other native and introduced species when figs become scarce. Coxen's fig-parrot mainly forages among the upper branches and foliage of tall trees, often returning to the same tree for several successive days.

Breeding

Season: The breeding season for Coxen's fig-parrot is from October to January. A nest is made in a chamber that is excavated on the underside of a decaying limb or trunk of a dead or living tree. The female normally lays two eggs, but the incubation and fledging details for this species are unknown.

Conservation

Status: Coxen's fig parrot is listed as endangered in Queensland under the *Nature Conservation (Wildlife) Regulation 2006* and nationally under the *Environment Protection and Biodiversity Conservation Act 1999.*

Threats: The decline in the number of Coxen's fig-parrots at the turn of the twentieth century was most likely due to the loss of habitat as it was cleared for urban development and agricultural purposes. This species is still at threat from loss of habitat. Much of the remaining habitat is at threat of degradation from invasive weeds, logging and fragmentation.

Recommendations: The protection and enhancement of Coxen's fig-parrot habitat could help the survival of this species, including the development of management guidelines for logging operations, the regulation of land use and the rehabilitation of habitat. The establishment of a captive breeding program is recommended to protect the future of Coxen's fig-parrot.

References: Department of Sustainability, Environment, Water, Population and Communities 2011. Cyclopsitta diophthalma coxeni in Species Profile and Threats Database, Department of Sustainability, Environment, Water, Population and Communities, Canberra. http://www.environment.gov.au/sprat. Accessed 19 Apr 201. New South Wales Parks and Wildlife Service. Threatened Species Information: Coxen's Fig-parrot. http://www.environment.nsw.gov.au/resources/nature/tsprofileDoubleeyedFigParrot.pdf. Accessed 19 April 2011. Department of Environment and Resource Management, Queensland Government 2010. Conservation Management Profile: Coxen's Fig-parrot. http://www.derm.qld.gov.au/wildlife-ecosystems/wildlife/az_of_animals/doubleeyed_figparrot_coxens.html. Retrieved April 18 2011. Map distribution data supplied by Moreton Bay Regional Council and WildNet (DERM). Map produced by Golder Associates ©.
Illustration supplied by Sally Elmer

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

Distribution

Coxen's fig-parrot is distributed from Gympie in south-eastern Queensland to the Richmond River in north-eastern New South Wales, and west to the Bunya Mountains, Main Range and Koreelah Range. This species has been found in both northern and southern parts of the Moreton Bay region.

Priority Number: 43

Swift parrot

Lathamus discolor

Description

Defining feature: The swift parrot is endemic to Australia and undertakes the longest migration of any parrot species worldwide.

Physical description: The swift parrot is a small, streamlined parrot that is bright green with red patches around the bill, throat and forehead. The red patches on the throat are bordered with yellow. This parrot is 25 cm long with a wingspan of up to 36 cm. The wings have bright red patches underneath. This parrot can be confused with similar looking lorikeets with which it often flies and feeds. However, it is distinguished by its long, thin tail which is dark red, and its flute-like chirruping call. Swift parrots are usually seen in small parties of up to thirty birds and can occasionally be seen in larger flocks of several hundred birds around sources of abundant food.

Habitat

The swift parrot inhabits dry eucalypt forest and woodland. Swift parrots breed only in Tasmania and have been recorded in a variety of eucalypt forests and woodlands that are dominated by the Tasmanian blue gum. During winter it migrates to the forests and woodlands of mainland Australia where eucalypts are flowering. In Queensland, the narrow-leaved red ironbank, red gum forests and yellow box forest are commonly inhabited.

Feeding

The swift parrot actively forages for food in medium to large trees, occasionally coming to the ground to feed on fallen food and to drink. This parrot feeds mostly on nectar from eucalypts, but also eats some insects and lerps (a group of small eucalypt sap sucking insects), seeds and fruit. During the breeding season, nectar from the flowers of Tasmanian blue gum is the principal food source. However, nectar from the swamp gum is an important foraging resource in years when there is little blue gum flowering.

Breeding

Season: The swift parrot breeding season is from September to January. Most birds will arrive in Tasmania from their mainland wintering range in mid-September with nesting starting in late September and laying in October and November. Females lay three to five eggs that hatch after about 30 days and will leave the nest at six to seven weeks old. The swift parrot migrates back to the mainland in autumn. The swift parrot has specific breeding requirements; a reduction in the flowering of Tasmanian blue gum can lead to reduced breeding success.

Conservation

Status: The swift parrot is listed as endangered in Queensland under the *Nature Conservation (Wildlife) Regulation 2006* and nationally under the *Environment Protection and Biodiversity Conservation Act 1999*.

Threats: The swift parrot has been affected by population declines as a result of a reduction in its natural habitat through clearing for agriculture and development, both on the mainland and Tasmania. Swift parrots are specialist nectarivores and are dependent on flowering gum trees in both parts of its range making them vulnerable to the loss of key forage tree species, particularly Tasmanian blue gums.

Recommendations: To help the recovery of the swift parrot population, a number of conservation actions would be beneficial including the management and rehabilitation of habitats and the reduction of selective logging of nesting and foraging tree species.

References: Department of Sustainability, Environment, Water, Population and Communities 2011. Lathamus discolour in Species Profile and Threats Database, Department of Sustainability, Environment, Water, Population and Communities, Canberra. http://www.environment.gov.au/sprat. Accessed 19 Apr 2011. New South Wales Department of Environment and Conservation 2011. Swift parrot. http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10455. Accessed 18 April 2011. Map distribution data supplied by Moreton Bay Regional Council and WildNet (DERM). Map produced by Golder Associates ©. Photo supplied by Chris Tzaros Birds Australia.

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

Distribution

The swift parrot is endemic to south-eastern Australia and breeds only in Tasmania where it is most widespread along the eastern coast of Saint Helens. They return to the mainland in winter where they are distributed in Victoria and New South Wales, with smaller populations in south-eastern Queensland, the Australian Capital Territory and south-eastern South Australia.

Priority Number: 44

Nightcap plectranthus

Plectranthus nitidus

Description

Defining feature: The nightcap plectranthus is a small shrub originally known from the Nightcap National Park in New South Wales.

Physical description: The nightcap plectranthus is a small shrub that grows to between 30 cm and 150 cm tall. The leaves are rounded and fleshy with serrated edges, and are green on the upper surface and purple underneath. The branches are erect and sparsely covered in short hairs. The flower of the nightcap plectranthus is blue to mauve and is tubular in shape.

Habitat

Nightcap plectranthus grows on rocky cliff faces or among rocky outcrops and boulders in sites that are often damp and sheltered by the adjacent rainforest.

Lifecycle

The nightcap plectranthus flowers from February to May but little else is known about the ecology of this species.

Conservation

Status: Nightcap plectranthus is listed as endangered in Queensland under the *Nature Conservation (Wildlife) Regulation 2006* and nationally under the *Environment Protection and Biodiversity Conservation Act 1999.*

Threats: Historically, land clearance for urban development and agriculture has been a threat to the nightcap plectranthus. Current threats for this species include competition for habitat from introduced weeds (Crofton weed, mistflower and lantana), fire, habitat modification that leads to the removal of shade, and continued habitat loss.

Recommendations: To help recover populations of the nightcap plectranthus it is important that land managers are aware of the species and that actions are taken to protect habitat. It is recommended that habitat in which populations of this species are known, or suspected, should be protected and weed control should be undertaken.

Distribution

Nightcap plectranthus is found in south-east Queensland and north-east New South Wales. There are six known locations of this species within Queensland: two in Springbrook National Park, the Hinze Dam catchment, Numinbah, the Land Warfare Centre near Canungra and Mount Glorious. Populations are widely separated.

Note: This species is thought to occur within Moreton Bay region; however limited to no distribution records are available. Records are known immediately adjacent to Moreton Bay region. Council welcomes additional information on the whereabouts of this species.

References: Department of Sustainability, Environment, Water, Population and Communities 2011. Plectranthus nitidus in Species Profile and Threats Database, Department of Sustainability, Environment, Water, Population and Communities, Canberra. http://www.environment.gov.au/sprat. Accessed 19 April 2011. New South Wales Department of Environment and Conservation 2011. Nightcap Plectranthus. http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10638. Accessed 18 April 2011. New South Wales Parks and Wildlife Service. Threatened Species Information: Nightcap Plectranthus. http://www.environment.nsw.gov.au/resources/nature/tsprofile-PlectranthusNitidus.pdf. Accessed 19 April 2011. Photo supplied by the Moreton Bay Regional Council.

Priority Number: 45

Yellow swamp orchid

Phaius bernaysii

Description

Defining feature: The yellow swamp orchid is a ground-dwelling orchid that is only found on Stradbroke Island and possibly Moreton Island.

Physical description: The yellow swamp orchid is a ground-dwelling orchid that grows up to 2 m tall and can form clumps up to 1 m wide. Flowers are fleshy, sulphur-yellow inside, white outside and measure 10 cm long by 11 cm wide. This species is very similar to *Phaius australis* and is only distinguishable by flower colour (on comparison *Phaius australis* flowers are cinnamon-brown on the inside and white on the outside).

Habitat

The yellow swamp orchid typically grows in low-lying areas where soils are almost always damp, but not flooded for lengthy periods. It is known to grow along the margins between open forest/woodland and sedgeland, along the perimeter of a swamp, often in fairly shady environment.

Lifecycle

The yellow swamp orchid flowers from September to November. Little else is known about the ecology of this species.

Conservation

Status: The yellow swamp orchid is listed as endangered in Queensland under the *Nature Conservation (Wildlife) Regulation 2006* and nationally under the *Environment Protection and Biodiversity Conservation Act 1999.*

Threats: The main threats identified for the yellow swamp orchid are illegal collection, human activities that affect the hydrology of the swamp, and inappropriate fire regimes.

Recommendations: Recommendations for the survival of the yellow swamp orchid include monitoring and protecting existing populations, controlling invasive weeds in known habitat, managing hydrology that may affect the species, modifying fire regimes, and raising awareness about the species with communities in order to reduce illegal collecting.

Distribution

The yellow swamp orchid has been recorded on Stradbroke Island, near Myora and Bribie Island in Queensland. There is also a suspected population on Moreton Island.

Note: This species is thought to occur within Moreton Bay region; however limited to no distribution records are available. Records are known immediately adjacent to Moreton Bay region. Council welcomes additional information on the whereabouts of this species.

References: Department of Sustainability, Environment, Water, Population and Communities 2011. Approved Conservation Advice (s266B of the Environment Protection and Biodiversity Conservation Act 1999): Approved Conservation Advice for Phaius bernaysii. http://www.environment.gov.au/biodiversity/threatened/species/pubs/4918-conservation-advice.pdf. Accessed April 19 2011. Wetlandinfo Species Information Phaius bernaysii.Department of Environment and Resource Management, Queensland Government. http://www.epa.qld.gov.au/wetlandinfo/site/factsfigures/FloraAndFauna/Species/12723.html. Retrieved April 19 2011. Photo supplied by Jon Cara.

Priority Number: 46

Oxleyan pygmy perch

Nannoperca oxleyana

Description

Defining feature: The oxleyan pygmy perch is a small fish that has a distinctive round black spot with an orange border on its tail.

Physical description: The oxleyan pygmy perch grows up to 5 cm long and is light olive-brown in colour with a blue ring around the eye. The fish is darker on its back and mottled on its side, and has a distinctive round black spot with orange border at the base of its tail fin. The fins are transparent for the majority of the year except during the breeding season when the anal fins turn black and tail fin scarlet.

Habitat

The oxleyan pygmy perch prefers to live in slow flowing or still water that is slightly acidic and organically stained, in *Banksia*-dominated coastal heathland (wallum) swamps and streams. It shelters near or within emergent vegetation or among the roots of plants growing along stream banks.

Feeding

The oxleyan pygmy perch feeds predominantly on freshwater crustaceans, aquatic insects and their larvae. They also eat smaller amounts of algae and other plant material.

Breeding

Season: Spawning of the oxleyan pygmy perch occurs at water temperatures that are greater than 20°C, with females laying eggs between spring and autumn. The eggs adhere to underwater vegetation and hatch after one to three days.

Conservation

Status: The oxleyan pygmy perch is listed as vulnerable in Queensland under the *Nature Conservation (Wildlife) Regulation 2006* and as endangered nationally under the *Environment Protection and Biodiversity Conservation Act 1999.*

Threats: The oxleyan pygmy perch has had much of its habitat cleared for residential development, forestry and agriculture. The slow-moving waters in which it lives are also at threat from pollution and nutrient enrichment from surrounding land and weed infestation. Some populations of the perch are also at threat from competition for resources with the introduced mosquito fish *(Gambusia holbrooki)*. The oxleyan pygmy perch is also taken as a popular aquarium fish.

Recommendations: Recommendations for helping the survival of the oxleyan pygmy perch include monitoring populations of the introduced mosquito fish, and other introduced non-native fish, within or near populations of this perch, and implementing measures to reduce their impact. Protecting remaining habitat, rehabilitating existing habitat through plantings, and controlling sediment and pollution reaching habitats would also be beneficial for the conservation of this species.

References: Department of Sustainability, Environment, Water, Population and Communities 2011. Nannoperca oxleyana in Species Profile and Threats Database, Department of Sustainability, Environment, Water, Population and Communities, Canberra. http://www.environment.gov.au/sprat. Accessed 19 Apr 2011. Department of Environment and Resource Management, Queensland Government 2010. Conservation Management Profile: Oxleyan Pygmy Perch. http://www.derm.qld.gov.au/wildlife-ecosystems/wildlife/az_of_animals/oxleyan_pygmy_perch.html. Retrieved April 19 2011. Map distribution data supplied by Moreton Bay Regional Council and WildNet (DERM). Map produced by Golder Associates ©. Photo supplied by the New South Wales Department of Primary Industry.

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

Distribution

The oxleyan pygmy perch is distributed along the coast from Tin Can Bay, just north of the Noosa River drainage system to the Richmond River in northern New South Wales. It also occurs on Fraser, Moreton and Stradbroke Islands; however, the perch's abundance within these areas have been drastically reduced and it now only occurs as a number of isolated populations where there is suitable remaining habitat.

Priority Number: 47

Northern quoll

Dasyurus hallucatus

Description

Defining feature: The northern quoll is the smallest of the four Australian quoll species.

Physical description: The northern quoll has reddish-brown fur with a cream underside and white spots on its back and rump. It has a pointed snout and a long, unspotted tail measuring between 200 mm and 345 mm. Northern quolls can weigh up to 1.2 kg. Males weigh between 400 g to 900 g, while females weigh between 300 g to 500 g. The northern quoll is the most aggressive of the four quoll species.

Habitat

The northern quoll lives in a wide range of habitats including rocky areas, eucalypt forest and woodlands, rainforests, sandy lowlands and beaches, shrubland, grasslands and desert. Generally the northern quoll habitat will include some form of rocky area for denning purposes with some surrounding vegetation for foraging and dispersal.

Feeding

The northern quoll is an opportunistic omnivore eating a variety of invertebrates, fruit, nectar, eggs, reptiles, birds, small mammals, road kill and left over scraps in human refuse.

Breeding

Season: In lowland habitats the northern quoll breeds from late May to early June. Reproductive events usually occur earlier in locations close to the coast.

Northern quolls have a short life span with males reaching approximately one year of age and the oldest female ever recorded in the wild reaching three years. Northern quolls breed once a year and on average produce seven offspring after a gestation of 21 - 26 days. Females usually only wean two to three young. For their first litter, northern quolls often give birth to a large, male-biased litter. However, if they live to produce a second litter they are generally smaller and female-biased.

Conservation

Status: The northern quoll is considered to be a species of least concern in Queensland under the *Nature Conservation (Wildlife) Regulation 2006* but is listed as endangered nationally under the *Environment Protection and Biodiversity Conservation Act 1999.*

Threats: Lethal ingestion is one of the biggest threats to the northern quoll, such as the cane toad which makes up part of the northern quolls diet but releases a toxin which can cause death. The removal, degradation and fragmentation of the northern quolls habitat have reduced the area they can inhabit, and predation from feral cats and the European fox has also had an impact on the quoll's populations. Inappropriate fire regimes also pose a threat to the northern quoll.

Recommendations: Recommendations for the survival of the northern quoll include re-establishing populations in suitable habitats, researching possible ways to reduce cane toad poisoning, monitoring and protecting existing populations, implementing weed control and predator control measures, and constructing appropriate fire regimes.

References: Department of Sustainability, Environment, Water, Population and Communities. 2011. Dasyurus hallucatus — Northern Quoll in Species Profile and Threats Database, Department of Sustainability, Environment, Water, Population and Communities. http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=331 Accessed 18 April 2011. Threatened Species Network 2011. Australian Threatened Species: Northern Quoll. http://www.environment.gov.au/biodiversity/threatened/publications/pubs/tsd05northern-quoll.pdf. Accessed 27 April 2011. Map distribution data supplied by Moreton Bay Regional Council and WildNet (DERM). Map produced by Golder Associates ©. Photo supplied by The Queensland Museum.

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

Distribution

The northern quoll occurs in five regional populations across Queensland, the Northern Territory and Western Australia. In Queensland the northern quoll is found as far south as Gracemere and Mt Morgan, as far north as Cooktown and as far west as the Carnarvon Range National Park.

Priority Number: 48

Australasian bittern

Botaurus poiciloptilus

Description

Defining feature: The Australasian bittern is a large, stocky, heron-like bird.

Physical description: The Australasian bittern has a long, thick neck and can reach up to 75 cm in length. Its plumage is mottled brown and brown-black on its upper surface, and buff with dark brown stripes on its under surface. The chin and throat are white and there is a prominent black-brown stripe running down the side of the neck. The bill is straight and yellow-buff in colour, while the feet and legs are pale green to olive. Males, females and juveniles are similar in appearance; however, the female is smaller than the male and juveniles are paler in colour.

Habitat

The Australasian bittern lives predominantly in densely vegetated freshwater wetlands. However, it will sometimes live in estuaries or tidal wetlands, but freshwater is preferred.

Feeding

The Australasian bittern hides in vegetation during the day but comes out at night to feed on frogs, fish, yabbies, spiders, insects and snails. This species feeds by lunging at prey by pivoting on the legs and keeping its back and neck straight. Once caught, prey is either eaten whole or shaken and battered until subdued.

Breeding

Season: The Australasian bittern's breeding season is from October to February. Nests are up to 40 cm across and are constructed from reeds or rushes. The female lays four or five eggs.

Conservation

Status: The Australasian bittern is considered to be a species of least concern in Queensland under the *Nature Conservation (Wildlife) Regulation 2006* but is listed as endangered nationally under the *Environment Protection and Biodiversity Conservation Act 1999.*

Threats: The major threat to the Australasian bittern is the loss or degradation of habitat through diversion of water away from wetlands for agricultural purposes or development. This species is also at threat from reduced water quality in their habitat from pollution and siltation, and from predation by foxes, grazing by livestock, and inappropriate fire regimes.

Recommendations: The Australasian bittern has fairly specialised habitat requirements and, as a result, is more sensitive to habitat loss than other wetland birds. Therefore, it is important to identify, maintain and enhance their habitat. Their habitat can be enhanced through re-establishment of water flows and planting of wetland species, and by control of feral animals and livestock.

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

Distribution

The Australasian bittern is found in Australia, New Zealand and New Caledonia. In Queensland it has been reported north to Baralaba and west to Wyandra, but today is rarely seen and possibly only survives in protected areas. It has been found in the eastern areas of the Moreton Bay region.

Priority Number: 49

References: New South Wales Department of Environment and Conservation 2011. Australasian Bittern. http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10105. Accessed 19 April 2011. Department of Sustainability, Environment, Water, Population and Communities 2011. Botaurus poiciloptilus in Species Profile and Threats Database, Department of Sustainability, Environment, Water, Population and Communities, Canberra. http://www.environment.gov.au/sprat. Accessed 19 April 2011. New South Wales Parks and Wildlife Service. Threatened Species Information: Australasian Bittern. http://www.environment.nsw.gov.au/resources/nature/tsprofileAustralasianBittern.pdf. Accessed 19 April 2011. Map distribution data supplied by Moreton Bay Regional Council and WildNet (DERM). Map produced by Golder Associates ©. Photo supplied by Chris Tzaros Birds Australia.

Wandering pepper cress

Lepidium peregrinum

Description

Defining feature: Wandering pepper cress is a small plant that was thought to be extinct in Australia until recently.

Physical description: Wandering pepper cress is a soft-stemmed plant that typically grows up to 80 cm high, but can grow as high as 2 m amongst surrounding vegetation. This species has two different leaves: those at the base of the plant are 15 cm long and fringed with eyelash like hairs, and those higher up the stem are 2 - 6 cm long, 1 - 8 mm wide and are toothed with a pointed tip. Flowers are small at less than 1 mm long and grow off a horizontal hairy flowering stem.

Habitat

The wandering pepper cress inhabits open forest along the edge of creeks and streams.

Lifecycle

The life cycle of the wandering pepper cress is not fully known. However, it is thought that the species may require specific triggers to break seed dormancy for seedlings to grow, and naturally experience 'boom and bust' cycles in the number of mature plants. It is also possible that this species is present at some locations as dormant seeds, with no plants being present. The wandering pepper cress flowers from January to April.

Conservation

Status: Wandering pepper cress is considered to be a species of least concern in Queensland under the *Nature Conservation (Wildlife) Regulation 2006* but is listed as endangered nationally under the *Environment Protection and Biodiversity Conservation Act 1999.*

Threats: The wandering pepper cress is at risk from a loss of habitat through land clearance for agriculture and urban development. This species is very palatable to rabbits and livestock and, as a result, is at risk from grazing. Populations of wandering pepper cress are very small and fragmented, with recruitment of new plants often limited, possibly experiencing boom and bust cycles.

Recommendations: Habitat identified to contain wandering pepper cress needs to be protected and enhanced to improve future populations of this species. Habitats should be fenced off from livestock, and weed and feral animal control should be undertaken.

Distribution

The wandering pepper cress was thought to be extinct until it was recently discovered in south-eastern Queensland and north-eastern New South Wales.

Note: This species is thought to occur within Moreton Bay region; however limited to no distribution records are available. Records are known immediately adjacent to Moreton Bay region. Council welcomes additional information on the whereabouts of this species.

References: New South Wales Department of Environment and Conservation 2011. Wandering Pepper Cress. http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10464. Accessed 19 April 2011. Photo supplied by Glenn Leiper.

Priority Number: 50

Ravine orchid

Sarcochilus fitzgeraldii

Description

Defining feature: The ravine orchid is a clumping plant that grows into extensive mats that can cover rock faces.

Physical description: The ravine orchid is a clumping orchid with broad, dark-green, slightly channelled leaves that are up to 20 cm long. In summer several long, arching flower stems are produced with up to fifteen flowers. The fragrant flowers measure 30 mm across and are white with crimson in the centre or, rarely, all crimson.

Habitat

The ravine orchid grows mainly in subtropical and temperate rainforest on rocks, in organic matter, in shady ravines, gorges and on cliff faces that are cool and moist. This species is sometimes found growing in the base of fibrous-barked trees.

Lifecycle

The ravine orchid flowers from October to November. This species grows slowly but it can recolonise areas if left undisturbed.

Conservation

Status: The ravine orchid is listed as endangered in Queensland under the *Nature Conservation (Wildlife) Regulation 2006* and vulnerable nationally under the *Environment Protection and Biodiversity Conservation Act 1999.*

Threats: The ravine orchid is a visually attractive plant and is illegally collected, threatening the already small population of plants.

Recommendations: To help populations of ravine orchid recover plants must be left in the wild, and plants should be only purchased from licensed nurseries.

Distribution

The ravine orchid is distributed from Maleny in south-east Queensland to north of the Macleay River in north-east New South Wales. The orchid has been recorded in the Bellthorpe State Forest.

Note: This species is thought to occur within Moreton Bay region; however limited to no distribution records are available. Records are known immediately adjacent to Moreton Bay region. Council welcomes additional information on the whereabouts of this species.

References: New South Wales Department of Environment and Conservation 2011. Ravine Orchid. http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10744. Accessed 19 April 2011. Wetland info Species Information Sarcochilus fitzgeraldii.Department of Environment and Resource Management, Queensland Government. http://www.epa.qld.gov.au/wetlandinfo/site/factsfigures/FloraAndFauna/Species/12658.html. Retrieved April 19 2011. Photo supplied by John Hutchinson ANOS(Qld) - Kabi Group.

Priority Number: 51

Christmas bells

Blandfordia grandiflora

Description

Defining feature: Christmas bells generally flowers in December and January, and has tubular, bell-shaped flowers.

Physical description: Christmas bells is a slow growing herbaceous plant 30-50cm tall, with narrow leaves and bell-shaped flowers produced on stems arising from the centre of the clump. Flowers are quite large being up to 50mm long and flared towards the tip. Typically the flowers are red with a yellow tip but forms with all yellow flowers are known.

Habitat

Christmas bells is associated with wet coastal heathland and paperbark swamps, and grows well in sandy soils.

Lifecycle

Christmas bells flowers in summer. Flowers contain nectar and are frequented by honey-eating birds who act as pollinators. After flowering, seeds are produced in papery pods. Seeds ripen about three months after flowering.

Conservation

Status: Christmas bells is listed as endangered in Queensland under the *Nature Conservation (Wildlife) Regulation 2006.*

Threats: Threats to Christmas bells include illegal collection, and loss of habitat through clearing, weed invasion and disturbance. Much habitat for this species has been lost due to development on coastal lowland plains.

Recommendations: Christas bells can be protected by weed control and by identifying and protecting remaining habitat. Identified specimens of this species should be protected from innapropriate fire regimes and maintenance schedules.

Distribution

Christmas bells is found in coastal areas of central and northern New South Wales and south-east Queenland, specifically Sunshine Coast, Buderim, Stradbroke and Russel Island, Gold Coast, Bilinga and also the Wide Bay District.

Note: This species is thought to occur within Moreton Bay region; however limited to no distribution records are available. Records are known immediately adjacent to Moreton Bay region. Council welcomes additional information on the whereabouts of this species.

References: Australian Native Plants Society (http://anpsa.org.au), *Wild Plants of Greater Brisbane* (Queensland Museum) pp 64.

Priority Number: 52

Wandering albatross

Diomedea exulans

Description

Defining feature: The wandering albatross has the largest wingspan of any ocean bird, measuring from 2.5 to 3.5 m across.

Physical description: The plumage of the wandering albatross varies with age, with juveniles starting out chocolate brown in colour. As the albatross age they lose their colour and become white through the body, with black and white wings. Males have more white on their wings than females with just the tips and edges of the wings being black. The wandering albatross has a white tail with black edges, and pink toes. The bill is flesh-coloured and large.

Habitat

The wandering albatross is a marine bird that occurs in open ocean where water surface temperatures are between -2 °C to 24 °C. In the Antarctic, this species concentrates near submarine plateaux, banks and ridges. In Australia the wandering albatross occurs inshore, offshore and in open ocean, flying within 15 m of the sea surface using the updraft from wave fronts for lift. Nesting of the wandering albatross occurs on sub-Antarctic Islands in open or patchy vegetation (tussocks, ferns or shrubs), in areas that are near exposed ridges or hillocks so that it can take off to fly.

Feeding

The wandering albatross feeds in the Australian region of the Southern Ocean, in pelagic, offshore and inshore waters. It mainly feeds on squid and fish, but also eats crustaceans and carrion (carcass of a dead animal). Wandering albatross fly long distances in search of food and are known to follow boats, feeding aggressively on off cuts and diving for bait.

Breeding

Season: Nesting starts in summer and the breeding season lasts for eleven months. Albatross begin returning to their subantarctic breeding sites from November, and a single egg is laid in late December to early January. Incubation of the eggs takes 78 days during which time both parents will attend the nest. The egg hatches in early March and the chick will be regularly cared for by both parents for six weeks, then will be fed irregularly over winter. Chicks fledge (leave the nest) in mid- November to mid-December, about 278 days after hatching.

Conservation

Status: The wandering albatross is listed as vulnerable in Queensland under the *Nature Conservation (Wildlife) Regulation 2006* and nationally under the *Environment Protection and Biodiversity Conservation Act 1999.*

Threats: The biggest threat to the wandering albatross is mortality as a result of long-line fishing. This species is also shot for bait, or to prevent it diving for bait from fishing boats. Wandering albatross breeding grounds on Macquarie Island were devastated by sealers in the nineteenth century and, despite an initial population increase, numbers have declined again from long-line fishing, human disturbance, and an increase in the number of sub-Antarctic skuas.

Recommendations: Fishing vessels can undertake by-catch mitigation measures which will help to decrease the number of wandering albatross accidentally killed by fishing vessels. Minimising human disturbance at breeding colonies will help to increase breeding success.

References: Department of Sustainability, Environment, Water, Population and Communities 2011. Diomedea exulans (sensu lato) in Species Profile and Threats Database, Department of Sustainability, Environment, Water, Population and Communities, Canberra. http://www.environment.gov.au/sprat. Accessed 19 April 2011. Wikipedia 2011. Wandering Albatross. http://en.wikipedia.org/wiki/Wandering_Albatross. Accessed 27 April 2011. Photo supplied by Dean Ingwersen Birds Australia.

Distribution

The wandering albatross has a circumpolar distribution. It breeds on six subantarctic island groups and feeds throughout the Southern Ocean. It is seen feeding in Australian waters, usually between 30° and 50° south, but has occasionally been seen further north. In Moreton Bay the albatross has been recorded at Bribie Island.

Note: This species is thought to occur within Moreton Bay region; however limited to no distribution records are available. Records are known immediately adjacent to Moreton Bay region. Council welcomes additional information on the whereabouts of this species.

Priority Number: 53

Shy albatross

Thalassarche cauta

Description

Defining feature: The shy albatross is a large bird that is endemic to Australia. It has a distinctive underwing pattern that is mostly white, with very narrow black margins and a diagnostic black notch at the top of the wing just next to the body.

Physical description: The shy albatross is the largest of the black-backed albatrosses, with a wingspan of up to 2.5 m. The forehead and top of the head are white, forming a pronounced white cap sharply bordered by a narrow grey-black brow and light greywash across the sides of the head. The back is black with a pronounced silvery bloom that contrasts with the darker, uniform black shoulders and upperwings. The lower back and upper tail-feathers are white, while the tail is a light grey, turning darker brown with wear. The bill is a uniform grey-horn colour, merging to straw-yellow by the mid-section, with a yellow tip. The eye is dark brown, and the legs and feet have blue flesh.

Habitat

Most adult shy albatrosses remain in the waters off southeast Australia all year round, and seldom venture more than 600 km from the breeding colony.

Feeding

The main food sources for the shy albatross are fish, squid, crustaceans and sea squirts. The shy albatross feeds in waters over the continental shelf, including harbours and bays, and follows fishing vessels in flocks.

Breeding

Season: Shy albatrosses have an annual breeding cycle lasting about eight months, from September until April. Most eggs are laid in September or early October. The egg is incubated for about ten weeks, then the chick hatches in December and is brooded for a further three weeks.

Shy albatrosses breed in colonies of six to five hundred nests, usually in association with the Australasian gannet. The nest is a round mound of mud, guano, rock fragments, feathers, plant material, fish and bird bones, lined with fine material. The nests are re-used annually. The incubation of a single egg is carried out by both males and females in alternate shifts, with a single shift averaging four days.

Conservation

Status: The shy albatross is listed as vulnerable in Queensland under the *Nature Conservation (Wildlife) Regulation 2006* and nationally under the *Environment Protection and Biodiversity Conservation Act 1999.*

Threats: Although numbers of shy albatross have been increasing through the twentieth century, the species is still vulnerable to deaths associated with commercial fishing.

Recommendations: To help protect the shy albatross, fishing vessels can undertake by-catch mitigation measures which will help to decrease the number of birds accidentally killed by fishing vessels. Minimising human disturbance at breeding colonies will help to increase breeding success.

References: Department of Sustainability, Environment, Water, Population and Communities 2011. Thalassarche cauta cauta in Species Profile and Threats Database, Department of Sustainability, Environment, Water, Population and Communities, Canberra. http://www.environment.gov.au/sprat. Accessed 27 April 2011. Map distribution data supplied by Moreton Bay Regional Council and WildNet (DERM). Map produced by Golder Associates ©. Photo supplied by Dean Ingwersen Birds Australia.

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

Distribution

The shy albatross is endemic to Australian territory. Shy albatrosses occur over all Australian coastal waters from southeast Queensland south to Tasmania. In the Moreton Bay regoin the shy albatross has been found on Bribie Island and around Sandstone Point.

Priority Number: 54

Australian painted snipe

Rostratula australis

Description

Defining feature: The Australian painted snipe is a stocky wading bird around 220 - 250 mm in length with a long pink bill.

Physical description: The adult female Australian painted snipe is more colourful than the male and has a chestnut-coloured head, with white around the eye and a white crown stripe. Their back and wings are metallic green and barred with black and chestnut. There is a pale stripe extending from the shoulder into a V-shaped pattern down its upper back. The adult male is similar to the female, but is smaller and duller with buff spots on the wings and without any chestnut colouring on the head, back of the neck or throat.

Habitat

The Australian painted snipe generally inhabits shallow terrestrial freshwater wetlands, including temporary and permanent lakes, swamps and claypans. They also use inundated or waterlogged grassland or saltmarsh, dams, rice crops, sewage farms and bore drains. Typical sites include those with tussocks of grass, sedges, rushes, reeds or samphire. The snipe sometimes utilises areas that are lined with trees, or that have some scattered fallen or washed-up timber. These birds are mainly active at dawn and dusk and sit quietly under cover during the day.

Feeding

The Australian painted snipe looks for food under clumps of tea-trees or other dense cover. The snipe eats vegetation, seeds, insects, worms, molluscs, crustaceans and other invertebrates.

Breeding

Season: The Australian painted snipe may breed in response to wetland conditions rather than during a particular season. The snipe has been recorded breeding in all months in Australia. Eggs have been recorded from mid August to March, with breeding in northern Queensland also recorded between May and October.

The Australian painted snipe nests near small islands in freshwater wetlands which have a combination of very shallow water, exposed mud, dense low cover and sometimes some tall dense cover. The nest is usually placed in a scrape in the ground, and either has scant lining or is a shallow bowl-shaped nest of dry grass or other plant material. The female snipe typically breeds every two years.

Conservation

Status: The Australian painted snipe is listed as vulnerable in Queensland under the *Nature Conservation (Wildlife) Regulation 2006* and nationally under the *Environment Protection and Biodiversity Conservation Act 1999.*

Threats: The primary factor in the decline of the Australian painted snipe is the loss and alteration of wetland habitat, but it is also at threat from predation by feral animals.

Recommendations: Recommendations for protecting the Australian painted snipe include protection of habitat at principal breeding and wintering sites, rehabilitation of selected wetlands that were formerly used for breeding, control programs for feral animals, and fencing to prevent grazing and trampling of wetlands by cattle.

References: Department of Sustainability, Environment, Water, Population and Communities. 2011. Rostratula australis — Australian Painted Snipe in Species Profile and Threats Database, Department of Sustainability, Environment, Water, Population and Communities. http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=77037. Accessed 15 April 2011. Map distribution data supplied by Moreton Bay Regional Council and WildNet (DERM). Map produced by Golder Associates ©. Photo supplied by Chris Tzaros Birds Australia.

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

Distribution

The Australian painted snipe has been recorded at wetlands in all states of Australia. It is most common in eastern Australia, where it has been recorded at scattered locations throughout much of Queensland, New South Wales, Victoria and south-eastern South Australia. This species has been recorded in grassy coast (wetlands) in the Moreton Bay region.

Priority Number: 55

Black-breasted button-quail

Turnix melanogaster

Description

Defining feature: The black-breasted button-quail is a medium-sized, plump bird that is not a true quail.

Physical description: Female black-breasted button-quails are larger than males weighing approximately 100 g compared to 65 g for males. Males measure about 18 cm long, with a wingspan of 32 - 35 cm. They have a mottled brown, black, grey and white back and wings. Males of this species have a white face and throat, and the breast is black with many white half moon markings. The female is similar in appearance to the male but has a black face and throat and a larger darker patch over the throat and breast, with more pronounced markings. The bill and legs of both sexes are pale yellow. Juveniles resemble males but are duller in colour.

Habitat

The black-breasted button-quail lives in rainforests and forests that have between 770 mm and 1,200 mm of rainfall per year. They prefer drier low closed forests. Optimum habitat is generally located on fertile soils. It is believed that the rapid growth of plants in these areas maintains a deep layer of leaf litter for the black-breasted button-quail to forage in.

Feeding

The black-breasted button-quail feeds mainly on invertebrates taken from leaf litter on the forest floor. They may also feed on seeds.

Breeding

Season: The black-breasted button-quail breeds from September to May. The beginning and ending of the breeding season can be influenced by environmental factors including climate and rainfall.

Between three and five eggs are laid in a scrape in the ground lined with leaves, grass or moss. The female mates with several males in succession and she can lay two clutches of eggs at 8 - 10 days apart.

Conservation

Status: The black-breasted button-quail is listed as vulnerable in Queensland under the *Nature Conservation (Wildlife) Regulation 2006* and nationally under the *Environment Protection and Biodiversity Conservation Act 1999.*

Threats: The black-breasted button-quail has suffered from a lack of habitat, particularly a loss of optimum foraging areas which have been cleared of forest for use of their fertile soils. Because this species dwells on the forest floor, it is threatened by predators such as cats, foxes and pigs. Smaller populations living in fragmented habitat are more exposed to disturbances caused by cattle, horses and pigs. Fire also poses a threat to the species, reducing the leaf litter supply they require for foraging.

Recommendations: The black-breasted button-quail could benefit from forest recovery and revegetation plans that will eventually lead to more connectivity between forest fragments.

Additional information

The total population of black-breasted button-quail is estimated at 5,000 breeding birds. However, this estimate is of low reliability as the birds are cryptic and shy, making observation difficult.

References: Department of Sustainability, Environment, Water, Population and Communities. 2011. Turnix melanogaster — Black-breasted Button-quail in Species Profile and Threats Database, Department of Sustainability, Environment, Water, Population and Communities. http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=923 Accessed 15 April 2011. Map distribution data supplied by Moreton Bay Regional Council and WildNet (DERM). Map produced by Golder Associates ©. Photo supplied by R Clarke.

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

Distribution

The black-breasted button-quail is found in coastal regions of south-eastern Queensland and areas of New South Wales. This species is found in a number of Queensland reserves including Sharon Gorge Nature Park, , Bunya Mountains and Lamington National Parks. In the Moreton Bay region this species is found in western areas.

Priority Number: 56

Long-nosed potoroo

Potorous tridactylus tridactylus

Description

Defining feature: The long-nosed potoroo is a marsupial that looks similar to a rat but hops like a kangaroo.

Physical description: The long-nosed potoroo is a brown to grey coloured marsupial. They have a long nose that narrows at the end, with a small patch of skin extending from the snout to the nose. Males are larger than females measuring 29 cm to 41 cm in length and weighing 0.7 kg to 1.6 kg. The female long-nosed potoroo measures between 26 cm to 38 cm in body length and weighs between 660 g to 1.3 kg.

Habitat

The long-nosed potoroo shows no particular pattern of preferred habitat type in Queensland. It is found in wet eucalypt forests through to coastal heaths and scrubs. It appears to prefer habitat offering a form of dense covering vegetation and an abundant food supply of fungi.

Feeding

Fungi are the main component of the long-nosed potoroo's diet. This species also eats invertebrates and plants including the leaf, stem, roots, bulbs, fruit and seeds.

Breeding

Season: The long-nosed potoroo breeds all year round, both in the wild and in captivity.

The long-nosed potoroo can live for up to ten years. Gestation takes 37 days after which one single offspring is born, although twins are born on occasion. Their young live in their mothers pouch for about 100 to 125 days, and reach maturity after about 12 months.

Conservation

Status: The long-nosed potoroo is listed as vulnerable in Queensland under the *Nature Conservation (Wildlife) Regulation 2006* and nationally under the *Environment Protection and Biodiversity Conservation Act 1999.*

Threats: The long-nosed potoroo is threatened from predation by European red foxes, by natural disasters, and by residential and industrial development. This species has also been the target for culling by farmers as it was considered a pest that damaged gardens and crops. It is estimated that three million long-nosed potoroo's were killed for bounties.

Recommendations: Threats to the long-nosed potoroo could be reduced by controlling European red fox populations. Protecting the habitat in which this species lives will also help the species recover.

References: Department of Sustainability, Environment, Water, Population and Communities. 2011. Potorous tridactylus tridactylus — Long-nosed Potoroo (SE mainland) in Species Profile and Threats Database, Department of Sustainability, Environment, Water, Population and Communities. http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=1765 Accessed 15 April 2011. Map distribution data supplied by Moreton Bay Regional Council and WildNet (DERM). Map produced by Golder Associates ©.
Photo supplied by The Queensland Museum.

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

Distribution

The long-nosed potoroo is found in scattered locations from south-eastern Queensland to New South Wales. Locations in Queensland include Many Peaks Range, Bellthorpe and the Border Ranges. This species is predominantly found in western areas of Moreton Bay.

Priority Number: 57

Slender milkvine

Marsdenia coronata

Description

Defining feature: Slender milkvine is a climbing vine that oozes out a white, milk-like liquid when the stem is cut.

Physical description: Slender milkvine is a climbing vine with tuberous roots (roots enlarged for storage). The stem is long and cylindrical. The leaves measure up to 5.5 cm long, 1 cm wide and are wedge shaped, rounded at the base and pointed at the tip. The flowers cluster together off short stems and are coloured yellow to yellow-green and shaped like a shallow bell. Fruits are dry and shaped like long, slim eggs, measuring approximately 10 cm long.

Habitat

Slender milkvine grows in eucalypt forest and in open grassland amongst rocks.

Lifecycle

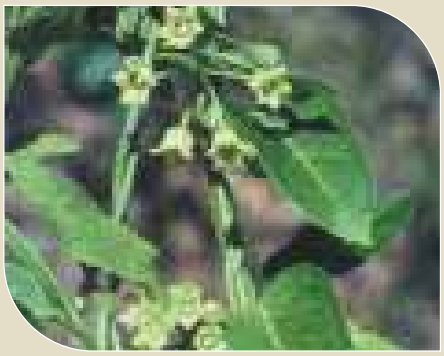
Slender milkvine flowers from November to March, and fruiting occurs approximately three to four months after.

Conservation

Status: Slender milkvine is listed as vulnerable in Queensland under the *Nature Conservation (Wildlife) Regulation 2006* and nationally under the *Environment Protection and Biodiversity Conservation Act 1999.*

Threats: The main threat to slender milkvine is loss of habitat, mainly caused by land development, fire and mining.

Recommendations: There are a number of key actions that can help preserve slender milkvine. These include: preserving current populations and protecting them from development; creation of a fire management strategy; and the collection and storage of seeds.



Distribution

Slender milkvine is found in south-east Queensland, from the Gunalda Range south to the Great Dividing Range near Killarney. Slender milkvine can be found within a number of reserves including: Mount Coolum National Park, Main Range National Park, Mount Moon in Moogerah Peaks National Park, Brisbane Forest Park, Daisy Hill Conservation Park and White Rock Conservation Park.

Note: This species is thought to occur within Moreton Bay region; however limited to no distribution records are available. Records are known immediately adjacent to Moreton Bay region. Council welcomes additional information on the whereabouts of this species.

References: Department of Sustainability, Environment, Water, Population and Communities 2010. Approved Conservation Advice for Marsdenia coronata Slender Milkvine). http://www.environment.gov.au/biodiversity/threatened/species/pubs/20632-conservation-advice.pdf. Accessed 11 April 2011. Photo supplied by Moreton Bay Regional Council.

Priority Number: 58

Corky milkvine

Marsdenia longiloba

Description

Defining feature: Corky milkvine releases a clear watery sap when cut, unlike other members of the milkvine family which release a milky colour sap.

Physical description: Corky milkvine is a climbing species with finely pointed leaves occurring in pairs up the stem. Each leaf has 5-6 tiny glands at the base. Flowers occur in clusters and are small, white and star-shaped. Seed capsules are long and narrow with tufts of long silky hair.

Habitat

Corky milkvine grows in subtropical and warm temperate forest, lowland moist eucalypt forest that connects to rainforest and in some areas with rocky outcrops.

Lifecycle

Flowers are produced in summer, followed by seed production.

Conservation

Status: Corky milkvine is listed as vulnerable in Queensland under the *Nature Conservation (Wildlife) Regulation 2006* and nationally under the *Environment Protection and Biodiversity Conservation Act 1999*.

Threats: Corky milkvine has suffered from habitat loss and fragmentation through urbanisation. This has reduced population sizes and isolated them; increasing the risk of decline. Invasive weeds, trampling by cattle and herbicide use also threaten current populations.

Recommendations: Threats to corky milkvine can be reduced by reducing the removal of their habitat. Current habitat with known populations of corky milkvine should be protected from grazing, herbicides, weeds and land clearance.

Distribution

Corky milkvine is found in south-east Queensland and in scattered sites on the north coast of New South Wales.

Note: This species is thought to occur within Moreton Bay region; however limited to no distribution records are available. Records are known immediately adjacent to Moreton Bay region. Council welcomes additional information on the whereabouts of this species.

References: New South Wales Department of Environment and Conservation 2011. Slender Marsdenia Profile. http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10507. Accessed 11 April 2011. Photo supplied by Moreton Bay Regional Council.

Priority Number: 59

Ball nut

Floydia praealta

Description

Defining feature: The ball nut tree is closely related to the macadamia nut tree.

Physical description: The ball nut tree grows up to 35 m tall and has bark that is rough, brown and slightly wrinkled. The leaves measure from 10-25 cm long and 1-3 cm wide, they are rounded at the tip and slightly tapered at the base. The leaves are hairless, shiny and leathery with slightly wavy margins. Flowers are creamy brown and release a slightly musky odour when open. Fruits are ball shaped, brown and have one to two seeds inside them.

Habitat

The ball nut tree typically grows on riparian margins, within coastal scrub and in subtropical rainforests, preferring soils derived from basalt.

Lifecycle

The ball nut tree flowers in summer and fruits in winter.

Conservation

Status: The ball nut is listed as vulnerable in Queensland under the *Nature Conservation (Wildlife) Regulation 2006* and nationally under the *Environment Protection and Biodiversity Conservation Act 1999.*

Threats: The ball nut tree is threatened by the loss of habitat caused by development and subsequent habitat fragmentation. Weed species and trampling by stock also impact upon existing populations.

Recommendations: Threats to the ball nut tree could be reduced by fencing and employing weed control measures in existing populations, as well as searching for and protecting new populations. Connecting forest remnants through replanting would allow existing populations to expand.

Additional information

This species is also known as *Macadamia praealta* and *Helicia praealta*.

Distribution

Ball nut trees are located in small scattered populations from Gympie in Queensland to north-east New South Wales. This species also occurs within the South East (Queensland) Natural Resource Management Region.

Note: This species is thought to occur within Moreton Bay region; however limited to no distribution records are available. Records are known immediately adjacent to Moreton Bay region. Council welcomes additional information on the whereabouts of this species.

References: New South Wales Department of Environment and Conservation 2011. Ball Nut Profile. http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10332. Accessed 14 April 2011. Department of Sustainability, Environment, Water, Population and Communities. 2008. Approved Conservation Advice for Floydia praealta (Ball Nut). http://www.environment.gov.au/biodiversity/threatened/species/pubs/15762-conservation-advice.pdf. Accessed 14 April 2011. Harden G 1995. Floydia praealta. New South Wales flora online. http://plantnet.rbgsyd.nsw.gov.au/cgi-bin/NSWfl.pl?page=nswfl&lvl=sp&name=Floydia~praealta. Accessed 14 April 2011.

Photo supplied by Moreton Bay Regional Council.

Priority Number: 60

Toadflax

Austral toadflax

Thesium australe

Description

Defining feature: Toadflax is a hemi-parasitic plant, meaning that it either lives by itself or is a parasite on another species.

Physical description: Toadflax is a pale green or yellow-green herb with multiple stems up to 60 cm long. The leaves are attached directly to the stem rather than having a stalk. They measure approximately 1-3 cm long, between 0.5 to 1.5 mm wide and have a pointed tip. Lower leaves are scale-like. Flowers are small and white, and grow singularly from a short stem at the base of the leaf. Fruit is round and slightly fleshy.

Habitat

Toadflax is parasitic on its hosts roots, like other members of the sandalwood family. Toadflax usually grows on kangaroo grass, but will also grow on other species including Poa species (grasses). Toadflax has a wide ecological tolerance and grows in a variety of climates including subtropical, temperate and subalpine environments. It also grows in a variety of soils including sedimentary, igneous and metamorphic rocks, and soils recently deposited by rivers and streams. It grows in grasslands, grassy woodlands and subalpine grassy heathlands.

Lifecycle

Toadflax flowers in spring and fruit begins to develop in summer.

Conservation

Status: Toadflax is listed as vulnerable in Queensland under the *Nature Conservation (Wildlife) Regulation 2006* and nationally under the *Environment Protection and Biodiversity Conservation Act 1999.*

Threats: Toadflax is threatened by a loss of habitat through land clearing, grazing and weed infestation.

Recommendations: Threats to toadflax can be reduced by protecting, fencing and employing weed control measures for existing populations, as well as searching for and protecting new populations.

Distribution

Toadflax is found in Queensland, Tasmania, and in small populations along the eastern coastline of New South Wales. It is also found in eastern Asia.

Note: This species is thought to occur within Moreton Bay region; however limited to no distribution records are available. Records are known immediately adjacent to Moreton Bay region. Council welcomes additional information on the whereabouts of this species.

References: New South Wales Department of Environment and Conservation 2011. Austral Toadflax Profile. http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10802. Accessed 14 April 2011. State of Victoria, Department of Sustainability and Environment 2003. Austral Toad flax. Flora and Fauna Guarantee Action Statement. http://www.dse.vic.gov.au/CA256F310024B628/0/76D0A781B2E0FBBDCA2570EC001E3AEE/$File/056+Austral+Toad-flax+1994.pdf. Accessed 14 April 2011. Photo supplied by Moreton Bay Regional Council.

Priority Number: 61

Hop bush

Dodonaea rupicola

Description

Defining feature: Hop bush is a shrubby species that is found growing on rocky hillslopes.

Physical description: Hop bush is a spreading shrub growing to 1 m tall. Branchlets are shaped like a cylinder narrowing slightly at the end and are covered in small white hairs. The leaves are also covered in small white hairs. Leaves are divided into leaflets and arranged opposite each other along a stem. Each leaf is 1.5 to 3 cm long on a stalk 3-8 mm long, and is divided into 10-18 smaller leaflets. Hop bush is a dioecious species meaning that there are separate male and female plants. Flowers have no petals, are unisexual and grow from a short stalk in an inflorescence (a cluster of branches and flowers). The fruit is a hairy, leathery capsule and is coloured red-brown at maturity. This fruit has four wings extending 3-4 mm beyond the main body of the capsule.

Habitat

Hop bush grows on low rocky hill slopes in shallow, acidic, silty clay soils that are generally well-drained. The vegetation community in which hop bush grows varies from open shrubland to tall woodlands.

Lifecycle

Hop bush produces flowers and fruit from September to November.

Conservation

Status: Hop bush is listed as vulnerable in Queensland under the *Nature Conservation (Wildlife) Regulation 2006* and nationally under the *Environment Protection and Biodiversity Conservation Act 1999.*

Threats: The hop bush is potentially threatened by inappropriate fire regimes and weed invasion. If fires are too frequent, the population will have too little time between fires to recover and produce seed stores. However, if fires are too infrequent the plants become old and seed stores in the soil may begin to decline to the point where the population cannot be maintained.

Recommendations: Further research into the effects of fire on hop bush may help to determine ways to ensure its survival into the future. Identifying new populations and protecting them as well as known populations from weed invasion, stock damage and habitat loss can also help reduce threats to this species.

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

Distribution

Hop bush is found in Queensland including a small range of approximately 10 km between Caboolture and Beerwah. The largest population is within the Glasshouse Mountains National Park.

References: Department of Sustainability, Environment, Water, Population and Communities. 2011. Approved Conservation Advice for Dodonaea rupicola. http://www.environment.gov.au/biodiversity/threatened/species/pubs/15140-conservation-advice.pdf. Accessed 14 April 2011. Map distribution data supplied by Moreton Bay Regional Council and WildNet (DERM). Map produced by Golder Associates ©. Photo supplied by Moreton Bay Regional Council.

Priority Number: 62

Missionary nutgrass

Cyperus semifertilis

Description

Defining feature: The missionary nutgrass is a perennial sedge that produces three-sided nuts.

Physical description: Missionary nutgrass is a sedge with roots that creep horizontally along the ground. The stem has three sides and reaches 30 - 55 cm in height. Leaves are flat to rounded and are longer than the stems measuring 1.5 - 4.0 mm wide. The flower spikes have one to six spreading spiklets. The seeds have three sides and are brown.

Habitat

Missionary nutgrass grows in open forest dominated by white mahogany *(Eucalyptus acmenoides).*

Lifecycle

The missionary nutgrass flowers in spring and summer.

Conservation

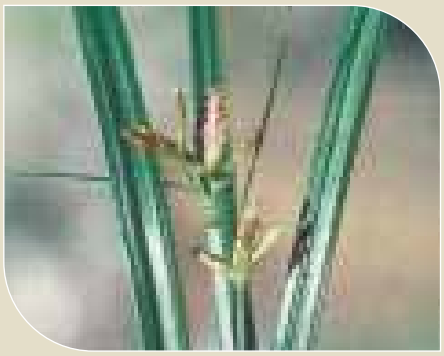
Status: Missionary nutgrass is listed as vulnerable in Queensland under the *Nature Conservation (Wildlife) Regulation 2006* and nationally under the *Environment Protection and Biodiversity Conservation Act 1999.*

Threats: Known threats to missionary nutgrasss include degradation and loss of habitat from land clearance, stock damage and weed invasion.

Recommendations: Measures such as reporting new populations and protecting existing populations from weed invasion and stock could help to minimise the threats to missionary nutgrass.

Additional information

The number of known missionary nutgrass plants is estimated to be approximately fifty individuals.



Distribution

Missionary nutgrass is found in south-east Queensland and in a few locations along the north coast of New South Wales.

Note: This species is thought to occur within Moreton Bay region; however limited to no distribution records are available. Records are known immediately adjacent to Moreton Bay region. Council welcomes additional information on the whereabouts of this species.

References: New South Wales Department of Environment and Conservation 2011. Missionary Nutgrass Profile. http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10200. Accessed 21 April 2011. Photo supplied by Moreton Bay Regional Council.

Priority Number: 63

Black-browed albatross

Thalassarche melanophris

Description

Defining feature: The black-browed albatross is distinguished by it's dark eyebrow marking.

Physical description: The black-browed albatross grows to about 0.8 m long. This bird has a dark grey saddle shape on its back and dark grey wings, which contrast with its white head, tail and under parts. Their wings are mostly white with irregular black margins on the underside and extend to 2.4 m. The black-browed albatross has a distinctive dark eyebrow and a yellow-orange bill which becomes slightly darker and more red-orange towards the tip. Juveniles have a horn-coloured bill, grey feathers on their head and neck, and a dark under wing which lightens as they age.

Habitat

The black-browed albatross is a marine bird that inhabits antarctic, subantarctic and temperate waters. Outside the breeding season the albatross follows water currents up to Australia and other countries to inhabit coastal and inshore waters, and sometimes entering fjords or channels. During the breeding season black-browed albatross are found on terraces of coastal cliffs, slopes of nearby hills, summits of rocky islets or on flat or gently-sloping ground areas of subantarctic islands and others nearby.

Feeding

The diet of black-browed albatross is dependent on location and season. The majority of its diet is made up of crustaceans, squid and fish. This albatross is also known to eat dead fish, particularly those discarded by fisheries boats.

Breeding

Season: The black-browed albatross is a colonial breeding species meaning that it breeds in a large group. These birds breed in spring, lay eggs in October with chicks hatching in December, and fledging between April and May. The black-browed albatross first breeds at around ten years of age.

The black-browed albatross nests on the shoreline, generally on steep slopes within tussock grass.

Conservation

Status: The black-browed albatross is considered as a species of least concern in Queensland under the *Nature Conservation (Wildlife) Regulation 2006*. It is listed as nationally vulnerable under the *Environmental Protection and Biodiversity Conservation Act 1999.*

Threats: The main threats to the black-browed albatross are long-line fishing and trawling. Colonies at Macquarie Island have suffered from a loss of habitat caused by the European rabbit *(Oryctolagus cuniculus)* and colonies on the Kerguelen Islands have suffered from predation by cats.

Recommendations: Fishing vessels should undertake by-catch mitigation measures to help to decrease the number of black-browed albatross accidentally killed by fishing vessels. Minimising human disturbance and undertaking pest control at breeding sites should also help to increase the breeding success of this species.

Distribution

The black-browed albatross is restricted to subantarctic and antarctic waters and islands during the breeding season. These birds migrate north outside the breeding season into the Pacific, Atlantic and Indian Oceans and occasionally extend into the northern hemisphere. Within Australia, black-browed albatross are observed in South Australia, Victoria, Tasmania and New South Wales, and in lesser numbers at the continental shelf break of southern and south-western Western Australia and south-eastern Queensland.

Note: This species is thought to occur within Moreton Bay region; however limited to no distribution records are available. Records are known immediately adjacent to Moreton Bay region. Council welcomes additional information on the whereabouts of this species.

References: Department of Sustainability, Environment, Water, Population and Communities 2011. Thalassarche melanophris in Species Profile and Threats Database, Department of Sustainability, Environment, Water, Population and Communities, Canberra. Available from: http://www.environment.gov.au/sprat. Accessed 20 April 2011. Photo supplied by Mark G Sanders EcoSmart Ecology Pty Ltd.

Priority Number: 64

Three-leaved bosistoa

heart-leaved bosistoa

Bosistoa transversa

Description

Defining feature: Three-leaved bosistoa is a crooked tree reaching 22 m in height.

Physical description: Three-leaved bosistoa has wide leathery leaves (2.5 - 9.0 cm wide, 5 - 16 cm long) that are arranged in pairs on the stem. The leaves are heart-shaped at the base and pointed to rounded at the tip. The lower leaf surface is lighter than the upper surface and covered in small veins. Small white flowers are arranged in clusters near the tips of branches. The fruit is hard, ribbed and egg-shaped with a flattened end. Each fruit is approximately 1 cm wide and contains one kidney-shaped seed.

Habitat

Three-leaved bosistoa grows in subtropical rainforest, wet sclerophyll forest and dry sclerophyll forest up to 300 m in altitude. Sclerophyll is a type of vegetation characterised by hard, leathery, evergreen foliage that is specially adapted to prevent moisture loss.

Lifecycle

Three-leaved bosistoa flowers in summer.

Conservation

Status: Three-leaved bosistoa is considered a species of least concern in Queensland under the *Nature Conservation (Wildlife) Regulation 2006.* It is listed as nationally vulnerable under the *Environment Protection and Biodiversity Conservation Act 1999.*

Threats: The main threats to three-leaved bosistoa are habitat loss and degradation through processes such as land clearance, weed invasion, grazing and trampling by stock, fire and timber harvesting.

Recommendations: Measures such as protecting known and new populations from damaging land use practices, fire, weed invasion and stock could help to minimise threats to three-leaved bosistoa.

Additional information

This species is also known as *Bosistoa selwynii.*

Distribution

Three-leaved bosistoa is found in Queensland from Maryborough south to the Nightcap Range in north-east New South Wales. Populations have been recorded in Murwillumbah and Richmond, Queensland. Three-leaved bosistoa is conserved within Mt Warning National Park, Numbinbah Nature Reserve, Limpinwood Nature Reserve and Whian Whian State Forest.

Note: This species is thought to occur within Moreton Bay region; however limited to no distribution records are available. Records are known immediately adjacent to Moreton Bay region. Council welcomes additional information on the whereabouts of this species.

References: New South Wales Department of Environment and Conservation 2011. Yellow Satinheart Profile. http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10103. Accessed 14 April 2011. Department of Sustainability, Environment, Water, Population and Communities. 2008. Approved Conservation Advice for Bosistoa transversa (Three-leaved Bosistoa). http://www.environment.gov.au/biodiversity/threatened/species/pubs/78841-conservation-advice.pdf. Accessed 14 April 2011. Richards P 2011. Bosistoa transversa. New South Wales flora online. http://plantnet.rbgsyd.nsw.gov.au/cgi-bin/NSWfl.pl?page=nswfl&lvl=sp&name=Bosistoa~transversa. Accessed 14 April 2011. Photo supplied by Glenn Leiper.

Priority Number: 65

Southern dayfrog

Taudactylus diurnus

Description

Defining feature: The last sighting of the southern day frog was in 1979.

Physical description: The southern day frog was active during the day (diurnal). It was a small frog with males reaching between 22 to 27 mm in length, and females reaching between 23 to 30 mm. Their back was grey or brown with darker mottling and few small warts, while the tummy was cream or blue white and smooth to touch. The throat was more heavily mottled with brown and grey and sometimes appeared grey with creamy yellow spots. A pale bar stretched between the eyes bordered by a dark brown patch, and a short dark stripe ran from the eye to the base of the forearm. An irregular, dark and slightly raised H-shaped marking was present on the shoulders. Limbs had dark irregular bands and the toes were un-webbed.

Habitat

The southern day frog lived in montane (highland) rainforest and other vegetation with a dense understory, alongside streams at elevations between 350 and 800 m. The species preferred rocky bottomed streams, however they could be found in a variety of streams provided the water was clean. They were generally found amongst vegetation, rock and debris within 10 m of the water's edge, but sometimes moved further in wet weather (up to 22 m).

Feeding

The southern day frog was an opportunistic feeder of invertebrates. Their diet consisted of amphipods and the larvae of flies, wasps, butterflies and moths.

Breeding

Season: The southern day frog bred between October and May (peaking between January and March) in warm weather during, or after, heavy rain.

The female southern day frog laid her eggs in clumps under rocks in the water.

Conservation

Status: The southern day frog was listed as endangered in Queensland under the *Nature Conservation Act 1992* but was more recently listed as extinct under the International Union for Conservation of Nature (IUCN) Red List of Threatened Species in 2004.

Threats: The reason for the disappearance of the southern tree frog remains unknown. However, its pattern of decline is consistent with an epidemic infection of chytridiomycosis (fungus causing a hardening of skin in amphibians, stopping the absorption of water and salts and therefore causing death). Other possible causes include weed invasion, feral pigs by both direct predation and silt accumulation caused by their wallowing behaviour, and upstream disturbances (such as logging).

Additional information

The southern day frog disappeared from the D'Aguilar Range in 1975, from the Blackall Range in 1978 and finally from the Conondale Range in 1979.

References: Amphibian Ark 2011. Chytrid Fungus. Joint venture of World Association of Zoos and Aquariums (WAZA), IUCN/SSC Conservation Breeding Specialist Group (CBSG), IUCN/SSC Amphibian Specialist Group (ASG). http://www.amphibianark.org/the-crisis/chytrid-fungus/. Accessed 7 April 2011. Department of Sustainability, Environment, Water, Population and Communities 2011. Taudactylus diurnus — Southern Day Frog, Mt Glorious Torrent Frog in Species Profile and Threats Database, Department of Sustainability, Environment, Water, Population and Communities. http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=1886. Accessed 7 April 2011. Hero J, May S, Newell D, Hines H, Clarke J, Meyer E 2004. Taudactylus diurnus. International Union for Conservation of Nature (IUCN) Red List of Threatened Species. Version 2010.4. http://www.iucnredlist.org/apps/redlist/details/21530/0. Accessed 7 April 2011. Map distribution data supplied by Moreton Bay Regional Council and WildNet (DERM). Map produced by Golder Associates ©. Photo supplied by the Moreton Bay Regional Council.

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

Distribution

The southern day frog was once found in the Blackall, Conondale and D'Aguilar Ranges, near Brisbane and south-eastern Queensland within an altitudinal range of 350 m to 800 m. This species was seen in the south-west of the Moreton Bay region.

Priority Number: 66

Cascade treefrog

Pearson's green tree frog

Litoria pearsoniana

Description

Defining feature: The cascade tree frog is a small green frog that inhabits rainforest creeks.

Physical description: The cascade tree frog ranges in colour from green to dark brown, with or without spots, and white to cream underneath. The hidden parts of the groin and legs range from tan to brick red. A thin pale and brown stripe runs from the nostril, through the eye, above the external ear and along the sides to the body. A pale stripe may also occur on the upper lip. The skin on their back is smooth to touch, while the belly is granular in texture. Females are 24 - 29 mm in size, while males are about 31 - 37 mm in length. Tadpoles are golden coloured when very young and darken to brown as they develop, occasionally with spots.

Habitat

The cascade tree frog lives in rainforest streams and wet sclerophyll forest at elevations of 200 m to 1000 m. During spring and summer they are found amongst leaf litter and moist soil cavities as well as under rocks and logs. In winter they hibernate in humid spaces in closely packed groups.

Feeding

The cascade tree frog is from the family 'Hylidae' which feeds on insects and other invertebrates.

Breeding

Season: Female cascade tree frogs can breed more than once in a season. They typically lay 363 - 732 eggs which are deposited onto rocks, debris or aquatic plants in shallow or still pools nearby to a main stream. The eggs are dark coloured and usually hatch 3 - 5 days after being lain. The tadpoles then develop into frogs approximately 2.0 - 2.5 months later.

Conservation

Status: The cascade tree frog is listed as endangered for the Kroombit Tops National Park and as vulnerable elsewhere in Queensland under the *Nature Conservation (Wildlife) Regulation 2006.*

Threats: The cascade tree frog may be threatened by destruction of habitat (particularly winter hibernation sites), along with water pollution. Chytridiomycosis (fungus causing a hardening of skin in amphibians, stopping the absorption of water and salts and therefore causing death) has been found in sick and dying animals and predation by pigs also plays a role.

Recommendations: Populations of the cascade tree frog would benefit from predator control, protection of habitat, disease research and identification training for park staff and volunteers.

References: Hero J, Clarke J, Meyer E. 2004. Litoria pearsoniana. International Union for Conservation of Nature (IUCN) Red List of Threatened Species. Version 2010.4. http://www.iucnredlist.org/apps/redlist/details/12150/0. Accessed 11 April 2011 "New South Wales Department of Environment and Conservation 2011. Overview of the Dry sclerophyll forests (shrubby sub formation). http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/veg1_details.aspx?name=Dry%20sclerophyll%20forests%20(shrubby%20sub-formation). Accessed 11 April 2011. " Amphibian Research Centre 2011. Frogs of Victoria: Family Hylidae. http://frogs.org.au/frogs/hylidae.html. Accessed 11 April 2011. The State of Queensland Department of Environment and Resource Management 2011. Endangered Species: Cascade tree frog. http://www.derm.qld.gov.au/wildlife-ecosystems/wildlife/threatened_plants_and_animals/endangered/cascade_treefrog.html. Accessed 11 April 2011. Map distribution data supplied by Moreton Bay Regional Council and WildNet (DERM). Map produced by Golder Associates ©. Photo supplied by the Moreton Bay Regional Council.

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

Distribution

The cascade tree frog is found in south-eastern Queensland and north-eastern New South Wales. Within the Moreton Bay region this species has populations in the north and the south.

Priority Number: 67

Tusked frog

Adelotus brevis

Description

Defining feature: The tusked frogs defining feature is the large head and 'tusks' (tooth-like projections from the lower jaw) displayed in the male of the species.

Physical description: The tusked frog has a mottled brown back covered with small warts, contrasting with a smooth belly in both sexes. The belly of the male is black with white spots, while the females are marbled black and white. Both sexes usually have a butterfly-shaped marking between the eyes and dark bands on their arms and legs. Bright red patches are present on the back of the legs and in the groin area. Males have relatively large heads with tooth-like projections from the lower jaw that look like tusks. Both sexes have un-webbed fingers and slightly webbed toes. Females are approximately 35 mm long, while males are approximately 45 mm in length.

Habitat

The tusked frog is found in rainforests, wet sclerophyll forests and open grasslands. This species is typically found near water sources such as puddles, creeks and ponds, under leaf litter, logs and stones.

Feeding

The tusked frog feeds on snails, insects and a variety of other invertebrates. Males tend to have a larger proportion of snails in their diet as they are generally found closer to the water, while females usually have more invertebrates found from drier forest areas.

Breeding

Season: The tusked frog starts breeding rituals in spring and summer. The males begin calling and displaying territorial and fighting behaviour.

The female lays hundreds of eggs in a floating foam nest. Tadpoles are a dark brown to black in colour and sometimes display a small cream patch on the snout.

Conservation

Status: The tusked frog is listed as vulnerable in Queensland under the *Nature Conservation (Wildlife) Regulation 2006.*

Threats: The tusked frog is threatened by habitat modification and pollution, as well as chytridiomycosis (a fungus causing a hardening of skin in amphibians, stopping the absorption of water and salts and therefore causing death in frogs worldwide).

Recommendations: Tusked frog populations would benefit from the preservation of existing habitat.

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

Distribution

The tusked frog is found on Australia's eastern coastline, over an area of up to approximately 80,000 km². This species is found throughout the Moreton Bay region, except for costal areas and islands.

References: Frogs Australia 2011. Adelotus brevis. Taken from The Australian Frogs Database. http://www.frogsaustralia.net.au/frogs/display.cfm?frog_id=1. Accessed 11 April 2011. Hines H, Meyer E, Hero J, Newell D, Clarke J. 2004. Adelotus brevis. International Union for Conservation of Nature (IUCN) Red List of Threatened Species. Version 2010.4. http://www.iucnredlist.org/apps/redlist/details/520/0. Accessed 11 April 2011. New South Wales Department of Environment and Conservation 2011. Overview of the Dry sclerophyll forests (shrubby sub formation). http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/veg1_details.aspx?name=Dry%20sclerophyll%20forests%20(shrubby%20sub-formation). Accessed 11 April 2011. Map distribution data supplied by Moreton Bay Regional Council and WildNet (DERM). Map produced by Golder Associates ©. Photo supplied by the Moreton Bay Regional Council.

Priority Number: 68

Little tern

Sternula albifrons

Description

Defining feature: The little tern is a very small, migratory seabird.

Physical description: The little tern has grey plumage, except for the tips of the wings and the head which are predominantly black. The wings are very narrow and the tail is deeply forked. The legs, bill and feet are black but change to yellow during the breeding season. Breeding birds also have a white forehead.

Habitat

The little tern lives almost entirely in sheltered coastal habitats. However, it may also be found several kilometres from the sea in harbours, inlets and rivers. Nesting takes place on sandy beaches or shingle pits.

Feeding

Little terns are carnivorous and feed mostly on small fish, but also eat crustaceans, insects, worms and shellfish. They forage for prey by plunging into the shallow water of channels, estuaries and surf beaches.

Breeding

Season: The little tern breeds between May and July. Females lay one to three eggs that are incubated by both parents for 17 - 22 days. The newly hatched young are cared for by both parents for a further 19 days before they leave the nest.

Nests are constructed on barren or sparsely vegetated habitat such as beaches, islands and spits of sand, rocks or coral fragments. The nests are merely a scrape in the ground located just about the high tide line and only a few meters from water.

Conservation

Status: The little tern is listed as endangered in Queensland under the *Nature Conservation (Wildlife) Regulation 2006.*

Threats: The nesting sites of the little tern are particularly vulnerable to human disturbance, predators and natural disasters such as flooding. Coastal development and sand mining reduces the breeding success of this species. Food sources of the little tern are also at risk from the modification of drainage patterns through damming of tidal creeks, reclamation of intertidal areas, and the destruction of seagrass and mangrove habitats.

Recommendations: The little tern would greatly benefit from the protection of their breeding grounds. This could be achieved by constructing a fence and protection zone around habitat to minimise human disturbance and control predators.

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

Distribution

The little tern has a large range with breeding populations spreading through Europe, Africa, Asia and Australasia. Within Australia, the little tern is found from Shark Bay in Western Australia, around north and eastern Australia, to St Vincent in South Australia.

References: New South Wales Parks and Wildlife Service. Threatened Species Information: Little Tern. http://www.environment.nsw.gov.au/resources/nature/tsprofileLittleTern.pdf. Accessed 20 April 2011. Map distribution data supplied by Moreton Bay Regional Council and WildNet (DERM). Map produced by Golder Associates ©. Photo supplied by Mark G Sanders EcoSmart Ecology Pty Ltd.

Priority Number: 69

Australian fritillary butterfly

Argyreus hyperbius inconstans

Description

Defining feature: The Australian fritillay butterfly inhabits swampy, coastal habitats and is a sexually dimorphic species with the males and females differing in appearance.

Physical description: The adult male Australian fritillary butterfly is light orange on the top of the wings, with rounded black spots and a double middle line in black. Beneath the front wing, the male butterfly is coloured pink-orange with spots. Under the back wing, the male is light orange with black markings edged with silver. The female is a paler orange than the male, with black markings at the tip, middle and end of the wings that are more pronounced than on the male. The tip of the female's front and back wings are sometimes tinged with green.

Habitat

The Australian fritillary butterfly is restricted to habitats in which the larval food plant, *Viola betonicifolia,* grow. This includes open, swampy and coastal areas. This species is often found in estuaries, near sea level, within these habitats.

Feeding

Larvae of Australian fritillary butterflies feed upon their host plant *Viola betonicifoli,* while adults feed on a variety of flowers.

Breeding

Season: The eggs of the Australian fritillary butterfly hatch in midsummer.

Female Australian fritillary butterflies settle on the ground and crawl about in search of the host plant when about to lay eggs. They lay eggs on the host plant or leaves of plants over which the host is growing. After hatching, the species has a larval duration of around 23 days, and a brief four-day pupal duration. All adult butterflies emerge in the morning.

Conservation

Status: The Australian fritillary butterfly is listed as endangered in Queensland under the *Nature Conservation (Wildlife) Regulation 2006.*

Threats: Habitat destruction is a threat to the Australian fritillary butterfly. Other possible threats include the invasion and predation by introduced ants (e.g., fire ants and coastal brown ants) and uncontrolled butterfly collection at sites essential to the Australian fritillary butterfly.

Recommendations: The remaining localities with existing populations would benefit from limited or no disturbance. Conservation efforts would be helped by defining habitat requirements and developing schemes to re-establish populations at old sites or in new areas where the habitat is suitable.

Distribution

The Australian fritillary butterfly is found in south-eastern Queensland and north-eastern New South Wales between Gympie and Port Macquarie.

Note: This species is thought to occur within Moreton Bay region; however limited to no distribution records are available. Records are known immediately adjacent to Moreton Bay region. Council welcomes additional information on the whereabouts of this species.

References: Wildlife and Ecosystems - Queensland Government. 2011. Australian fritillary butterfly. http://www.derm.qld.gov.au/wildlife-ecosystems/wildlife/az_of_animals/australian_fritillary_butterfly.html. Accessed 14 April 2011. Photo supplied by Don Herbison-Evans and the Macleay Museum.

Priority Number: 70

Water grass

Lilaeopsis brisbanica

Description

Defining feature: Water grass is a mat-forming herb found growing alongside waterways.

Physical description: Water grass grows to between 1.5 and 4.0 cm high. The roots grow horizontally along the ground with roots appearing from joints in stems. Roots are very fine and white to pale green in colour. The leaves grow in groups of three to five from tiny stalks of about 1.5 mm long. The leaves are straight, hollow and hairless, and are divided into five to seven segments lengthways. Flowers are white to green and are arranged in groups of two to five on stalks that are 3.5 to 7.0 mm long. The fruit is egg-shaped and measures 1.2 to 2.0 mm long.

Habitat

Water grass grows in silty, grey mud along tidal riverbanks with saline waters, usually associated with mangrove trees. This plant can also live adequately alongside freshwater.

Lifecycle

Water grass produces flowers and fruit between October and January.

Conservation

Status: Water grass is listed as endangered in Queensland under the *Nature Conservation (Wildlife) Regulation 2006.*

Threats: Threats to water grass include trampling by livestock, bank erosion, competition with weeds and damage from construction of retaining walls, bridges and jetties.

Recommendations: To reduce threats to water grass it is recommended to identify new populations and protect them from disturbance, weed invasion, grazing and clearing.

Distribution

Water grass is currently known in only one section of the Brisbane River between Moggill Creek and Oxley Creek. It is thought to be locally extinct from all other areas.

Note: This species is thought to occur within Moreton Bay region; however limited to no distribution records are available. Records are known immediately adjacent to Moreton Bay region. Council welcomes additional information on the whereabouts of this species.

References: State of Queensland Department of Environment and Resource Management 2011. Species information – Lilaeopsis brisbanica. Wetland Info. http://www.epa.qld.gov.au/wetlandinfo/site/factsfigures/FloraAndFauna/Flora/IndicatorSpeciesList/18503.html. Accessed 14 April 2011. Photo supplied by Glenn Leiper.

Priority Number: 71

Wallum rocketfrog

Litoria freycineti

Description

Defining feature: Wallum rocketfrogs produce a fast quacking or yapping call.

Physical description: The wallum rocketfrog is a pale grey-brown to dark brown colour on its back with irregular dark blotches, warts and skin folds arranged in rows. The area from the snout to the eyes is pale with a darkish central patch. A dark streak runs from the snout, over the eye and membrane covering the entrance to the ear, and continues down the side of the body. A pale stripe runs from below the eye to the base of the arm. The belly is white and rough. The backs of the thighs are brown with large cream spots. The finger and toe pads are small, and the toes are almost fully webbed. The wallum rocketfrog grows up to 25 mm. Tadpoles are grey-brown in colour often with darker lines down either side of the spine.

Habitat

The wallum rocketfrog lives in forests, heaths and temporary coastal swamps.

Feeding

The wallum rocketfrog is from the family 'Hylidae' which feeds on insects and other invertebrates.

Breeding

Season: Male wallum rocketfrogs call in spring and summer after rain, when breeding occurs.

During the breeding process, the male wallum rocketfrog kicks the eggs free of the female and they are scattered over the bottom of a pond or stream. The tadpoles develop quickly and can survive relatively high water temperatures.

Conservation

Status: The wallum rocketfrog is listed as vulnerable in Queensland under the *Nature Conservation (Wildlife) Regulation 2006.*

Threats: The major threat to the wallum rocketfrog is clearing for agriculture, pine plantations, housing and infrastructure. These frogs occur in areas with the highest rate of human population growth in Australia.

Recommendations: To help reduce the threats to the Wallum rocketfrog, habitat should be maintained by protecting areas from clearing and timber harvesting.

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

Distribution

The wallum rocketfrog occurs in south-eastern Queensland and north-eastern New South Wales. This species is found at several locations on Bribie Island in the Moreton Bay region.

References: Frogs Australia Network. 2005. Australian Frog Database - Litoria freycineti. http://www.frogsaustralia.net.au/frogs/display.cfm?frog_id=153. Accessed 14 April 2011. Hines H, Hero J-M, Meyer E, Newell D. 2004. Litoria freycineti. International Union for Conservation of Nature (IUCN) Red List of Threatened Species. Version 2010.4. http://www.iucnredlist.org/apps/redlist/details/41033/0. Accessed 14 April 2011. Map distribution data supplied by Moreton Bay Regional Council and WildNet (DERM). Map produced by Golder Associates ©. Photo supplied by Mark G Sanders EcoSmart Ecology Pty Ltd.

Priority Number: 73

Beach stone-curlew

Esacus magnirostris

Description

Defining feature: The beach stone-curlew is a large wading bird that lives in coastal areas.

Physical description: The beach stone-curlew reaches approximately 56 cm in length with a wingspan of up to 1 m. Adults have a large head, an up- tilted bill and thick legs, and they appear hunched in profile. The beach stone-curlew has a predominantly grey-brown upper body, with black and white patterning on the face and shoulder. The throat and breast are pale grey and the belly is white. The wings are mostly white with black tips.

Habitat

The beach stone-curlew occurs in coastal environments, preferring open, undisturbed beaches with mangroves, islands, reefs and estuarine intertidal sandflats and mudflats. This wader may also frequently visit river mouths, offshore sandbars and rock platforms.

Feeding

The beach stone-curlew forages with a heron-like action, spearing crabs and other marine invertebrates with its bill.

Breeding

Season: The beach stone-curlew breeds from September to November.

The beach stone-curlew nests on sand banks, spits and islands in estuaries, among mangroves, or in sand surrounded by short grasses. Parental care is shared by both parents and typically only one egg is laid. Young become independent between seven to twelve months.

Conservation

Status: The beach stone-curlew is listed as vulnerable in Queensland under the *Nature Conservation (Wildlife) Regulation 2006.*

Threats: The beach stone-curlew is threatened by a loss of habitat, predation by raptors, ravens, cats, domestic dogs and foxes. Disturbance of nests by activities associated with dog walking, driving on the beach and boating can sometimes cause birds to desert their nest. Nests are also commonly destroyed by pigs.

Recommendations: Threats to the beach stone-curlew could be reduced by controlling predation. Breeding sites could be fenced to deter feral predators and reduce disturbance. Domestic cats and dogs living nearby to beach stone-curlew habitat could also be locked away at night to avoid interaction with the birds.

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

Distribution

The beach stone-curlew is found around the coast of north Australia, with most of the population between mid-north Western Australia and north-east New South Wales. In the Moreton Bay region this species is found on Bribie Island and around Sandstone Point and Scarborough.

References: New South Wales Department of Environment and Conservation 2011. Beach Stone-curlew profile. http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10280. Accessed 27 April 2011. Pizzey G. 1997. Field Guide to Birds of Australia: The Graham Pizzey and Frank Knight Field Guide. Haper Collins Publishers Pty Limited. Map distribution data supplied by Moreton Bay Regional Council and WildNet (DERM). Map produced by Golder Associates ©. Photo supplied by The Queensland Museum.

Priority Number: 74

Major Mitchell's cockatoo

pink cockatoo

Lophochroa leadbeateri

Description

Defining feature: Major Mitchell's cockatoo is a distinctive pink and white cockatoo.

Physical description: Major Mitchell's cockatoo has white feathers with a salmon pink colouration through them. These birds have a white bill and an upright white crest with bands of red and yellow. The female crest has a broader yellow band. Female cockatoos also have red eyes, while males have dark brown eyes.

Habitat

Major Mitchell's cockatoo lives in forests and grasslands surrounding watercourses. These cockatoos are often associated with tree species including *Acacia, Eucalyptus* and cypress.

Feeding

Major Mitchell's cockatoo feeds on seeds within the foliage of trees such as *Acacia*, saltbush and native cypress. These birds also feed on the ground on the seeds of small melons.

Breeding

Season: In Queensland, Major Mitchell's cockatoo breeds from May to August.

This cockatoo nests in tree hollows, on decayed debris and bark fragments, and on pebbles. The females lay 2 - 4 eggs that are white and oval.

Conservation

Status: Major Mitchell's cockatoo is listed as vulnerable in Queensland under the *Nature Conservation (Wildlife) Regulation 2006.*

Threats: Clearance of feeding and breeding habitat has reduced the population of Major Mitchell's cockatoos in the southern and eastern parts of the species' range. Grazing and weed invasion are also slowing the production of trees that are used for breeding. Nest robbing and trapping for aviculture may also be a threat to the conservation of Major Mitchell's cockatoo.

Recommendations: Threats to Major Mitchell's cockatoo can be reduced by protecting existing habitat, restoring degraded habitat and controlling plant and animal pests.

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

Distribution

Major Mitchell's cockatoo is found from inland Queensland, New South Wales and Victoria to the west coast of Western Australia. This species has been found in the south of the Moreton Bay region.

References: Pizzey G. 1997. Field Guide to Birds of Australia: The Graham Pizzey and Frank Knight Field Guide. Haper Collins Publishers Pty Limited. Map distribution data supplied by Moreton Bay Regional Council and WildNet (DERM). Map produced by Golder Associates ©. Photo supplied by The Queensland Museum.

Priority Number: 75

Southern emu-wren

Stipiturus malachurus

Description

Defining feature: The southern emu-wren is a tiny bird with an exceptionally long tail.

Physical description: The southern emu-wren is a small bird at 6 - 7 cm, with a long tail consisting of six feathers that are approximately 11 cm long. Males have grey-brown upperparts with thick dark streaks of black and brown from the head to the base of the tail. The eyebrow, upper breast and throat are pale light blue and the under parts are light tawny-brown. Females are similar in appearance but lack the blue colouration. The southern emu-wren is shy with weak flight and usually moves about on the ground like a mouse with its tail pointing down.

Habitat

The southern emu-wren is found in a variety of swamp and heathland habitats, including scrublands, coastal heathlands and dune vegetation. These birds prefer dense vegetation such as tea trees, sedges, rushes and ferns.

Feeding

The southern emu-wren feeds on or close to the ground amongst dense vegetation. The main components of its diet include insects, spiders, flies, caterpillars and some seeds. This bird can also split open reed stems to capture any insects inside. Outside the breeding season foraging for food can occur in large groups of up to forty birds.

Breeding

Season: The southern emu-wren breeds from August to January.

The southern emu-wren breeds in pairs and females are capable of breeding in their first year. The female builds an oval-shaped nest from grass. The nest is positioned just above the ground in grass tussock or dense shrubbery and has a small, round entrance. Nests typically contain 2 - 4 eggs that are incubated by the female, although both parents care for juveniles after hatching.

Conservation

Status: The southern emu-wren is listed as vulnerable in Queensland under the *Nature Conservation (Wildlife) Regulation 2006*.

Threats: The southern emu-wren is threatened by a loss of habitat and subsequent habitat fragmentation.

Recommendations: Protection and maintenance of habitat used by the southern emu-wren could help preserve the current population.

Distribution

The southern emu-wren is found along the eastern and western coasts of Australia, from south-eastern Queensland to Tasmania and from Shark Bay to Israelite Bay and inland to the town of Norseman.

Note: This species is thought to occur within Moreton Bay region; however limited to no distribution records are available. Records are known immediately adjacent to Moreton Bay region. Council welcomes additional information on the whereabouts of this species.

References: Bird J, Butchart S. 2009. Stipiturus malachurus. International Union for Conservation of Nature (IUCN) Red List of Threatened Species. Version 2010.4. http://www.iucnredlist.org/apps/redlist/details/146103/0. Accessed 7 April 2011. Birds Australia 2011. Southern Emu-wren. http://birdsinbackyards.net/species/Stipiturus-malachurus. Accessed 11 April 2011. Department of Sustainability, Environment, Water, Population and Communities 2011. Stipiturus malachurus intermedius — Southern Emu-wren (Fleurieu Peninsula), Mount Lofty Southern Emu-wren in Species Profile and Threats Database. http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=26005. Accessed 11 April 2011. Photo supplied by Chris Tzaros Birds Australia.

Priority Number: 76

Painted honeyeater

Grantiella picta

Description

Defining feature: The painted honeyeater has a distinctive pink bill.

Physical description: The painted honeyeater grows up to 16 cm in length. This bird has a black head and back contrasting against the white underside of its body. The wings and tail are black with bright yellow edges. The bill is distinctly pink, darkening toward the tip. The flanks have black streaks, however these are absent on the somewhat duller females and juveniles.

Habitat

The painted honeyeater inhabits a variety of dry open forests and woodlands including gum woodlands and ironbark forests associated with mistletoe. This bird is also found alongside rivers, on plains with scattered trees and on farmland with pockets of remnant vegetation.

Feeding

The painted honeyeater is a specialist feeder on the fruits of mistletoes, although it will also feed on nectar and invertebrates found in eucalypts. The birds feed by themselves, in pairs, or in small groups of up to six birds.

Breeding

Season: The painted honeyeater nests from spring to autumn in a loose colony.

Pairs of painted honeyeaters breed for one season, building small nests in the outer canopy of trees. Sometimes the same nests or trees are re-used over several breeding seasons. Males display territorial behaviour during nesting and care of the young is shared by both parents. Eggs are sometimes taken by spiny-cheeked honeyeaters.

Conservation

Status: The painted honeyeater is listed as vulnerable in Queensland under the *Nature Conservation (Wildlife) Regulation 2006.*

Threats: Threats to the painted honeyeater include loss of habitat and trees with mistletoe, brought about by land clearing and heavy grazing of grassy woodlands.

Recommendations: Threats to populations of the painted honeyeater could be reduced by fencing existing forest remnants to encourage regeneration of associated plant species. Growing and planting local plant species and managing grazing on sites could also help to maintain breeding and foraging habitat in support of the current painted honeyeater population.

References: New South Wales Department of Environment and Conservation 2011. Painted Honeyeater profile. http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10357. Accessed 6 April 2011. Birds Australia 2011. Painted Honeyeater. http://birdsinbackyards.net/species/Grantiella-picta Accessed 6 April 2011. Bird J, Butchart S, Garnett S. 2004. Grantiella picta. International Union for Conservation of Nature (IUCN) Red List of Threatened Species. Version 2010.4. http://www.iucnredlist.org/apps/redlist/details/146271/0 Accessed 7 April 2011. Map distribution data supplied by Moreton Bay Regional Council and WildNet (DERM). Map produced by Golder Associates ©. Photo supplied by Chris Tzaros Birds Australia.

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

Distribution

The painted honeyeater is a nomadic species that moves from place to place without settling. These birds occur in low densities throughout Queensland and New South Wales west of the Great Dividing Range, up to northern Victoria. They are occasionally found in the Northern Territory.

Priority Number: 77

Red-tailed tropic bird

strawtail

Phaethon rubricauda

Description

Defining feature: The red-tailed tropic bird has bright red central tail feathers that are lengthened to look like streamers.

Physical description: The red-tailed tropic bird grows to 0.95 - 1 m, with a wingspan ranging from 1.11 - 1.19 m. Adult birds are mainly white with a pink sheen and have a bright red bill. A black stripe extends on either side of the eye and the legs and feet are grey to black. The central tail feathers are lengthened like streamers and are bright red in colour. Juveniles have a grey or black bill and are barred black and white on the head, back, rump and upper wing. Juveniles lack red streamers in the tail.

Habitat

The red-tailed tropic bird is an ocean living species that prefers tropical marine waters generally at temperatures of 24 °C to 30 °C. These birds nest on remote islands and out-of-the-way places such as cliffs.

Feeding

The red-tailed tropic bird feeds mainly on fish and squid, although there have been records of the species following fishing boats for discarded fish.

Breeding

Season: The red-tailed tropic bird is typically solitary but bonds with a partner for the duration of the breeding season between October and April.

Birds make flying displays before and straight after egg laying. Nests are a simple scrape in the ground usually surrounded by stones and plant material, and only one egg is laid per season. Both parents share care of the young during incubation (41 - 51 days) and until the chick is ready to fledge (three months).

Conservation

Status: The red-tailed tropicbird is listed as vulnerable in Queensland under the *Nature Conservation (Wildlife) Regulation 2006.*

Threats: Threats to the red-tailed tropic bird include predation on young by ospreys, silver gulls, ravens, white-bellied sea eagles, rats, cats and dogs. Human activity such as mining and land clearing has also reduced nesting habitat. This species is also hunted for its tail feathers.

Recommendations: The red-tailed tropic bird could benefit from protection against disturbance and predation within nesting sites.

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

Distribution

The red-tailed tropic bird is found in the tropical waters of the Indian and Pacific Oceans, but not as far east as South America. The birds nest on islands throughout this range including Lady Elliot Island in Queensland, and Bribie Island in Moreton Bay.

References: New South Wales National Parks and Wildlife Service 1999. Red-tailed Tropicbird. Threatened Species Information Sheet. http://www.environment.nsw.gov.au/resources/nature/tsprofileRedtailedTropicbird.pdf. Accessed 6 April 2011. Bird J, Butchart S. 2009. Phaethon rubricauda. International Union for Conservation of Nature (IUCN) Red List of Threatened Species. Version 2010.4. http://www.iucnredlist.org/apps/redlist/details/144608/0 Accessed 7 April 2011. Map distribution data supplied by Moreton Bay Regional Council and WildNet (DERM). Map produced by Golder Associates ©. Photo supplied by R Clarke.

Priority Number: 78

Plumed frogmouth

Podargus ocellatus plumiferus

Description

Defining feature: The large strong beak of the plumed frogmouth has a very wide gape which is the basis of the frogmouth name and provides an immediate distinction from the weaker-beaked owlet-nightjars, potoos, and true nightjars.

Physical description: The plumed frogmouth is a nocturnal bird with a strong wide beak that is hooked at the tip. They have cryptic coloration, rounded wings and short legs. The male's upperparts vary from dull grey-brown to deep reddish-brown with varying amounts of streaks, marbling and spots, and often have whitish barring and longitudinal dark streaks. Females are often darker than males. The plumed frogmouth grows to sizes of around 19 - 60 cm and range in weight from about 43 g to 670 g.

Habitat

The plumed frogmouth lives in rainforest and also within sclerophyll vegetation. Pairs of birds move around very little within a home range, although they can cover distances of up to 10 km across unsuitable habitat.

Feeding

The plumed frogmouth has a diet consisting mainly of insects and the occasional frog. This bird will hunt for small creatures in patches of subtropical lowland forest.

Breeding

The plumed frogmouth nests in trees frequently associated with vines, and nests hardly ever contain more than one egg.

Conservation

Status: The plumed frogmouth is listed as vulnerable in Queensland under the *Nature Conservation (Wildlife) Regulation 2006.*

Threats: The main threat to the plumed frogmouth is loss of habitat, most of which is the result of clearing for agriculture, timber extraction, or for hoop pine plantations. Fire around the edges of forests may also have some impact as well as small numbers of deaths associated with car strike on nearby roads.

Recommendations: The protection and maintenance of habitat currently used by the plumed frogmouth could help recover the current population.

Distribution

The plumed frogmouth has been recorded in Queensland (Bellthorpe-Conondale-Brooloo region) and New South Wales (Nightcap Range and Mt Warning National Park), as well as separate sub-populations recorded in Many Peaks Range, near Gladstone, Queensland and south from the D'Aguilar Range.

Note: This species is thought to occur within Moreton Bay region; however limited to no distribution records are available. Records are known immediately adjacent to Moreton Bay region. Council welcomes additional information on the whereabouts of this species.

References: Garnett ST, Crowley GM. 2000. The Action Plan for Australian Birds 2000. Recovery outlines and taxon summary - Plumed frogmouth. http://www.environment.gov.au/biodiversity/threatened/publications/action/birds2000/pubs/plumed-frogmouth.pdf. Accessed 26 April 2011. Photo supplied by R Clarke.

Priority Number: 79

Illidge's ant-blue butterfly

Acrodipsas illidgei

Description

Defining feature: Illidge's ant-blue butterfly has a complex life cycle, providing an example of a symbiotic relationship with a mangrove community.

Physical description: Illidge's ant-blue butterfly is a small butterfly similar to the small ant-blue and the grey ant-blue butterflies. The female is the larger of the sexes with a wingspan of 24 mm. The top of the female's wing is blue while the under-wing is a patchy mix of browns and yellows. The males wingspan is 22 mm and their wings lack the blue colouration of the female; both the top and underside of the wings are a mixture of browns.

Habitat

Illidge's ant-blue butterfly is found in mangrove habitats and in woodlands near to mangroves. This butterfly has also been found in coastal areas where its associated ant species occurs in dead branches or under the bark of older trees.

Feeding

Adult females of Illidge's ant-blue butterfly sometimes feed on *Avicennia* flowers. At a larval stage the species feeds on ants of the genus *Crematogaster.*

Breeding

Illidges's ant-blue butterfly has a symbiotic relationship with *Crematogaster* ants. These ants carry the eggs of the butterfly into their nest, protecting them from predation by other species. When hatched, the larvae make a sweet substance that the ants feed on, and then the larvae eat the immature ants.

Conservation

Status: Illidge's ant-blue butterfly is listed as vulnerable in Queensland under the *Nature Conservation (Wildlife) Regulation 2006.*

Threats: Threats common to many Australian butterflies include removal of habitat, and disturbance from inappropriate land management, and agricultural and forestry practices. The loss of high points due to hilltop leveling (eg., for telecommunications towers or forestry lookout towers) can also affect butterflies that gather in large numbers on isolated high points, which is presumed to facilitate mate finding.

Recommendations: Habitat protection and management is an important aspect of butterfly conservation, particularly for mangrove habitat for Illidge's ant-blue butterfly.

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

Distribution

Illidge's ant-blue butterfly is found at six sites in Australia including Mary River Heads, Beaver Rock and Maaroom in the Mary River Region, Redland Bay and Point Halloran. In the Moreton Bay region this butterfly has been seen at the mouth of the Pine River.

Priority Number: 80

References: The State of Queensland Museum 2010. Mangrove Challenge. Queensland Museum learning resources. http://www.qm.qld.gov.au/microsites/mangrove/mangroves.asp. Accessed 26 April 2011. Braby MF 2004. The complete field guide to butterflies of Australia. Victoria, CSIRO Publishing. 352 p. Sands DPA, New TR 2002. The Action Plan for Australian Butterflies. Environment Australia, Canberra. http://www.environment.gov.au/biodiversity/threatened/publications/action/butterfly/pubs/butterflies.pdf. Accessed 26 April 2011. Beale JP, Zalucki MP 1995. Status and distribution of Acrodipsas illidgei (Waterhouse and Lyell) (Lepidoptera: Lycaenidae) at Redland Bay, south-eastern Queensland, and new plant-association record. Journal of the Australian Entomological Society 34.2: 163-168. http://onlinelibrary.wiley.com/doi/10.1111/j.1440-6055.1995.tb01312.x/pdf. Accessed 1 June 2011. Map distribution data supplied by Moreton Bay Regional Council and WildNet (DERM). Map produced by Golder Associates ©. Photo supplied by The Queensland Museum.

Mark's cassia

Cassia marksiana

Description

Defining feature: Mark's cassia is a tall, evergreen tree that produces fragrant golden-yellow flowers.

Physical description: Mark's cassia can grow up to 25 m tall, although most trees are 5 - 10 m tall. The flowers are fragrant and hang in large clusters from the fresh, lime-green foliage. Brown, cylindrical fruits are segmented and contain hard yellow-brown seeds, each enclosed in a cardboard-like envelope. Caterpillars often give the tree a briefly scruffy look.

Habitat

Mark's cassia is found in coastal rainforest and river areas of rainforest. The tree is also found in regrowth vegetation on farmland and along roadsides. The tree predominantly grows in more fertile soil-types and is often found in low and flat sites.

Lifecycle

Mark's cassia flowers in summer and develops fruit in winter.

Conservation

Status: Mark's cassia is listed as vulnerable in Queensland under the *Nature Conservation (Wildlife) Regulation 2006.*

Threats: Much of the former habitat of Mark's cassia has been cleared. The tree is threatened by loss and fragmentation of habitat, weed invasion, roadworks and grazing impacts.

Recommendations: To reduce the threat to Mark's cassia tree, it is recommended to identify populations along roadsides and protect them during road works and from stock by fencing. Removal of weeds from known and potential habitat and protecing habitats from clearing and development would also be beneficial.

Distribution

Mark's cassia occurs north from Brunswick Heads, around Murwillumbah, and north into south-east Queensland as far as Beenleigh.

Note: This species is thought to occur within Moreton Bay region; however limited to no distribution records are available. Records are known immediately adjacent to Moreton Bay region. Council welcomes additional information on the whereabouts of this species.

References: New South Wales Department of Environment and Conservation 2011. Brush Cassia profile. http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10150. Accessed 14 April 2011. Environment, Climate Change and Water. 2011. Cassia brewsteri var. marksiana (a tree) - endangered species listing. http://www.environment.nsw.gov.au/determinations/CassiaBrewsteriVarMarksianaEndSpListing.htm. Accessed 14 April 2011. National Herbarium of New South Wales. 2011. New South Wales Flora Online - Cassia marksiana. http://plantnet.rbgsyd.nsw.gov.au/cgi-bin/NSWfl.pl?page=nswfl&lvl=sp&name=Cassia~marksiana. Accessed 14 April 2011.
Photo supplied by Glenn Leiper.

Priority Number: 81

Tiny wattle

Acacia baueri subsp. baueri

Description

Defining feature: Tiny Wattle is an erect or spreading shrub with light cream to golden yellow globular flower heads.

Physical description: Tiny wattle is a shrub. The leaves are phyllodes (flattened stems that have taken on the appearance and purpose of leaves). These are in whorls around the main stem and are approximately 0.5 - 2.0 cm apart. Tiny wattle has small, yellow flowers.

Habitat

Tiny wattle grows in wet sandy heath on the coast.

Conservation

Status: Tiny wattle is considered vulnerable in Queensland under the *Nature Conservation (Wildlife) Regulation 2006.*

Threats: Threats to the tiny wattle include loss and degradation of habitat caused by land clearance.

Recommendations: Threats to tiny wattle can be reduced by protecting known populations and their preferred habitat from land clearance.

Distribution

Tiny wattle occurs north from Botany Bay, Sydney.

Note: This species is thought to occur within Moreton Bay region; however limited to no distribution records are available. Records are known immediately adjacent to Moreton Bay region. Council welcomes additional information on the whereabouts of this species.

References: National Herbarium of New South Wales 2011. Acacia baueri Benth. subsp. Baueri. Plantnet. http://plantnet.rbgsyd.nsw.gov.au/cgi-bin/NSWfl.pl?page=nswfl&lvl=in&name=Acacia~baueri+subsp.~baueri. Accesses 10 May 2011. Photo supplied by Moreton Bay Regional Council.

Priority Number: 83

Tea-tree

Leptospermum luehmannii

Description

Defining feature: A tall, open shrub with light brown peeling bark. The white flowers appear in summer.

Physical description: Tea-tree is a spreading shrub growing to 3 m high. The bark is smooth, green, orange and brown and peels in long ribbons. The leaves are green, shiny, and measure 18 - 25 mm long and 2.7 - 5.0 mm wide. When young they have silky hairs on their margins. The flowers are white and measure 1 cm across.

Habitat

Tea-tree grows in open shrubland on steep slopes of acid volcanic rock.

Lifecycle

Tea tree flowers in summer.

Conservation

Status: Tea-tree is listed as vulnerable in Queensland under the *Nature Conservation (Wildlife) Regulation 2006.*

Threats: Threats to the tea-tree include loss and degradation of habitat caused by land clearance.

Recommendations: Threats to tea-tree can be reduced by protecting known populations and their preferred habitat from land clearance.

Additional information

Tea-tree is a common name that has been given to a number of unrelated plants.

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

Distribution

Tea tree is found from Queensland to the New South Wales border. This species has been recorded at Elimbah in the Moreton Bay Region.

References: Royal Botanic Gardens & Domain Trust 2011. Profile for Leptospermum luehmannii http://pngplants.org/cgi-bin/NSWfl.pl?page=nswfl&lvl=sp&name=Leptospermum~luehmannii. Accessed 26 April 2011. Photo supplied by Glenn Leiper.

Priority Number: 85

Fine-leaved tuckeroo

Lepiderema pulchella

Description

Defining feature: Fine-leaved tuckeroo is a small rainforest tree.

Physical description: Fine-leaved tuckeroo grows up to 15 m tall. The leaves are light green, hairless, glossy, and are made up of 4 - 14 narrow leaflets with wavy edges. The yellowy-orange flowers are 2 - 3 mm long. The fruit is orange and, when ripe, it opens into three lobes to reveal shiny, dark brown seeds with a fleshy yellow covering at the base.

Habitat

Fine-leaved tuckeroo grows in lowland subtropical rainforest, usually along riparian margins.

Lifecycle

The fruit of the fine-leaved tuckeroo is ripe in December.

Conservation

Status: The fine-leaved tuckeroo is listed as vulnerable in Queensland under the *Nature Conservation (Wildlife) Regulation 2006.*

Threats: Threats to the fine-leaved tuckeroo include loss and degradation of habitat caused by weed invasion and land clearance. Seed collection for horticulture purposes also impacts this species.

Recommendations: Threats to fine-leaved tuckeroo can be reduced by protecting known populations and their preferred habitat from land clearance and weed infestation. It is also recommended that fine-leaved tuckeroo plants should only be bought from a reputable supplier and seeking a permit before collecting wild seed will also regulate threats to the plants survival.

Distribution

Fine-leaved tuckeroo is found in Queensland and along the New South Wales coastline.

Note: This species is thought to occur within Moreton Bay region; however limited to no distribution records are available. Records are known immediately adjacent to Moreton Bay region. Council welcomes additional information on the whereabouts of this species.

References: New South Wales Department of Environment and Conservation 2011. Fine-leaved Tuckeroo profile. http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10460. Accessed 15 April 2011. Harden G 2011. Lepiderema pulchella. New South Wales flora online. http://plantnet.rbgsyd.nsw.gov.au/cgi-bin/NSWfl.pl?page=nswfl&lvl=sp&name=Lepiderema~pulchella. Accessed 15 April 2011. Photo supplied by Moreton Bay Regional Council.

Priority Number: 86

Aponogeton

Aponogeton elongatus subsp. fluitans

Description

Defining feature: *Aponogeton elongatus* subsp. *fluitans* is named for the distinctive floating leaves, from the Latin fluito meaning 'to float'.

Physical description: *Aponogeton elongatus* subsp. *fluitans* is a submersed aquatic plant. The leaves are green or dark-green to maroon-green and are up to 42 cm long and 6.7 cm wide. This plant produces smaller leaves that commonly float. Flowers are yellow. The fruit of this species are round, with a thick coat and are up to 5.8 mm long and 5 mm wide.

Habitat

Aponogeton grows in freshwater rivers and streams through rainforest.

Lifecycle

Aponogeton flowers and fruits from October through to April.

Conservation

Status: *Aponogeton elongatus* subsp. *fluitans* is listed as vulnerable in Queensland under the *Nature Conservation (Wildlife) Regulation 2006.*

Threats: Aponogeton is a popular aquarium species and are vulnerable to collection from the wild.

Recommendations: The collection of Aponogeton from the wild is now restricted and wild populations are protected.

Distribution

Aponogeton is found in creeks and streams in parts of south-east Queensland.

Note: This species is thought to occur within Moreton Bay region; however limited to no distribution records are available. Records are known immediately adjacent to Moreton Bay region. Council welcomes additional information on the whereabouts of this species.

References: Tappin AR 2011. Aquatic Life: Aponogeton. http://aquaticlife.angfaqld.org.au/Aponogeton.htm. Accessed 21 April 2011. Jacobs SWL, Les DH, Moody ML, Hellquist CB 2006. Two new species of Aponogeton (Aponogetonaceae), and a key species from Australia. Telopea 11(2), 129-134. Photo supplied by Gunther Schmida.

Priority Number: 87

Swamp herb

Maundia triglochinoides

Description

Defining feature: The swamp herb is a perennial plant that has horizontal roots (rhizomes).

Physical description: Swamp herb has many fine roots about 5 mm thick that have tufts of leaves arising along their length. The leaves are triangular in cross section and grow up to 80 cm long and 5 - 10 mm wide. Clusters of flowers grow up to 10 cm long and 2.5 cm wide. The female parts of flower are 6 - 8 mm long, attached at the base and each have a spreading beak (a firm, tapering tip).

Habitat

Swamp herb grows in swamps, creeks or shallow freshwater that is 30 - 60 cm deep on heavy clay with low nutrients. Swamp herb is often associated with other wetland species.

Lifecycle

Swamp herb flowers from November to January. This herb is thought to be wind-pollinated and the seeds are probably dispersed by water. The swamp herb also spreads asexually (without the seeds), with tufts of leaves growing along the fine roots.

Conservation

Status: Swamp herb is listed as vulnerable in Queensland under the *Nature Conservation (Wildlife) Regulation 2006.*

Threats: Threats to the swamp herb include loss and fragmentation of suitable habitat, changes in hydrology and water quality, and weed invasion.

Recommendations: To reduce the threats to the swamp herb their habitat should be protected from further fragmentation and clearing, water flows and quality should be maintained and weeds should be managed.

Distribution

The swamp herb is restricted to coastal NSW and extends into southern Queensland.

Note: This species is thought to occur within Moreton Bay region; however limited to no distribution records are available. Records are known immediately adjacent to Moreton Bay region. Council welcomes additional information on the whereabouts of this species.

References: New South Wales Department of Environment and Conservation 2011. Maundia triglochinoides profile. http://www.threatened-species.environment.nsw.gov.au/tsprofile/profile.aspx?id=10511. Accessed 15 April 2011. Photo supplied by Glenn Leiper.

Priority Number: 88

Pouched frog

Assa darlingtoni

Description

Defining feature: The most distinctive feature of the pouched frog is found on the males who have twin pouches on each side of their bodies where the tadpoles are carried after hatching from eggs.

Physical description: The pouched frog ranges from grey to red-brown in colour on the back, and some individuals also have inverted V-shaped dark bars that start between the eyes or midway down the back. There is often a dark broken streak that runs from the nostril through the eye and down each side of the body. The side of the body is dark grey to black and the belly is cream with brown mottling. The fingers and toes are unwebbed but all are slightly swollen at the tip. The pouched frog can grow up to 30 mm. Male pouched frogs call with a series of rapidly repeated 'eh' sounds usually between six to ten notes, and most actively around dawn and dusk. Tadpoles are very small and dark brown in colour.

Habitat

The pouched frog lives in Antarctic beech forests, wet eucalypt forest and rainforests, in mountainous areas mostly above 800 m altitude. The frogs are usually found in damp leaf litter or under rocks and logs.

Feeding

The pouched frog feeds on a variety of insects.

Breeding

Season: Jelly masses are laid in late summer and contain about ten eggs.

Pouched frogs do not need water to breed. The female lays her eggs on the ground and both males and females guard them. When the tadpoles hatch, the male climbs amongst the eggs and coats himself in the jelly. This allows the tadpoles to slide over the male's body and wriggle into the skin pouches along his sides. The tadpoles leave the pouches when they are fully-developed frogs.

Conservation

Status: The pouched frog is listed as near threatened in Queensland under the *Nature Conservation (Wildlife) Regulation 2006.*

Threats: In the past, much of the pouched frog's habitat has been cleared or logged for timber resources.

Recommendations: Preventing disturbance to known populations, should help to alleviate the threats to the pouched frog. Suitable habitat should be protected from clearing and timber harvesting.

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

Distribution

The pouched frog has a scattered distribution from the Conondale and Blackall Ranges in south-eastern Queensland.

References: Frogs Australia Network. 2005. Australian Frog Database - Assa darlingtoni. http://www.frogsaustralia.net.au/frogs/display.cfm?frog_id=3. Accessed 14 April 2011. New South Wales Department of Environment and Conservation 2011. Pouvhed Frog profile. http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10070. Accessed 14 April 2011. Sopory A, Hero J-M. 2008. Amphibiaweb - Assa darlingtoni. http://amphibiaweb.org/cgi-bin/amphib_query?query_src=aw_lists_genera_&table=amphib&where-genus=Assa&where-species=darlingtoni. Accessed 14 April 2011. Map distribution data supplied by Moreton Bay Regional Council and WildNet (DERM). Map produced by Golder Associates ©. Photo supplied by the Moreton Bay Regional Council.

Priority Number: 89

Square-tailed kite

Lophoictinia isura

Description

Defining feature: The tail of the square-tailed kite is 23 - 25 cm long and nearly square shaped with four narrow black bars and a broad black band at the end.

Physical description: Adult square-tailed kites range from 50 cm to 56 cm in height and have a wingspan of 1.3 m. Adult birds have a reddish-brown appearance, a white face with thick black streaks on the head and finer streaks elsewhere. The back and upper wing feathers are dark sepia to reddish brown-black, the under body is predominantly reddish-brown with black streaks. Underwings have a reddish-brown colour and a light patch at the base of long flight feathers. The eye and the beak are yellow, as are the feet which have black talons. Juvenile birds have a stronger reddish-brown colouring and lack the white face and black streaking. The beaks of juveniles are a flesh colour, and the feet are pale yellow or white.

Habitat

The square-tailed kite prefers open eucalypt forest and woodlands with mature trees.

Feeding

The square-tailed kite is a specialist hunter of perching birds, especially honeyeaters and insects in the tree canopy, picking most prey items from the outer foliage by skimming and circling just above or below the tree tops. The kite also feeds on reptiles, bird eggs and occasionally poultry, but not carrion (carcasses of dead animals).

Breeding

Season: The square-tailed kite breeds once a year in pairs. The breeding season extends from August to December with egg laying occurring mostly from September to November.

The nests of square-tailed kite are typically located along, or near, watercourses and consist of large structures positioned 12 - 24 m high in branches of tall trees, in horizontal forks and over tree canopies. Nests are large stick structures that span about 1 m across and are 60 cm deep. Two eggs (but sometimes three eggs) are laid and incubated for up to 42 days. Females mostly sit on the nest while males do most of the hunting. The nestling period is a further nine weeks after hatching. The bond between pairs is probably for life, however outside of the breeding season the square-tailed kite is typically observed as a solitary individual.

Conservation

Status: The square-tailed kite is listed as near threatened in Queensland under the *Nature Conservation (Wildlife) Regulation 2006.*

Threats: Threats to the square-tailed kite include loss of habitat through clearing of forests, including intensive logging, burning, cultivation and grazing. Illegal shooting or collection of eggs and inappropriate fire regimes that reduce nesting and feeding resources are also threats to their population.

Recommendations: Protection and maintenance of nesting habitat is recommended for the square-tailed kite. Alteration of prescribed burning and grazing regimes would also benefit this species.

References: New South Wales National Parks and Wildlife Service 1999. Square-tailed Kite Threatened Species Information Sheet. http://www.environment.nsw.gov.au/resources/nature/tsprofileSquaretailedKite.pdf. Accessed 12 April 2011. South West Integrated Flora and Fauna. 2007. Square-tailed Kite. http://bird.net.au/bird/index.php?title=Square-tailed_Kite. Accessed 12 April 2010. Bird J, Butchart S. 2009. Lophoictinia isura. International Union for Conservation of Nature (IUCN) Red List of Threatened Species. Version 2010.4. http://www.iucnredlist.org/apps/redlist/details/144314/0. Accessed 12 April 2011. Map distribution data supplied by Moreton Bay Regional Council and WildNet (DERM). Map produced by Golder Associates ©. Photo supplied by Dean Ingwersen Birds Australia.

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

Distribution

The square-tailed kite is sparsely distributed throughout the Australian mainland, primarily within 250 km of the coast but is generally absent from treeless inland areas and from dense forests. This species is distributed throughout the Moreton Bay region, but are predominantly in south-east areas.

Priority Number: 90

Grey goshawk

Accipiter novaehollandiae

Description

Defining feature: The grey goshawk has two colour forms and the white form is the only pure white bird of prey in the world.

Physical description: The white form of the grey goshawk is pure white all over and is often known as the white goshawk. The grey form has a grey head and upperparts, with white underparts and grey on the chest. The rounded wings are grey above, white below and have darker wingtips. The tail is grey above and white below. Both forms have dark red eyes and yellow legs and feet. The grey goshawk can also be known as the variable goshawk as its colour and size can vary so greatly.

Habitat

The grey goshawk is found in most forest types, especially tall closed forests.

Feeding

Grey goshawks feed on birds, small mammals, reptiles and insects and capture prey by striking with their long, powerful clawed toes. The goshawk pursues its prey in flight, striking at speed, and even chases prey into dense undergrowth. The goshwak will also use ambush and surprise tactics to catch birds.

Breeding

Season: Grey goshawk nesting takes place in the spring months of August to November.

Grey goshawks form permanent pairs that defend a home territory year round. Both sexes help to construct a stick nest lined with leaves high in a tree fork, and often re-use the same nest for several years. The grey and white colour forms interbreed freely and very rarely interbreed with brown goshawks. The female does most of the incubation and the male takes her place when she needs to feed. The male catches most of the food for the young, which the female tears up for them to eat.

Conservation

Status: The grey goshawk is listed at near threatened in Queensland under the *Nature Conservation (Wildlife) Regulation 2006.*

Threats: The abundance and distribution range of the grey goshawk appears to be declining as a result of their habitat being extensively logged and cleared for agriculture and human habitation. The increased human presence is detrimental to nesting grey goshawks because they are sensitive to disturbance and may desert nests and young.

Recommendations: It would be beneficial to the conservation of the species to have an accurate estimate of the total breeding population of grey goshawks, and known nest sites should be identified and protected. Habitat areas within forests and reserves should be monitored and protected.

References: Birds in Backyards. 2011. Grey Goshawk. http://birdsinbackyards.net/species/Accipiter-novaehollandiae","http://birdsinbackyards.net/species/Accipiter-novaehollandiae. Accessed 11 April 2011. BirdLife International. 2011. Species factsheet: Accipiter novaehollandiae. http://www.birdlife.org/datazone/speciesfactsheet.php?id=3431. Accessed 11 April 2011. South West Integrated Flora and Fauna 2007. Grey Goshawk. http://www.birdlife.org/datazone/speciesfactsheet.php?id=3431","http://www.birdlife.org/datazone/speciesfactsheet.php?id=3431. Accessed 11 April 2010. Map distribution data supplied by Moreton Bay Regional Council and WildNet (DERM). Map produced by Golder Associates ©. Photo supplied by R Clarke.

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

Distribution

The grey goshawk is found in coastal areas in northern and eastern Australia. The white form is predominantly in the more open forests of north-western Australia and coastal Victoria and is the only form found in Tasmania. The grey form is more common in the thicker, sub-tropical forests of the east coast. This species is found throughout the Moreton Bay region including Bribie Island.

Priority Number: 91

Black-necked stork

Ephippiorhynchus asiaticus

Description

Defining feature: The black-necked stork is the only species of stork found in Australia.

Physical description: The black-necked stork stands approximately 1.3 m high with a wingspan of around 2 m. They have a black head with a green and purple sheen, while their body is white with contrasting black wings and a black tail. Their long legs are orange to red and very brightly coloured. Females have yellow eyes whereas males have dark-brown eyes. Juveniles are mostly brown with a mottled brown and cream under-body, brown legs and brown eyes.

Habitat

Black-necked storks inhabit freshwater wetlands, watercourses, swamps, farm dams, and sometimes extend into surrounding paddocks and woodlands. They prefer shallow permanent freshwater systems, but have been known to forage around the shoreline including estuaries, salt marshes, mangroves, sand flats and mudflats.

Feeding

Black-necked storks feed on a variety of prey from shallow, still water. The majority of prey is caught by the bird jabbing its bill into the ground and catching the prey between it, however sometimes it may catch prey by lunging forward or grabbing it from the air. Species such as eels make up the majority of their diet and are the only food seen to be delivered to nestlings. Lesser numbers of other fish, frogs, turtles, snakes and a variety of other small vertebrates and invertebrates (crabs and insects) make up the rest of their diet.

Breeding

Season: Black-necked storks breed in late spring and summer.

Black-necked storks usually bond as a pair, sometimes for several years or for life. Their nest is a large platform of sticks approximately 1 - 2 m across, which is usually made in a stand alone tree within or nearby to a wetland. Nests usually contain up to three chicks which are incubated and cared for by both parents.

Conservation

Status: The black-necked stork is listed as near threatened in Queensland under the *Nature Conservation (Wildlife) Regulation 2006.*

Threats: The black-necked stork is threatened mainly by overhead power lines and the loss of habitat and nesting sites due to land clearance and draining of wetlands for flood mitigation, agriculture and residential development. Pollution of waterways can also affect black-necked storks.

Recommendations: Reintroducing water flow to wetlands would help to provide suitable foraging habitat for black-necked storks as they require large amounts of prey from these areas.

References: New South Wales Department of Environment and Conservation 2011. Black-necked stork profile. http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10275. Accessed 5 April 2011. Birds in Backyards 2011. Black-necked stork. http://birdsinbackyards.net/species/Ephippiorhynchus-asiaticus. Accessed 5 April 2011. BirdLife International 2008. Ephippiorhynchus asiaticus. In: IUCN 2010. IUCN Red List of Threatened Species. Version 2010.4. www.iucnredlist.org. Accessed 7 April 2011. Map distribution data supplied by Moreton Bay Regional Council and WildNet (DERM). Map produced by Golder Associates ©. Photo supplied by The Queensland Museum.

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

Distribution

Black-necked storks are widespread in coastal regions and areas further inland in northern and eastern Australia. They are found throughout the Moreton Bay region, with higher concentrations seen in eastern areas.

Priority Number: 93

Red-browed treecreeper

Climacteris erythrops

Description

Defining feature: The red-browed treecreeper is a bird with striking rust-red streaks, or 'eyebrows', that extend across the face.

Physical description: The red-browed treecreeper reaches a length of up to 16 cm. The upper plumage of the male is a dull brown colour with a grey crown and neck and the distinguishing red facial streak. The chin is white and the abdominal region is grey and marked with broad dark brown and white stripes. The tail, legs and feet are grey. Females are similar in colouration to the males. The calls are fast, high and shrill, while the song is a warble.

Habitat

Red-browed treecreepers inhabit forests and woodlands, along watercourses and in gullies up to 1,500 m altitude. Population densities are highest in wet woody forests in the gullies of foothills and dry woody forests on ridges in mountainous areas.

Feeding

The red-browed treecreeper mainly eats insects and lives in territorial pairs or groups of 3 - 4 adults that breed co-operatively and find food together.

Breeding

Season: Mating and breeding of the red-browed treecreeper occurs from January to September.

Nests are usually built 4 - 5 m off the ground and made in cup-shaped tree hollows. Two eggs are laid and incubation lasts 18 days.

Conservation

Status: The red-browed treecreeper is listed as near threatened in Queensland under the *Nature Conservation (Wildlife) Regulation 2006.*

Threats: The red-browed treecreeper has disappeared from several forest edge habitats as a direct result of forest clearing and fragmentation. This species has also declined in some wet forest habitats, probably as a result of logging and the collapse of large old trees damaged by previous wildfires.

Recommendations: To reduce threats to the red-browed treecreeper, it is recommended that suitable forest habitats are retained. Increasing the size and connectivity of existing forests and planting trees around forest edge areas will help retain suitable habitat.

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

Distribution

The red-browed treecreeper is found in south-east Australia, where it occurs in south-east Queensland and in the east regions of New South Wales. This species in found in western areas of the Moreton Bay Region and on Bribie Island.

References: BirdLife International. 2011. Species factsheet: Climacteris erythrops. http://www.birdlife.org/datazone/speciesfactsheet.php?id=5157. Accessed 8 April 2011. Map distribution data supplied by Moreton Bay Regional Council and WildNet (DERM). Map produced by Golder Associates ©. Photo supplied by R Clarke.

Priority Number: 94

Sooty oystercatcher

Haematopus fuliginosus

Description

Defining feature: The sooty oystercatcher is a wading bird with entirely black plumage.

Physical description: The sooty oystercatcher is a large wading bird reaching 50 cm in length. This species has a bright orange-red bill, eye-ring and iris, and coral pink legs and feet. It is possible to tell the difference between male and female oystercatchers as the female has a longer, more slender bill. The call is a loud whistling sound before taking flight and a piercing call if an intruder approaches the nest.

Habitat

The sooty oystercatcher lives in coastal environments including rocky headlands, rocky shelves, exposed reefs with rock pools, beaches and muddy estuaries.

Feeding

The sooty oystercatcher forages on exposed rock or coral at low tide for food such as limpets and mussels.

Breeding

Season: The sooty oystercatcher breeds in spring and summer.

The sooty oystercatcher breeds almost exclusively on offshore islands, and occasionally on isolated mainland headlands and peninsulas. The nest is a shallow scrape on the ground, or small mounds of pebbles, shells or seaweed when nesting among the rocks.

Conservation

Status: The sooty oystercatcher is listed as near threatened in Queensland under the *Nature Conservation (Wildlife) Regulation 2006.*

Threats: Disturbance to coastal feeding, nesting and roosting areas is a major threat to the sooty oystercatcher. Additional threats to these birds includes the predation of eggs and chicks by foxes, dogs, cats, rats and raptors.

Recommendations: Recommendations for reducing the threats to the sooty oystercatcher include undertaking a predator control programme, managing estuaries and the surrounding landscape to ensure the natural hydrological regimes are maintained, protect known habitats and breeding sites, and installing community awareness signs at major nesting sites.

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

Distribution

Sooty oystercatchers are found around the entire Australian coast, including offshore islands. In the Moreton Bay region this species is predominantly found on the western side of Bribie Island and the adjacent mainland.

References: New South Wales Department of Environment and Conservation 2011. Sooty Oystercatcher profile. http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10385. Accessed 7 April 2011. Bird J, Butchart S. 2009. Haematopus fuliginosus. International Union for Conservation of Nature (IUCN) Red List of Threatened Species. Version 2010.4. http://www.iucnredlist.org/apps/redlist/details/144077/0. Accessed 7 April 2011. Map distribution data supplied by Moreton Bay Regional Council and WildNet (DERM). Map produced by Golder Associates ©. Photo supplied by The Queensland Museum.

Priority Number: 95

Black-chinned honeyeater

Melithreptus gularis

Description

Defining feature: The black-chinned honeyeater has a black cap, with a white crescent around the nape, and there is a diagnostic black 'chin' beneath the bill and extending down the white throat.

Physical description: The black-chinned honeyeater is the largest of the honeyeaters reaching 17 cm in length. There is a small crescent of blue skin above the eye. The back and wings are a dull olive-green and the tail is greyish-brown. The underparts are white with a greyish-buff tint on the breast. The bill is short, black and slightly down curved. The call is a ringing, bubbling trill, repeated several times.

Habitat

The black-chinned honeyeater occupies mostly upper levels of drier open forests or woodlands dominated by box and ironbark eucalypts. This honeyeater also inhabits open forests of smooth-barked gums, stringybarks, ironbarks and tea-trees. The birds are sociable and are usually seen in pairs and small groups of up to 12 birds.

Feeding

The feeding territories of the black-chinned honeyeater are large, making the birds locally nomadic. The birds move quickly from tree to tree, foraging along outer twigs and the undersides of branches and trunks, probing for insects. Nectar is taken from flowers and honeydew is gleaned from foliage.

Breeding

Season: The black-chinned honeyeater breeds from June to December.

Two or three eggs are laid by the black-chinned honeyeater which often breeds co-operatively with up to six adults helping females to feed the young. The nest is placed in the crown of a tree, in the uppermost branches and hidden by foliage. It is a compact, suspended, cup-shaped nest.

Conservation

Status: The black-chinned honeyeater is listed as near threatened in Queensland under the *Nature Conservation (Wildlife) Regulation 2006.*

Threats: Clearing of open forest and woodland habitats is the major threat to the black-chinned honeyeater. Other threats include poor regeneration of open forest and woodland habitats due to intense grazing.

Recommendations: To reduce threats to the black-chinned honeyeater, it is recommended that suitable woodland habitats are retained, particularly those with unimproved pasture and an intact native ground plant layer. Increasing the size and connectivity of existing forests and planting trees around woodland areas will help retain suitable habitat.

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

Distribution

The black-chinned honeyeater extends south from central Queensland, through New South Wales and Victoria, and into South Australia. This species is predominantly found in central areas of the Moreton Bay Region.

References: New South Wales Department of Environment and Conservation 2011. Black-chinned Honeyeater profile. http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10523. Accessed 7 April 2011. Bird J, Butchart S. 2009. Melithreptus gularis. International Union for Conservation of Nature (IUCN) Red List of Threatened Species. Version 2010.4. http://www.iucnredlist.org/apps/redlist/details/150899/0. Accessed 7 April 2011. Map distribution data supplied by Moreton Bay Regional Council and WildNet (DERM). Map produced by Golder Associates ©. Photo supplied by Dean Ingwersen Birds Australia.

Priority Number: 96

Turquoise parrot

Neophema pulchella

Description

Defining feature: The turquoise parrot is a highly distinctive bird with bright green upperparts and turquoise-blue shoulders, crown and face.

Physical description: The turquoise parrot is a brightly coloured bird with turquoise colouration on to the upperbody and green underparts. The wings have a large, two-toned blue shoulder patch, with a smaller brick red patch along the inner edge. The yellow abdomen may have an orange centre. The female lacks the deep red patch on the upper wing. Immature birds are similar to the adult female but duller in colouration.

Habitat

The turquoise parrot occurs in *Eucalyptus* woodlands and open forests with a ground cover of grasses and low understory of scrub. The species has also been recorded in savannah and riparian woodlands and farmland.

Feeding

The turquoise parrot feeds on the seeds of grasses, herbs and shrubs and requires a reliable supply of drinking water. Flowers, nectar, fruits, leaves and scale insects are also occasionally eaten.

Breeding

Season: The turquoise parrot breeds from August to January.

The nests of the turquoise parrot are typically less than two metres off the ground and may be located in the hollows of small trees, dead Eucalyptus or in holes or stumps, fence posts or even logs lying on the ground. These parrots lay up to six eggs and may raise a second brood through the summer months. Both parents feed the young which remain in the hollow for about four weeks after hatching.

Conservation

Status: The turquoise parrot is listed as near threatened in Queensland under the *Nature Conservation (Wildlife) Regulation 2006.*

Threats: The turquoise parrot faces loss of habitat through clearing, intensive logging, burning and grazing. Other threats to the parrots include predation and illegal trapping of birds and collection of eggs.

Recommendations: The habitat of the turquoise parrot could be protected and maintained to help conserve the population. Alteration of the prescribed burning and grazing regime would also benefit this species.

References: New South Wales National Parks and Wildlife Service 1999. Turquoise Parrot. Threatened Species Information Sheet. http://www.environment.nsw.gov.au/resources/nature/tsprofileTurquoiseParrot.pdf. Accessed 7 April 2011. Bird J, Butchart S. 2009. Neophema pulchella. International Union for Conservation of Nature (IUCN) Red List of Threatened Species. Version 2010.4. http://www.iucnredlist.org/apps/redlist/details/142520/0. Accessed 7 April 2011. New South Wales Department of Environment and Conservation 2011. Turquoise parrot profile. http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10555. Accessed 7 April 2011. Map distribution data supplied by Moreton Bay Regional Council and WildNet (DERM). Map produced by Golder Associates ©. Photo supplied by Dean Ingwersen Birds Australia

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

Distribution

The turquoise parrot is endemic to eastern Australia. Their range is patchy and extends from north-eastern Victoria through New South Wales to the granite belt of south-east Queensland. In the Moreton Bay region this species is predominantly found in central areas and on Bribie Island.

Priority Number: 97

Lewin's rail

Lewinia pectoralis pectoralis

Description

Defining feature: The lewin's rail is a bird that has three recognised subspecies in Australia. *Lewinia pectoralis pectoralis* is found only in eastern Australia.

Physical description: The Lewin's rail is a small to medium-sized bird that grows to between 20 and 27 cm in length. It has a wingspan ranging from 31 cm to 35 cm. The top of the head and back of the neck is a chestnut colour with black streaks. Upperparts are black with an olive edge on the feathers giving a mottled and striped appearance. The chin is light grey and the underside of the neck and chest is olive grey. The bird has a long, thin bill which is black towards the tip and a reddish tinge towards the base. The abdomen is barred black and white. The legs and feet are grey-brown.

Habitat

The Lewin's rail typically inhabits wetland areas with dense vegetation, including wetlands, farm dams, swamps, saline lakes and river flats where they forage around the waters edge in shallow water and close to cover for a variety of aquatic plants and invertebrates. Lewin's rail also uses artificial habitats with similar structural features.

Feeding

To avoid exposure, Lewin's rail spends most of its time in dense vegetation and eats a range of invertebrates and, occasionally, bird eggs and frogs.

Breeding

Season: Lewin's rail lays three to five eggs in spring or summer.

Lewin's rail creates saucer-shaped nests that are well-hidden with vegetation pulled over the top. Nests are located above the waterline and tunnels made in the vegetation for quick retreats.

Conservation

Status: The Lewin's rail is listed as near threatened in Queensland under the *Nature Conservation (Wildlife) Regulation 2006.*

Threats: Loss of habitat through drainage and river diversion is the primary threat to the Lewin's rail. Habitat degradation and predation also pose a threat. The extinction of the western subspecies serves as an example of what could possibly happen to other populations within Australia.

Recommendations: The population could benefit from regular monitoring at permanent swamps where Lewin's rail occurs and drainage of swamps should be strongly discouraged.

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

Distribution

Lewin's rail have a patchy distribution through near-coastal environments between Kangaroo Island, South Australia and Townsville, Queensland. This species is found throughout the Moreton Bay region.

References: Garnett ST, Crowley GM. 2000. Action Plan for Australian Birds 2000 – Taxon Summary, Lewin's Rail. http://www.environment.gov.au/biodiversity/threatened/publications/action/birds2000/pubs/lewins-rail-e.pdf. Accessed 7 April 2011. South West Integrated Flora and Fauna 2010. Lewin's Rail. http://bird.net.au/bird/index.php?title=Lewin's_Rail. Accessed 7 April 2011. Map distribution data supplied by Moreton Bay Regional Council and WildNet (DERM). Map produced by Golder Associates ©. Photo supplied by Chris Tzaros Birds Australia.

Priority Number: 98

Sooty owl

Tyto tenebricosa tenebricosa

Description

Defining feature: Sooty owls are black with very large, dark eyes set in a round face.

Physical description: The upper body of the sooty owl is black with finely spotted white on the head and larger, but sparser, white spots on the wings. The underparts vary from black to dark grey and are finely spotted with white. The belly is always paler than the breast. The tail is very short and the legs are feathered. The bill is horn coloured and feathered almost to the tip. Toes are dark grey and the large talons black. Females are usually slightly larger than males.

Habitat

The sooty owl prefers deep, wet gully forest dominated by eucalypts, and occurs in drier forest only when hunting. Sooty owls are strictly nocturnal and the owls hide during the daytime in crevices, hollow tree trunks, dense foliage of tall trees, and sometimes caves.

Feeding

Sooty owls are powerful hunters and a high proportion of their prey are tree-dwelling species such as gliders and ring-tailed possums.

Breeding

Season: The breeding season for sooty owls is variable. Most eggs are laid from January to June but there have been records of eggs laid during August or September.

The nests of sooty owls are typically in a large hollow in a living tree but there are a few records of the owls nesting in caves. One or two white eggs are laid and incubation takes around 42 days. The young are covered in grey down and are fledged in approximately three months.

Conservation

Status: The sooty owl is listed as near threatened in Queensland under the *Nature Conservation (Wildlife) Regulation 2006.*

Threats: The sooty owl population is suspected to be in decline owing to ongoing habitat destruction.

Recommendations: Threats to the sooty owl could be reduced by protecting the forest areas they inhabit.

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

Distribution

Sooty owls have a large range along the south-east coast of Australia from the Dandenong Ranges near Melbourne, to the Conondale Range north of Brisbane. Within the Moreton Bay region the owls are mostly found in areas along the south-west boundary. This species is also found on New Guinea.

References: BirdLife International 2009. Tyto tenebricosa. International Union for Conservation of Nature (IUCN) Red List of Threatened Species. Version 2010.4. http://www.birdlife.org/datazone/speciesfactsheet.php?id=32270. Accessed 6 April 2011. Lewis DP 2006. Greater Sooty Owl - Tyto tenebricosa. http://www.owlpages.com/owls.php?genus=Tyto&species=tenebricosa. Accessed 7 April 2011. Map distribution data supplied by Moreton Bay Regional Council and WildNet (DERM). Map produced by Golder Associates ©. Photo supplied by R Clarke.

Priority Number: 99

Cotton pygmy-goose

Nettapus coromandelianus

Description

Defining feature: The cotton pygmy-goose is a small surface feeding duck with a goose-like bill.

Physical description: The cotton pygmy-goose is a small bird 34-38cm. Males have a white head, neck and underparts, dark glossy green upperparts and a narrow dark breast band. Females are duskier and have a dark stripe through the eye and a white eyebrow.

Habitat

The cotton pygmy-goose is found in freshwater lakes, lagoons, swamps and dams, particularly those vegetated with waterlilies and other floating and submerged aquatic vegetation.

Feeding

The cotton pygmy-goose feeds predominantly on seeds and vegetable matter, especially water lillies.

Breeding

The cotton pygmy-goose uses standing dead trees with hollows close to water for roosting and breeding. The nesting season is from July - September, and 6-12 ivory white eggs are laid.

Conservation

Status: The cotton pygmy-goose is listed as near threatened in Queensland under the *Nature Conservation (Wildlife) Regulation 2006.*

Threats: Threats to the cotton pygmy-goose include clearing and draining of lakes and wetlands for agriculture and development, invasion of wetland habitat by introduced weeds, heavy grazing of wetland areas by domestic stock, removal of standing dead trees for firewood and use of herbicides, insecticides and other chemicals near wetlands.

Recommendations: The cotton pygmy-goose would benefit from protecting swamps from fire during burning off activities, protecting wetlands and lakes from draining or development, retaining standing dead trees near wetland areas, using alternatives to herbicides and insecticides near wetlands, protecting wetlands from heavy grazing and trampling by livestock, and controlling water weeds.

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

Distribution

The cotton pygmy-goose was once common from north Queensland to the Hunter River in New South Wales, however is now uncommon in Queensland. The species has been recorded in various locations scattered throughout the Moreton Bay Region.

References: NSW Department of Environment and Conservation (http://www.threatenedspecies.environment.nsw.gov.au), *Field Guide to the Birds of Australia* (Simpson & Day 2010). Photo supplied by Robert Inglis.

Priority Number: 100

Freckled duck

Stictonetta naevosa

Description

Defining feature: The freckled duck possesses dark brownish-black plumage that is freckled all over with white or buff.

Physical description: The freckled duck is a dark, brownish bird 51-56cm with a large head that is peaked at the rear, and a distinctive narrow, slightly up-turned bill. During the breeding season, the male's bill becomes crimson at the base. Females are paler, and have bolder freckles.

Habitat

The freckled duck inhabits a variety of wetland types, including vegetated swamps, large open lakes and their shores, creeks, farm dams, sewage ponds and floodwaters. During the day in non breeding periods they are found in both small and large groups in permanent open water bodies (fresh and saline), or resting on fallen trees and sand spits.

Feeding

Freckled ducks feed at wetland edges or in the shallow productive waters at dusk. The species uses several foraging techniques including bottom filtering, surface filtering and up-ending. They feed on algae, seeds of various aquatic grasses and sedges, small invertebrates, small fish and the vegetative parts of aquatic plants.

Breeding

The freckled duck breeds from June to December, with clutch size varying between 5 and 7. Nests are usually located at or near water level, and are made from finely woven twigs with a layer of down. Studies indicate that the female exclusively undertakes incubation for a period of 28 days, although the male is often seen on the nest guarding the eggs. The Murray-Darling Basin, Lake Eyre and south-western Queensland form the eastern breeding stronghold for this species.

Conservation

Status: The freckled duck is listed as near threatened in Queensland under the *Nature Conservation (Wildlife) Regulation 2006.*

Threats: Threats to the freckled duck include loss of habitat, hydrological changes and illegal hunting (as the birds concentrate in large groups this activity can potentially remove a large proportion of the population).

Recommendations: The freckled duck would benefit from protecting and maintaining known or potential habitat. Additionally, promoting the importance of the species and the effects of illegal hunting activities would also benefit this species.

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

Distribution

The freckled duck is found primarily in south-eastern and south-western Australia, occurring as a vagrant elsewhere. This species has been recorded at Rothwell in the Moreton Bay Region.

References: NSW Department of Environment and Conservation (http://www.threatenedspecies.environment.nsw.gov.au), *Field Guide to the Birds of Australia* (Simpson & Day 2010). Photo supplied by Dan Blunt.

Priority Number: 101

Golden-tipped bat

Kerivoula papuensis

Description

Defining feature: Golden-tipped bats have dark brown, curly fur with bright golden tips. The distinctively coloured fur extends along the wings, legs and tail.

Physical description: Golden-tipped bats have a short, pointed, over-hanging muzzle and pointy, funnel-shaped ears. Adults weigh 6 g and have a wingspan of 25 cm.

Habitat

Golden-tipped bats are found in rainforest and adjacent wet and dry woody forests up to 1,000 m altitude. The bats are also recorded in tall open forest, Casuarina-dominated forest and coastal tea-tree forests. Golden-tipped bats roost mainly in abandoned hanging bird nests, in tree hollows and dense foliage located in rainforest gullies with small streams.

Feeding

In Australia, the majority of the diet for the golden-tipped bat consists of web-weaving spiders.

Breeding

Season: The breeding activity of golden-tipped bats peaks from mid-spring to mid-autumn.

Conservation

Status: The golden-tipped bat is listed as near threatened in Queensland under the *Nature Conservation (Wildlife) Regulation 2006.*

Threats: Potential threats to the golden-tipped bat include habitat degradation and loss from clearing and fragmentation of forest, forest harvesting operations and forest fires. The bats are also potentially at risk from predation by domestic and feral cats.

Recommendations: Ecological research to determine the habitat requirements of golden-tipped bats (e.g., roost and nest selection) will help manage the impact of forestry practices.

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

Distribution

The golden-tipped bat is distributed along the east coast of Australia in scattered locations from Cape York Peninsula in Queensland to south of Eden in southern New South Wales. This species of bat is also found in New Guinea.

References: Schulz M, Clague C, Coles R. 2009. Recovery Outlines and Taxon Summaries - Golden-tipped Bat. http://www.environment.gov.au/biodiversity/threatened/publications/action/bats/23.html. Accessed 7 April 2011. Hutson T, Schlitter D, Csorba G, Hall L, Lunney D, Hamilton S 2008. Phoniscus papuensis. International Union for Conservation of Nature (IUCN) Red List of Threatened Species. Version 2010.4 http://www.iucnredlist.org/apps/redlist/details/10982/0. Accessed 7 April 2011. Schulz M 1999. Relative abundance and other aspects of the natural history of the rare golden-tipped bat, Kerivoula papuensis (Chiroptera: Vespertilionidae). Acta chiropterologica. 1(2): 165-178. http://www.refdoc.fr/Detailnotice?cpsidt=1540709&traduire=en. Accessed 7 April 2011. Map distribution data supplied by Moreton Bay Regional Council and WildNet (DERM). Map produced by Golder Associates ©. Photo supplied by Mark G Sanders EcoSmart Ecology Pty Ltd.

Priority Number: 102

Elf skink

Eroticoscincus graciloides

Description

Defining feature: The elf skink is a small, brown skink that occupies rainforest and wet sclerophyll forests.

Physical description: The elf skink is coloured a rich brown above with each scale striped and edged with dark brown. The sides of the body are light with each individual scale finely peppered with dark brown, while the belly is white with a few scales finely dotted in dark brown. A narrow, dark brown stripe runs from just in front of the hind limb to the basal half of the tail. The lips are barred with dark brown.

Habitat

The elf skink lives under logs, stones and leaf litter in rainforest and wet sclerophyll forests.

Feeding

Skinks are generally carnivorous and, based on habitat descriptions for the elf skink, it is likely that their diet consists predominantly of invertebrates.

Breeding

The elf skink is oviparous meaning that it reproduces by laying eggs.

Conservation

Status: The elf skink is listed as near threatened in Queensland under the *Nature Conservation (Wildlife) Regulation 2006.*

Threats: General threats to reptiles (including the elf skink) involve habitat loss, degradation and modification, feral predators and disease.

Recommendations: Threats to reptile species such as the elf skink can be reduced by protecting existing habitat, restoring degraded habitat and controlling plant and animal pests.

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

Distribution

The elf skink is found in the south-eastern region of Queensland. Records within the Moreton Bay region are scattered from the north to the south.

References: Cogger HG. 2000. Reptiles and Amphibians of Australia, Sixth Edition. Reed New Holland, New South Wales. Map distribution data supplied by Moreton Bay Regional Council and WildNet (DERM). Map produced by Golder Associates ©. Photo supplied by Mark G Sanders EcoSmart Ecology Pty Ltd.

Priority Number: 103

Rose's shade-skink

orange-tailed shade-skink

Saproscincus rosei

Description

Defining feature: Rose's shade-skink is named after Tony Rose of the New South Wales National Parks and Wildlife Service, Sydney, in recognition of his contributions to reptile specimens at the Australian Museum.

Physical description: Rose's shade-skink has a dark narrow line on the underside of its tail. Females have a reddish stripe on the top of the tail and a pale belly. Males have a pale yellow belly. This skink measures approximately 6.5 cm, excluding the tail.

Habitat

Rose's shade-skink lives amongst decaying leaf litter in rainforest and wet sclerophyll forests.

Feeding

Skinks are generally carnivorous and, based on habitat descriptions for the Rose's shade-skink, it is likely that their diet consists predominantly of invertebrates.

Breeding

Rose's shade-skink is oviparous meaning that it reproduces by laying eggs. These skinks typically lay two eggs at a time.

Conservation

Status: Rose's shade-skink is listed as near threatened in Queensland under the *Nature Conservation (Wildlife) Regulation 2006.*

Threats: General threats to reptiles (including Rose's shade-skink) involve habitat loss, degradation and modification, feral predators and disease.

Recommendations: Threats to reptile species such as Rose's shade-skink can be reduced by protecting existing habitat, restoring degraded habitat and controlling plant and animal pests.

Distribution

Rose's shade-skink is found from Gympie in Queensland to the Barrington Tops region in New South Wales.

Note: This species is thought to occur within Moreton Bay region; however limited to no distribution records are available. Records are known immediately adjacent to Moreton Bay region. Council welcomes additional information on the whereabouts of this species.

References: The Australian Reptile Online Database 2011. Saproscincus rosei, in the Australian Reptile Online Database. http://www.reptilesdownunder.com/arod/reptilia/Squamata/Scincidae/Saproscincus/rosei. Accessed 27 April 2011. Cogger HG. 2000. Reptiles and Amphibians of Australia, Sixth Edition. Reed New Holland, New South Wales. Photo supplied by Mark G Sanders EcoSmart Ecology Pty Ltd.

Priority Number: 104

Rusty vine

Marsdenia hemiptera

Description

Defining feature: Rusty vine is a climbing plant with stems that are covered in soft rust-coloured hairs.

Physical description: Rusty vine has twining stems that grow up to four meters high. The young shoots and leaf buds are also furry. Leaves are oval shaped and 7 - 18 cm long and 4 - 10 cm wide. The leaves are soft and thin, and have soft rust-coloured hairs on the underside. Rusty vine flowers are deep purple and 20 - 25 mm in diameter. Fruit are 10 cm long and egg-shaped.

Habitat

Rusty vine grows in rainforest that is close to the sea (within approximately 2 km), and in palm-dominated rainforest swamps or sandstone gorges.

Lifecycle

Rusty vine flowers in the summer.

Conservation

Status: The rusty vine is listed as near threatened in Queensland under the *Nature Conservation (Wildlife) Regulation 2006.*

Threats: A major threat to the rusty vine is habitat loss resulting from invasive weeds and disturbance, and through clearing for agriculture and development.

Recommendations: Rusty vine can be protected by controlling the spread of weeds and by protecting remaining habitat from clearing, development and grazing.

Distribution

Rusty vine occurs in Western Australia, Northern Territory, Cape York Peninsula, north-east Queensland and southwards to north-eastern New South Wales.

Note: This species is thought to occur within Moreton Bay region; however limited to no distribution records are available. Records are known immediately adjacent to Moreton Bay region. Council welcomes additional information on the whereabouts of this species.

References: Harden GJ, Williams JB. 1995. New South Wales Flora Online - Marsdenia hemiptera. http://plantnet.rbgsyd.nsw.gov.au/cgi-bin/NSWfl.pl?page=nswfl&lvl=sp&name=Marsdenia~hemiptera. Accessed 6 April 2011. Australian Tropical Rainforest Plants. 2011. Marsdenia hemiptera Species Information Sheet. http://keys.trin.org.au:8080/key-server/data/0e0f0504-0103-430d-8004-060d07080d04/media/Html/taxon/Marsdenia_hemiptera.htm. Accessed 6 April 2011. Photo supplied by Glenn Leiper.

Priority Number: 105

Rainforest acomis

Acomis acoma

Description

Defining feature: Rainforest acomis is a herb that has a distinctive woody, branching base.

Physical description: Rainforest acomis is a herb growing up to 1 m high. The leaves are narrow and have notched edges. Leaves are 25 - 45 mm long and 8 - 15 mm wide. The lower surface is woolly and the upper surface less densely so. Rainforest acomis flower heads are 6 - 10 mm in diameter. Multiple small yellow flowers approximately 4 mm long make up this flower head. Fruit are oval or egg-shaped, 2.5 mm long, and are dark brown to black.

Habitat

Rainforest acomis grows on forest margins and on roadsides.

Lifecycle

Rainforest acomis flowers from summer to autumn.

Conservation

Status: The rainforest acomis is listed as near threatened in Queensland under the *Nature Conservation (Wildlife) Regulation 2006.*

Threats: A major threat to the rainforest acomis is habitat loss resulting from invasive weeds and disturbance, and through clearing for agriculture and development.

Recommendations: The rainforest acomis can be protected by controlling the spread of weeds and by protecting remaining habitat from clearing, development and grazing.

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

Distribution

Rainforest acomis habitat occurs from northern New South Wales to Queensland. This species has been recorded at Mount Nebo in the Moreton Bay Region.

References: Brown EA. 1992. New South Wales Flora Online - Acomis acoma. http://plantnet.rbgsyd.nsw.gov.au/cgi-bin/NSWfl.pl?page=nswfl&lvl=sp&name=Acomis~acoma. Accessed 6 April 2011. Photo supplied by Glenn Leiper.

Priority Number: 106

Large-leaved wonga vine

Pandorea baileyana

Description

Defining feature: The large-leaved wonga vine is a woody climbing plant.

Physical description: The leaves of the large-leaved wonga vine are positioned opposite one another on the stalk, and there are 7 - 9 leaves on each stalk. These leaves are oval-shaped and are 5 - 14 cm long and 2 - 5 cm wide. The base of each leaf is round or slightly tapering and the surface is mostly smooth but with the main veins raised and obvious. Large-leaved wonga vine has flower clusters that are 10 - 30 cm long. The flowers are 1 - 2 cm long, are sparsely hairy, and are cream with a pink throat. The flower tube is curved and has a diameter of 2 - 4 mm.

Habitat

The large-leaved wonga vine grows in subtropical and warm-temperate rainforests.

Lifecycle

Large-leaved wonga vine flowers from September to March.

Conservation

Status: The large-leaved wonga vine is listed as near threatened in Queensland under the *Nature Conservation (Wildlife) Regulation 2006.*

Threats: A major threat to the large-leaved wonga vine is habitat loss resulting from invasive weeds and disturbance, and through clearing for agriculture and development.

Recommendations: The large-leaved wonga vine can be protected by controlling the spread of weeds and by protecting remaining habitat from clearing, development and grazing.

Distribution

Large-leaved wonga vine is found on the northern coast of New South Wales and in Moreton Bay, Queensland.

Note: This species is thought to occur within Moreton Bay region; however limited to no distribution records are available. Records are known immediately adjacent to Moreton Bay region. Council welcomes additional information on the whereabouts of this species.

References: Quirico AL. 1992. New South Wales Flora Online - Pandorea baileyana. http://plantnet.rbgsyd.nsw.gov.au/cgi-bin/NSWfl.pl?page=nswfl&lvl=sp&name=Pandorea~baileyana. Accessed 6 April 2011. Photo supplied by Glenn Leiper.

Priority Number: 107

Fraser Island creeper

Tecomanthe hillii

Description

Defining feature: Fraser Island creeper is a climbing plant that has clusters of deep pink flowers, and is commonly grown as a decorative plant.

Physical description: Fraser Island creeper has glossy leaves. The flowers form clusters of trumpet-shaped waxy, pink flowers with pale pinkish-cream throats.

Habitat

Fraser Island creeper is found along stream banks.

Lifecycle

The Fraser Island creeper flowers from late winter through spring.

Conservation

Status: The Fraser Island creeper is listed as near threatened in Queensland under the *Nature Conservation (Wildlife) Regulation 2006.*

Threats: A major threat to the Fraser Island creeper is habitat loss resulting from invasive weeds and disturbance, and through clearing for agriculture and development.

Recommendations: The Fraser Island creeper can be protected by controlling the spread of weeds and by protecting remaining habitat from clearing, development and grazing.

Distribution

The Fraser Island creeper is confined to eastern Queensland, specifically in Moreton and Wide Bays.

Note: This species is thought to occur within Moreton Bay region; however limited to no distribution records are available. Records are known immediately adjacent to Moreton Bay region. Council welcomes additional information on the whereabouts of this species.

References: Bostock PD, Holland AE (eds). 2010. Census of the Queensland Flora 2010. Queensland Herbarium, Department of Environment and Resource Management, Brisbane. http://www.derm.qld.gov.au/wildlife-ecosystems/plants/pdf/qld-flora-census.pdf. Accessed 6 April 2011. Cooloola Coastcare un dated. Tecomanthe hillii - Fraser Island Creeper. Cooloola Coastcare. http://www.cooloolacoastcare.org.au/html/species_pages/new_tecomanthe_hillii.html#. Accessed 21 April 2011. Photo supplied by Glenn Leiper.

Priority Number: 108

Corky cucumber

Nothoalsomitra suberosa

Description

Defining feature: Corky cucumber is a slender tendril climbing vine that has distinctive corky scales at the base of the older stems.

Physical description: Corky cucumber is a climbing vine reaching 3 m. The leaves are divided into three leaflets and are egg-shaped but pointed at the ends. Leaves are 3 - 10 cm long and 2 - 4 cm wide. These leaves are soft with very shallow, toothed edges and are glossy green. Corky cucumber flowers are creamy-white to yellow and have five broadly-pointed or rounded lobes that are 1 - 2 cm across. The leaves are arranged in clusters of four to six. Fruits grow up to 12 cm long and are green, fleshy and round with mildly aromatic flesh.

Habitat

Corky cucumber occurs in subtropical and coastal rainforest, and coastal regions.

Lifecycle

Corky cucumber flowers in spring.

Conservation

Status: Corky cucumber is listed as near threatened in Queensland under the *Nature Conservation (Wildlife) Regulation 2006.*

Threats: A major threat to the corky cucumber is habitat loss resulting from invasive weeds and disturbance, and through clearing for agriculture and development.

Recommendations: The corky cucumber can be protected by controlling the spread of weeds and by protecting remaining habitat from clearing, development and grazing.

Legend:

- Known distribution based on species records
- Moreton Bay Regional Council boundary

Distribution

Corky cucumber occurs in south-east Queensland. It is restricted to forests in the D'Aguilar Range, Blackall Range and Conondale ranges north of Brisbane. The species has been recorded at Mount Nebo in the Moreton Bay Region.

References: Brisbane Rainforest Action and Information Network. 2007. Nothoalsomitra suberosa (CUCURBITACEAE); Corky Cucumber. http://www.brisrain.webcentral.com.au/01_cms/details_pop.asp?ID=444. Accessed 6 April 2011. Photo supplied by Glenn Leiper.

Priority Number: 109

Giant ironwood

Choricarpia subargentea

Description

Defining feature: Giant ironwood is a tree that has smooth bark with blotches of pink-mauve, orange-green and copper-colour. When the leaves are crushed they have a strong eucalyptus-like scent.

Physical description: Giant ironwood grows up to 30 m tall. The leaves are shiny dark green on top and silvery underneath. Leaves are paired, around 4 - 8 cm long and tapered to a point at the tips. Giant ironwood has flowers that are white and form as dense round heads that are followed by small dry capsules.

Habitat

Giant ironwood forms dense thickets as regrowth in dry rainforests.

Lifecycle

Giant ironwood flowers in August to October.

Conservation

Status: Giant ironwood is listed as near threatened in Queensland under the *Nature Conservation (Wildlife) Regulation 2006.*

Threats: Threats to giant ironwood include habitat degradation and loss resulting from invasive weeds and disturbance, and through clearing for agriculture and development. Giant ironwood is at risk of local extinction because populations are small and easily destroyed by grazing of domestic stock and fire.

Recommendations: Giant ironwood can be protected by controlling fires and maintaining fire-breaks, controlling the spread of weeds and by protecting remaining habitat from clearing, development and grazing.

Distribution

Giant ironwood is found in Queensland from Boonah to Imbil.

Note: This species is thought to occur within Moreton Bay region; however limited to no distribution records are available. Records are known immediately adjacent to Moreton Bay region. Council welcomes additional information on the whereabouts of this species.

References: New South Wales Department of Environment and Conservation. 2005. Giant ironwood profile. http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10166. Accessed 6 April 2011. Wilson G 1991. New South Wales Flora Online - Choricarpia subargentea. http://plantnet.rbgsyd.nsw.gov.au/cgi-bin/NSWfl.pl?page=nswfl&lvl=sp&name=Choricarpia~subargentea. Accessed 6 April 2011. Photo supplied by Glenn Leiper.

Priority Number: 111

Hairy hazelwood

Symplocos harroldii

Description

Defining feature: Hairy hazelwood is a shrub that has long hairs covering its twigs when young.

Physical description: Hairy hazelwood is a tall shrub or small tree that grows up to 6 m. The leaves alternate on the stem and are simple and finely toothed. These leaves are egg-shaped but narrow and grow to 10 cm long and 3.5 cm wide. The leaf base is wedge-shaped. The flowers of hairy hazelwood form 2 cm long spikes. Fruits are red, narrow egg-shaped berries that grow to 10 mm by 7 mm.

Habitat

Hairy hazelwood is found in wet eucalypt forest and rainforests.

Lifecycle

Hairy hazelwood flowers in spring.

Conservation

Status: Hairy hazelwood is listed as near threatened in Queensland under the *Nature Conservation (Wildlife) Regulation 2006.*

Threats: A major threat to hairy hazelwood is habitat loss resulting from invasive weeds and disturbance, and through clearing for agriculture and development.

Recommendations: Hairy hazelwood can be protected by controlling the spread of weeds and protecting remaining habitat from clearing, development and grazing.

Distribution

In Queensland, hairy hazelwood is found north of Beenleigh and in the Enoggera catchment.

Note: This species is thought to occur within Moreton Bay region; however limited to no distribution records are available. Records are known immediately adjacent to Moreton Bay region. Council welcomes additional information on the whereabouts of this species.

References: Brisbane Rainforest Action and Information Network. 2007. Symplocos harroldii (SYMPLOCACEAE). http://www.brisrain.web-central.com.au/01_cms/details_pop.asp?ID=206. Accessed 6 April 2011. Noosa's Native Plants 2011. Symplocos harroldii. Plant Details. http://www.noosanativeplants.com.au/plants/527/symplocos-harroldii. Accessed 21 April 2011. Photo supplied by Glenn Leiper.

Priority Number: 112

Water-shield

Brasenia schreberi

Description

Defining feature: Water-shield is an aquatic herb that has large, round, floating leaves with dark red flowers on semi-erect stalks.

Physical description: The stalks of water-shield grow up to 2 m long depending on the water depth and are attached beneath the leaf, in the center. Leaves are hairless and often red underneath. They are circular or egg-shaped and grow up to 9 cm long and 6 cm wide. The undersides of the leaves and the stalks are covered in a clear sticky substance. The dark red or red-brown flowers are about 25 mm wide. The flowers have 3 - 4 petals which are lance-shaped. The stamens (pollen-producing reproductive organs of the flower) are up to 13 mm long and there can be from 12 to 37 individual stamens in each flower.

Habitat

Water-shield is widespread but rarely common, and is found in shallow freshwater lagoons or backwaters.

Lifecycle

Water-shield flowers from October to February in the southern hemisphere and lives for more than two years.

Conservation

Status: Water-shield is listed as near threatened in Queensland under the *Nature Conservation (Wildlife) Regulation 2006.*

Threats: A major threat to the water-shield is habitat loss resulting from invasive weeds and disturbance.

Recommendations: The water-shield can be protected by controlling the spread of water weeds.

Distribution

Water-shield is native to the United States, eastern Asia, Africa, and North and Central America.

Note: This species is thought to occur within Moreton Bay region; however limited to no distribution records are available. Records are known immediately adjacent to Moreton Bay region. Council welcomes additional information on the whereabouts of this species.

References: Jacobs SWL. 1990. New South Wales Flora Online - Brasenia schreberi. http://plantnet.rbgsyd.nsw.gov.au/cgi-bin/NSWfl.pl?page=nswfl&lvl=sp&name=Brasenia~schreberi. Accessed 6 April 2011.Germplasm Resources Information Network. 2011. Brasenia schreberi. http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?400190. Accessed 3 April 2011.Viridans Biological Databases. 2011. Brasenia schreberi - Water Shield. http://www.viridans.com/jamp/ptmgrid01pdf.php?specnum=0487&enc=zluchbetgpdqxvhaqg&mdhms=1267713091. Accessed 6 April 2011. Photo supplied by Glenn Leiper.

Priority Number: 113

Tangle orchid

Papillilabium beckleri

Description

Defining feature: Tangle orchid is an epiphyte which is a plant that grows on another plant. Its leaves are green and often have purple spots.

Physical description: Tangle orchid has two to six long pointed leaves that are 12 - 50 mm long and 2 - 5 mm wide. Tangle orchid plants grow up to eight flowers which are 7 mm tall. A tangle orchid can easily be identified by the papillae (a thickened lumpy area) covering most of the lip of the flower.

Habitat

Tangle orchids grow in the rainforest, especially along creeks, on the outer twigs of trees.

Lifecycle

The tangle orchid flowers between September and November.

Conservation

Status: Tangle orchids are listed as near threatened in Queensland under the *Nature Conservation (Wildlife) Regulation 2006.*

Threats: A major threat to the tangle orchid is habitat loss resulting from invasive weeds and disturbance, and through clearing for agriculture and development.

Recommendations: The tangle orchid can be protected by controlling the spread of weeds and by protecting remaining habitat from clearing, development and grazing.

Distribution

Tangle orchids are found in eastern New South Wales and south-eastern Queensland on the coast and coastal ranges, from sea level to 600 m altitude.

Note: This species is thought to occur within Moreton Bay region; however limited to no distribution records are available. Records are known immediately adjacent to Moreton Bay region. Council welcomes additional information on the whereabouts of this species.

References: Weston PH. 1993. New South Wales Flora Online - Papillilabium beckleri. http://plantnet.rbgsyd.nsw.gov.au/cgi-bin/NSWfl.pl?page=nswfl&lvl=sp&name=Papillilabium~beckleri. Accessed 6 April 2011. Photo supplied by Jon Cara ANOS(Qld) - Kabi Group

Priority Number: 114

Grease nut

Hernandia bivalvis

Description

Defining feature: The grease nut tree produces spectacular orange bracts (modified leaves) which enclose seeds.

Physical description: The grease nut is a small tree 6-12m tall with cream flowers appearing in clusters. This species has a straight trunk, greyish brown bark and a dense canopy of shiny bright green leaves. Fruit is orange fleshy bracts which overlap, enclosing an ovoid nut.

Habitat

The grease nut tree grows in dry rainforest. In its natural habitat it grows in semi-shade, sometimes reaching up through the canopy.

Lifecycle

The grease nut tree flowers in late October and early November. Seeds ripen from February to March and appear to retain their viability for quite a long time – it is possible that high oil content in seeds make them unpalatable for animals.

Conservation

Status: The grease nut tree is listed as near threatened in Queensland under the *Nature Conservation (Wildlife) Regulation 2006.*

Threats: The main threat to the grease nut tree is loss of habitat. This species is restricted to south-east Queensland. Some locations where it was once recorded are now cleared and are suburbs of Brisbane.

Recommendations: Parcels of land containing identified specimens of this species could be protected through voluntary conservation agreements/nature refuges. Identified specimens should be protected from innapropriate fire regimes and maintenance schedules. For example, recruitment should be monitored in close proximity to identified specimens before mowing or slashing.

Distribution

The grease nut is an uncommon species restricted to a few patches of remnant rainforest around Brisbane. Recent sightings have been at Fernvale, Mt Crosby and Mt Pleasant.

Note: This species is thought to occur within Moreton Bay region; however limited to no distribution records are available. Records are known immediately adjacent to Moreton Bay region. Council welcomes additional information on the whereabouts of this species.

References: Brisbane Rainforest Action and Information Network (www.brisrain.webcentral.com.au), *Hernandia bivalvis* (Jan Sked) - The Westerner 24/09/2008. Photo supplied by Stephanie Haslam.

Priority Number: 115

Wading birds

Description

Defining feature: Wading birds are an integral part of Moreton Bay's wetland ecosystems, with some 40,000 birds migrating annually to the bay.

Physical description: The wading birds found in Moreton Bay vary in size from 25 g to up to about 1,250 g. Many species often have distinctive bills and long legs which enable them to wade through shallow water and find food in the soft mudflats. Wading birds comprise about 10% of Australia's bird species. There are 15 resident wading species and 42 migrant wading species in Australia.

Habitat

Wading and shorebirds typically live within shallow wetlands with mudflats or beaches and water less than 10 cm deep, surrounded by low, sparse vegetation for feeding.

Feeding

Many wading birds come to Australia for around six months of the year to feed before returning to their breeding grounds in the northern hemisphere. They feed in mudflats around saltwater bays and estuaries when the tide is low. Wading and shorebird species consume a range of food depending on their feeding methods. Their diet can include small insects, worms and other small invertebrates.

Breeding

Season: Migratory waders leave Australia in the autumn to return to their breeding grounds in the northern hemisphere, after which they return to Australia from September to April. Resident wading birds breed between September and March.

Wading birds that are resident in Australia create small, simple nests just above the high-tide line of beaches and rocky shorelines.

Conservation

Status: The majority of wading bird species within Moreton Bay are listed as 'migratory' or 'marine' species under the *Environmental Protection and Biodiversity Conservation Act 1999*. In Queensland, one species is listed as vulnerable (beach stone-curlew *Esacus magnirostris*), and three species are listed as near threatened (Australian painted snipe *Rostratula benghalensis*,sooty oystercatcher *Haematopus fuliginosus*, and eastern curlew *Numenius madagascariensis*) under the *Nature Conservation Act 1992*.

Threats: There are multiple threats to waders both in Australia and at locations on their route of migration. They are threatened by habitat loss through widespread coastal reclamation and the draining of natural wetlands for development. Remaining wetlands are often at threat from pollution.

Recommendations: Both resident and migratory wading bird species require places to roost and feed that are safe from predators and resident species also need safe locations to nest. Wading bird species benefit from international protection as parts of Moreton Bay are designated as a Ramsar site under the Convention on Wetlands of International Importance (the Ramsar Convention) which aims to conserve and sustainably manage wetlands.

Distribution

Around two million waders migrate to Australia each year, with more than 40,000 birds arriving in Moreton Bay over spring and summer. These birds come from northern China, Mongolia, Japan, Alaska and Siberia. An additional 3,500 wading birds permanently reside in Moreton Bay.

References: The State of Queensland Department of Environment and Resource Management 2005. Shorebird Management Strategy Moreton Bay. http://www.derm.qld.gov.au/register/p01627aa.pdf. Accessed 8 June 2011. Birds Queensland 2010. Waders. Queensland Ornithological Society Inc. http://birdsqueensland.org.au/shore_birds_waders.php. Accessed 8 June 2011. Photo supplied by Moreton Bay Regional Council.

Priority Number: 116

Australian river mussel

Cucumerunio novaehollandiae

Description

Defining feature: The Australian river mussel is the largest freshwater mussel in Australia, with mature animals over 200 mm long. Within the family Hyriidae (freshwater mussels) the Australian river mussel has the most elongated shape (all other species are roundish) and shows distinctive nodules on the posterior surface of the shell (image right).

Physical description: The Australian river mussel is a large and elongated mussel, and posseses a brown-black shell when alive (image shows a dead shell with its dark skin mostly abraded, exposing an iridescent layer of mother-of-pearl).

Habitat

The Australian river mussel lives in permanent streams at sites of moderate to strong current; often found on outer bends in boulder-stabilised micro-habitats. This species also occurs in pool sections at the base of riffles and cascades, and seems to be sensitive towards siltation.

Feeding

The Australian river mussel is a filter feeder; that is, it feeds by straining suspended matter and food particles from water.

Breeding

The life cycle of mussels includes a parasitic larval stage (*glochidium*) that must attach itself to the gills of a fish (image below right) to complete its development. After detaching from their hosts, juvenile mussels burrow into the stream bed where they grow rapidly for a few years.

The Australian river mussel has a brief, highly synchronised spawning period in autumn and is associated with the occurrence of floods. This species retains its *glochidia* within its shell over the winter months, releasing them into the stream in early spring. This species produces millions of glochidia, but only very few find a fish host and even fewer survive to maturity. Little is known about the life span of the Australian river mussel: 40 years seems to be confirmed but there are estimates of a life span of 80 or even 100 years.

Conservation

Status: The Australian river mussel is included in the International Union for the Conservation of Nature (IUCN) Red List of Threatened Species.

The Australian river mussel has decreased throughout its distribution range over the past 200 years. Remnant populations seem to be fragmented and are of low densities. Major threats to this species are regulating rivers and stream pollution with sediment and nutrients.

Additional information

There are only two species from the genus *Cucumerunio*: one from Australia and one from New Zealand.

Shell of a mature mussel from Cedar Creek.

Parasitic mussel larvae (glochidia) attached to a fish gill.

Distribution

The Australian river mussel is endemic to coastal rivers in NSW and QLD - from Hunter to Burnett River. In the Moreton Bay Region this species is only known from lower Cedar Creek and the South Pine River.

References: Jones H.A. & Byrne M. 2010. The impact of catastrophic channel change on freshwater mussels in the Hunter River system, Australia: a conservation assessment. Aquatic Conservation: Marine and Freshwater Ecosystems 20: 18-30. Photos by Jessica Mowat (shell) and Hugh Jones (glochidia).

Priority Number: 117

Sapphire rockmaster

Diphlebia coerulescens

Description

Defining feature: Rockmasters are very large damselflies with a thick abdomen and - when resting – flatly spread wings (as opposed to folded back wings) which otherwise is typically found in dragonflies. The conspicuously darkened wings are characteristic for the sapphire rockmaster, readily separating it from the other two bright blue rockmaster species that occur in the Moreton Bay Region.

Physical description: The blue and black coloured sapphire rockmaster can reach a length of 55 mm and a wingspan of over 60 mm. The female is of darker appearance as her blue body markings are smaller.

Habitat

The aquatic larvae of the sapphire rockmaster live in rocky, cobbled streams. Adults are often seen basking on sunny rocks near or within the creek. In the Moreton Bay Region the sapphire rockmaster only occurs in upper stream reaches in and near the coastal range where there are streams on bedrock. It seems to be tolerant of slight eutrophication (i.e. load of bio-nutrients).

Feeding

Larvae and adults of the sapphire rockmaster are predators, feeding on other invertebrates.

Breeding

The breeding of the sapphire rockmaster is poorly understood.

From other Diphlebia species in cooler climate zones (Victoria) females are known to lay their eggs into tissue of submerged plants and moss, and the hatched aquatic larvae need one year to grow and develop until emergence of the winged insect. In the warm climate of South East Queensland it is likely that the sapphire rockmaster develops faster with more than one generation per year – stream flow patterns permitting.

Conservation

Status: The sapphire rockmaster has been identified as a species of high biodiversity value in the *Streams of High Biodiversity Value of the Moreton Bay Region* report.

Additional information

In Australia there are five species of the genus *Diphlebia*, three of which occur in the Moreton Bay Region: sapphire rockmaster (*D. coerulescens*), arrowhead rockmaster (*D. nymphoides*) and tropical rockmaster (*D. euphoeoides*).

Aquatic larva.

Distribution

The sapphire rockmaster is endemic to Australia where it occurs along the east coast from mid NSW to north QLD except Cape York (up to 16°N). In most regions the species is rather uncommon. In the Moreton Bay Region, however, it is fairly common because the biogeographical distribution centre of the sapphire rockmaster lies in South East Queensland.

References: Theischinger G. & Hawking J. 2006. *The Complete Field Guide to Dragonflies of Australia*. CSIRO Publishing, Victoria, 366 pages; Nolte U. 2011. *Streams of High Biodiversity Value in the Moreton Bay Region*, 51 pages. Photos by Ulrike Nolte (damselfly) and John Hawking (larva).

Priority Number: 118

North Pine River Freshwater Snail

Fluvidona anodonta

Description

Defining feature: The North Pine River Freshwater Snail is a minute freshwater snail of a height of only 2mm (=lower margin of aperture to tip of spire). Belonging to the snail-family Hydrobiidae, the species has a small plate, which closes the aperture when the animal retreats into its shell.

Physical description: The tiny shell is of a light yellowish-white colour.

Habitat

The North Pine River Freshwater Snail is found in low numbers on the stream bottom in shallow water near the edge of rocky/stony small to medium-sized creeks. It was recorded in streams of excellent to good in-stream habitat structure and riparian condition. Most habitat streams were healthy (Stream Health Class a, b, c), but also included one stream (lower Branch Creek) that was moderately disturbed (SHC d), indicating that this rare species has a certain tolerance of eutrophication (i.e. load of bio-nutrients). These findings – the only existing observations on the biology of *Fluvidona anodonta* – were obtained during Council's long-term monitoring program of freshwater streams (since 1998 ongoing).

Feeding

Not known.

Breeding

Not known.

Conservation

Status: The North Pine River Snail is listed as vulnerable in the IUCN Red List of Threatened Species (IUCN 2010). This is a species of high biodiversity value.

Additional information

In 1982 the Australian Museum (Sydney) mounted a scientific sampling tour to southeast Queensland to re-find a rare snail (*Fluvidona anodonta*) which was described 90 years earlier (Hedley & Musson 1892) from the North Pine River. The tour yielded a single broken shell of *F. anodonta*. Since then Dr W. Ponder tried to find the minute snail at numerous locations but only saw it again when material was sent to him in 2001, collected during Council's stream health and biodiversity assessment Therefore, we know this snail is very rare indeed. Even in the Moreton Bay Region it seems to be of very limited distribution, being recorded so far only in the Pine Rivers system. In 1996 the snail's endemism to the Moreton Bay Region was recognised in giving *F. anodonta* the common name 'North Pine River Freshwater Snail'.

Distribution

The North Pine River Snail is known only from the Pine Rivers system, and it is likely to be endemic to the Moreton Bay Region.

So far *Fluvidona anodonta* has been recorded in five stream reaches: the headwaters and upper reaches of the North Pine River, middle Kobble Creek, upper South Pine River, Branch Creek.

References: Miller A.C., Ponder W.F. & Clark S.A. 1999. Freshwater snails of the genera Fluvidona and Austropyrgus (Gastropoda, Hydrobiidae) from northern New South Wales and southern Queensland, Australia. Invertebrate Taxonomy 13: 461-493, Nolte U. 2011. Streams of high biodiversity value in the MBR, 50 pages. Technical report to MBR Council, Hedley, C., & Musson, C. T. (1892). On a collection of land and fresh water shells from Queensland. In Proceedings of the Linnean Society of New South Wales (Vol. 6, pp. 551-564), International Union for Conservation of Nature (IUCN) Red List of Threatened Species (http://www.iucnredlist.org/details/1291/0). Photo by Ulrike Nolte.

Priority Number: 119

Limitations And Considerations

As previously mentioned, the species list presented in this document is not an exhaustive list. This document has been developed using a "rapid" assessment in the sense that only known and readily available information was scrutinised and used in its development. It is acknowledged that there may indeed exist many more records of species, be they in private hands or with institutions, but these are not necessarily available for public viewing. There may be some species that have the potential to occur in the region, but for which have not actually been recorded. That is not to say that such records do not exist, it merely means that the records have not been made available publicly.

Therefore, the intention of this priority species list is to inform whomever reads this document about the known priority species in the Moreton Bay region, and, hopefully, elicit further discussion and observations about these and other species that, for one or more reasons, may also be considered to be priority species.

Glossary

Action Plans Strategic documents developed by specialists to review the status of a group of plants or animals. They are developed in light of IUCN categories, they identify threats and recommend actions to minimise those threats. The intent of the action plans is to assist government and non-government organisations to establish national priorities for threatened species.

Biome A major regional ecological community of plants and animals extending over large natural areas. For example, a coral reef or tropical rain forest.

Temperate Refers to zones in a range of latitudes between 40° and 60/70°. Typically, the region is not as hot as the subtropical climate and milder than the polar climate.

Native Indigenous to a particular region or country.

Red List The IUCN Red List of Threatened Species™ is widely recognised as the most comprehensive and objective global approach for evaluating the conservation status of plant and animal species (IUCN 2001). Such lists identify and document those species most in need of conservation attention.

IUCN International Union for the Conservation of Nature and Natural Resources.

Bioregion Large, geographically-distinct areas of land with common characteristics such as geology, landform patterns, climate, ecological features and plant and animal communities.

Extinct* A species is extinct when there is no reasonable doubt that the last individual has died, and exhaustive surveys in known and/or expected habitat, at appropriate times (diurnal, seasonal, annual), throughout its historic range, fail to record an individual.

Extinct in the wild* A species is extinct in the wild when it is known only to survive in cultivation, in captivity or as a naturalised population (or populations) well outside the past range.

Critically endangered* A species is critically endangered when the best available evidence indicates that: its population has experienced a noticeable reduction in size (typically, greater than 80% in the last 10 years); it has a severely limited geographical range (between 10 km^2 and 100 km^2); fewer than 250 mature individuals are known to exist; the probability of going extinct in the wild is greater than 50% in less than 10 years.

Endangered* A species is endangered when the best available evidence indicates that: its population has experienced a noticeable reduction in size (typically, between 50% and 70% in the last 10 years); it has a limited geographical range (between 500 km^2 and 5000 km^2); fewer than 2500 mature individuals are known to exist; the probability of going extinct in the wild is greater than 20% in less than 20 years.

Vulnerable* A species is vulnerable when the best available evidence indicates that: its population has experienced a reduction in size (typically, between 30% and 50% in the last 10 years); it has a limited geographical range (between 2000 km2 and 20 000 km2); fewer than 10 000 mature individuals are known to exist; the probability of going extinct in the wild is greater than 10% in less than 100 years.

Near threatened* A species is near threatened when it has been evaluated against the criteria but does not qualify for critically endangered, endangered or vulnerable now, but is close to qualifying for, or is likely to qualify for, a threatened category in the near future.

Least concern* A species is of least concern when it has been evaluated against the criteria and does not qualify for critically endangered, endangered, vulnerable or near threatened. Widespread and abundant species are included in this category.

Data deficient A species is considered data deficient when there is inadequate information to make a direct, or indirect, assessment of its risk of extinction based on its distribution and/or population status. Data deficient is not a category of threat. Listing of species in this category indicates that more information is required and acknowledges the possibility that future research will show that threatened classification is appropriate.

* after IUCN (2001)

References

Abreu-Grobois A, Plotkin P. 2008. Lepidochelys olivacea. International Union for Conservation of Nature (IUCN) Red List of Threatened Species. Version 2010.4. http://www.iucnredlist.org/apps/redlist/details/11534/0 Accessed 15 April 2011.

Amphibian Ark .2011. Chytrid Fungus. Joint venture of World Association of Zoos and Aquariums (WAZA), IUCN/SSC Conservation Breeding Specialist Group (CBSG), IUCN/SSC Amphibian Specialist Group (ASG). http://www.amphibianark.org/the-crisis/chytrid-fungus/. Accessed 7 April 2011.

Amphibian Research Centre. 2011. Frogs of Victoria: Family Hylidae. http://frogs.org.au/frogs/hylidae.html. Accessed 11 April 2011.

Aplin K, Dickman C, Salas L, Helgen K. 2008. Tachyglossus aculeatus. In: IUCN 2010. IUCN Red List of Threatened Species. Version 2010.4. www.iucnredlist.org. Accessed 15 April 2011.

Australian Government. 2011. Approved Conservation Advice (s266B of the Environment Protection and Biodiversity Conservation Act 1999): Approved Conservation Advice for Sophora fraseri. http://www.environment.gov.au/biodiversity/threatened/species/pubs/8836-conservation-advice.pdf. Accessed April 7 2011.

Australian Government. 2011. Approved Conservation Advice (s266B of the Environment Protection and Biodiversity Conservation Act 1999): Approved Conservation Advice for Phaius bernaysii. http://www.environment.gov.au/biodiversity/threatened/species/pubs/4918-conservation-advice.pdf. Accessed April 19 2011."

Australian Government. 2011. Approved Conservation Advice for Syzygium hodgkinsoniae (Smooth-bark Rose Apple), Department of Sustainability, Environment, Water, Population and Communities, Canberra. http://www.environment.gov.au/biodiversity/threatened/species/pubs/3539-conservation-advice.pdf. Accessed 14 April 2011."

Australian Native Plants Nursery .2011. Gossia inophloia syn Austromyrtus inophloia. http://www.australianplants.com/plants.aspx?id=1663. Accessed 26 April 2011.

Australian Native Plants Society (Australia). 2011. Gossia inophloia. http://anpsa.org.au/g-ino.html. Accessed 26 April 2011.

Australian Native Plants Society. 2008. Ficus macrophylla. http://anpsa.org.au/f-mac.html. Accessed

15 April 2011.

Australian Reptile Park. 2010. Land Mullet - Egernia major. http://www.reptilepark.com.au/animal-profile.asp?ID=78. Accessed 15 April 2011.

Australian Reptile Park. 2011. Emu. http://www.reptilepark.com.au/animalprofile.asp?id=23. Accessed 18 April 2011.

Australian Tropical Rainforest Plants. 2011. Elaeocarpus coorangooloo Species Information Sheets. http://keys.trin.org.au:8080/key-server/data/0e0f0504-0103-430d-8004-060d07080d04/media/Html/taxon/Elaeocarpus_coorangooloo.htm. Accessed 6 April 2011.

Australian Tropical Rainforest Plants. 2011. Marsdenia hemiptera Species Information Sheet. http://keys.trin.org.au:8080/key-server/data/0e0f0504-0103-430d-8004-060d07080d04/media/Html/taxon/Marsdenia_hemiptera.htm. Accessed 6 April 2011.

AviWeb. 2010. Glossy Black Cockatoos aka Glossy Cockatoos. http://www.avianweb.com/glossyblackcockatoos.html. Accessed 14 April 2010.

Bird J, Butchart S, Garnett S. 2004. Grantiella picta. International Union for Conservation of Nature (IUCN) Red List of Threatened Species. Version 2010.4. http://www.iucnredlist.org/apps/redlist/details/146271/0 Accessed 7 April 2011.

Bird J, Butchart S. 2009. Haematopus fuliginosus. International Union for Conservation of Nature (IUCN) Red List of Threatened Species. Version 2010.4. http://www.iucnredlist.org/apps/redlist/details/144077/0. Accessed 7 April 2011.

Bird J, Butchart S. 2009. Lophoictinia isura. International Union for Conservation of Nature (IUCN) Red List of Threatened Species. Version 2010.4. http://www.iucnredlist.org/apps/redlist/details/144314/0. Accessed 12 April 2011.

Bird J, Butchart S. 2009. Melithreptus gularis. International Union for Conservation of Nature (IUCN) Red List of Threatened Species. Version 2010.4. http://www.iucnredlist.org/apps/redlist/details/150899/0. Accessed 7 April 2011.

Bird J, Butchart S. 2009. Neophema pulchella. International Union for Conservation of Nature (IUCN) Red List of Threatened Species. Version 2010.4. http://www.iucnredlist.org/apps/redlist/details/142520/0. Accessed 7 April 2011.

Bird J, Butchart S. 2009. Phaethon rubricauda. International Union for Conservation of Nature (IUCN) Red List of Threatened Species. Version 2010.4. http://www.iucnredlist.org/apps/redlist/details/144608/0 Accessed 7 April 2011.

Bird J, Butchart S. 2009. Stipiturus malachurus. International Union for Conservation of Nature (IUCN) Red List of Threatened Species. Version 2010.4. http://www.iucnredlist.org/apps/redlist/details/146103/0. Accessed 7 April 2011.

BirdLife International . 2009. Calyptorhynchus lathami. In: IUCN 2010. IUCN Red List of Threatened Species. Version 2010.4. www.iucnredlist.org. Accessed 8 April 2011.

BirdLife International. 2008. Erythrotriorchis radiatus. In: IUCN 2010. IUCN Red List of Threatened Species. Version 2010.4. www.iucnredlist.org. Accessed 18 April 2011.

BirdLife International. 2008. Ephippiorhynchus asiaticus. In: IUCN 2010. IUCN Red List of Threatened Species. Version 2010.4. www.iucnredlist.org. Accessed 7 April 2011.

BirdLife International. 2009. Tyto tenebricosa. International Union for Conservation of Nature (IUCN) Red List of Threatened Species. Version 2010.4. http://www.birdlife.org/datazone/speciesfactsheet.php?id=32270. Accessed 6 April 2011.

BirdLife International. 2011. Species factsheet: Accipiter novaehollandiae. http://www.birdlife.org/datazone/speciesfactsheet.php?id=3431. Accessed 11 April 2011.

BirdLife International. 2011. Species factsheet: Climacteris erythrops. http://www.birdlife.org/datazone/speciesfactsheet.php?id=5157. Accessed 8 April 2011.

Birds Australia. 2011. Birds in Backyards: Emu. http://birdsinbackyards.net/species/Dromaius-novaehollandiae. Accessed 18 April 2011.

Birds Australia. 2011. Painted Honeyeater. http://birdsinbackyards.net/species/Grantiella-picta Accessed 6 April 2011.

Birds Australia. 2011. Southern Emu-wren. http://birdsinbackyards.net/species/Stipiturus-malachurus. Accessed 11 April 2011.

Birds in Backyards. 2011. Black-necked stork. http://birdsinbackyards.net/species/Ephippiorhynchus-asiaticus. Accessed 5 April 2011.

Birds in Backyards. 2011. Grey Goshawk. http://birdsinbackyards.net/species/Accipiter-novaehollandiae. Accessed 11 April 2011.

Birds Queensland. 2010. Waders. Queensland Ornithological Society Inc. http://birdsqueensland.org.au/shore_birds_waders.php. Accessed 8 June 2011.

Borsboom A. 1996. Conservation Management Profile: Spotted-tailed quoll (southern subspecies) Dasyurus maculatus maculatus. Department of Environment and Resource Management, Queensland Government. http://www.derm.qld.gov.au/register/p02353aa.pdf. Retrieved April 6 2011.

Bostock PD, Holland AE (eds). 2010. Census of the Queensland Flora 2010. Queensland Herbarium,

Braby MF. 2004. The complete field guide to butterflies of Australia. Victoria, CSIRO Publishing. 352 p.

Brisbane Rainforest Action and Information Network. 2007. Nothoalsomitra suberosa (CUCURBITACEAE); Corky Cucumber. http://www.brisrain.webcentral.com.au/01_cms/details_pop.asp?ID=444. Accessed 6 April 2011.

Brisbane Rainforest Action and Information Network. 2007. Symplocos harroldii (SYMPLOCACEAE). http://www.brisrain.webcentral.com.au/01_cms/details_pop.asp?ID=206. Accessed 6 April 2011.

Brooker MIH, Kleinig DA. 2004. Field guide to Eucalypts. Volume 3 Northern Australia. 2nd edition. Richmond, Bloomings Books. 428 p.

Brown EA. 1992. New South Wales Flora Online - Acomis acoma. http://plantnet.rbgsyd.nsw.gov.au/cgi-bin/NSWfl.pl?page=nswfl&lvl=sp&name=Acomis~acoma. Accessed 6 April 2011.

Cogger HG. 2000. Reptiles and Amphibians of Australia, Sixth Edition. Reed New Holland, New South Wales.

Cogger HG. 2000. Reptiles and Amphibians of Australia, Sixth Edition. Reed New Holland, New South Wales.

Cooloola Coastcare. undated. Tecomanthe hillii - Fraser Island Creeper. Cooloola Coastcare. http://www.cooloolacoastcare.org.au/html/species_pages/new_tecomanthe_hillii.html#. Accessed 21 April 2011.

Department of Environment and Resource Management, Brisbane. 2011. http://www.derm.qld.gov.au/wildlife-ecosystems/plants/pdf/qld-flora-census.pdf. Accessed 6 April 2011."

Department of Environment and Resource Management, Queensland Government. 2011. Conservation Management Profile: Wallum Froglet. http://www.derm.qld.gov.au/wildlife-ecosystems/wildlife/az_of_animals/wallum_froglet.html. Retrieved April 7 2011.

Department of Environment and Resource Management, Queensland Government. 2010. Conservation Management Profile: Common death adder. http://www.derm.qld.gov.au/wildlife-ecosystems/wildlife/az_of_animals/common_death_adder.htmlll. Retrieved April 11 2011.

Department of Environment and Resource Management, Queensland Government. 2010. Conservation Management Profile: Platypus. http://www.derm.qld.gov.au/wildlife-ecosystems/wildlife/az_of_animals/platypus.htmll. Retrieved April 14 2011.

Department of Environment and Resource Management, Queensland Government. 2010. Conservation Management Profile: Black Flying-fox. http://www.derm.qld.gov.au/wildlife-ecosystems/wildlife/az_of_animals/black_flyingfox.html. Retrieved April 14 2011.

Department of Environment and Resource Management, Queensland Government. 2010. Conservation Management Profile: Little Red Flying-fox. http://www.derm.qld.gov.au/wildlife-ecosystems/wildlife/az_of_animals/little_red_flyingfox.html. Retrieved April 26 2011.

Department of Environment and Resource Management, Queensland Government. 2010. Conservation Management Profile: Giant barred Frog. http://www.derm.qld.gov.au/wildlife-ecosystems/wildlife/threatened_plants_and_animals/endangered/giant_barredfrog.htmll. Retrieved April 18 2011.

Department of Environment and Resource Management, Queensland Government. 2011. Conservation Management Profile: Wallum sedgefrog. http://www.derm.qld.gov.au/wildlife-ecosystems/wildlife/az_of_animals/wallum_sedgefrog.htmll. Retrieved April 7 2011.

Department of Environment and Resource Management, Queensland Government. 2010. Conservation Management Profile: Oxleyan Pygmy Perch. http://www.derm.qld.gov.au/wildlife-ecosystems/wildlife/az_of_animals/oxleyan_pygmy_perch.html. Retrieved April 19 2011.

Department of Environment and Resource Management, Queensland Government. 2010. Conservation Management Profile: Coxen's Fig-parrot. http://www.derm.qld.gov.au/wildlife-ecosystems/wildlife/az_of_animals/doubleeyed_figparrot_coxens.html. Retrieved April 18 2011.

Department of Sustainability and Environment. 2003. Action Statement Flora and Fauna Guarantee Act 1988 No. 119: Brolga. http://www.dse.vic.gov.au/CA256F310024B628/0/D3A092ECF3F22EB0CA2570ED0007797C/$File/119+Brolga+2001.pdf. Accessed April 18 2011.

Department of Sustainability, Environment, Water, Population and Communities. 2011. Caretta caretta in Species Profile and Threats Database, Department of Sustainability, Environment, Water, Population and Communities, Canberra. http://www.environment.gov.au/sprat. Accessed 5 April 2011.

Department of Sustainability, Environment, Water, Population and Communities. 2011. Phaius australis in Species Profile and Threats Database, Department of Sustainability, Environment, Water, Population and Communities, Canberra. http://www.environment.gov.au/sprat. Accessed 4 April 2011.

Department of Sustainability, Environment, Water, Population and Communities. 2011. Dasyurus maculatus maculatus in Species Profile and Threats Database, Department of Sustainability, Environment, Water, Population and Communities, Canberra. http://www.environment.gov.au/sprat. Accessed 4 April 2011.

Department of Sustainability, Environment, Water, Population and Communities. 2011. Mixophyes fleayi in Species Profile and Threats Database, Department of Sustainability, Environment, Water, Population and Communities, Canberra. http://www.environment.gov.au/sprat. Accessed 6 April 2011.

Department of Sustainability, Environment, Water, Population and Communities. 2011. Litoria olongburensis in Species Profile and Threats Database, Department of Sustainability, Environment, Water, Population and Communities, Canberra. http://www.environment.gov.au/sprat. Accessed 7 April 2011.

Department of Sustainability, Environment, Water, Population and Communities. 2011. Xeromys myoides in Species Profile and Threats Database, Department of Sustainability, Environment, Water, Population and Communities, Canberra. http://www.environment.gov.au/sprat. Accessed 7 April 2011.

Department of Sustainability, Environment, Water, Population and Communities. 2011. Macadamia integrifolia in Species Profile and Threats Database, Department of Sustainability, Environment, Water, Population and Communities, Canberra. http://www.environment.gov.au/sprat. Accessed 7 April 2011.

Department of Sustainability, Environment, Water, Population and Communities. 2011. Romnalda strobilacea in Species Profile and Threats Database, Department of Sustainability, Environment, Water, Population and Communities, Canberra. http://www.environment.gov.au/sprat. Accessed 6 April 2011.

Department of Sustainability, Environment, Water, Population and Communities. 2011. Neoceratodus forsteri in Species Profile and Threats Database, Department of Sustainability, Environment, Water, Population and Communities, Canberra. http://www.environment.gov.au/sprat. Accessed 6 April 2011.

Department of Sustainability, Environment, Water, Population and Communities. 2011. Pteropus poliocephalus in Species Profile and Threats Database, Department of Sustainability, Environment, Water, Population and Communities, Canberra. http://www.environment.gov.au/sprat. Accessed 6 April 2011.

Department of Sustainability, Environment, Water, Population and Communities. 2011. Pandion cristatus in Species Profile and Threats Database, Department of Sustainability, Environment, Water, Population and Communities, Canberra. http://www.environment.gov.au/sprat. Accessed 18 Apr 2011.

Department of Sustainability, Environment, Water, Population and Communities. 2011. Anthochaera phrygia in Species Profile and Threats Database, Department of Sustainability, Environment, Water, Population and Communities, Canberra. Available from: http://www.environment.gov.au/sprat. Accessed 18 April 2011

Department of Sustainability, Environment, Water, Population and Communities. 2011. Macronectes giganteus in Species Profile and Threats Database, Department of Sustainability, Environment,

Water, Population and Communities, Canberra. Available from: http://www.environment.gov.au/sprat. Accessed 18 April 2011.

Department of Sustainability, Environment, Water, Population and Communities. 2011. Cyclopsitta diophthalma coxeni in Species Profile and Threats Database, Department of Sustainability, Environment, Water, Population and Communities, Canberra. http://www.environment.gov.au/sprat. Accessed 19 April 2011.

Department of Sustainability, Environment, Water, Population and Communities. 2011. Lathamus discolour in Species Profile and Threats Database, Department of Sustainability, Environment, Water, Population and Communities, Canberra. http://www.environment.gov.au/sprat. Accessed 19 April 2011.

Department of Sustainability, Environment, Water, Population and Communities. 2011. Plectranthus nitidus in Species Profile and Threats Database, Department of Sustainability, Environment, Water, Population and Communities, Canberra. http://www.environment.gov.au/sprat. Accessed 19 April 2011.

Department of Sustainability, Environment, Water, Population and Communities. 2011. Nannoperca oxleyana in Species Profile and Threats Database, Department of Sustainability, Environment, Water, Population and Communities, Canberra. http://www.environment.gov.au/sprat. Accessed 19 April 2011.

Department of Sustainability, Environment, Water, Population and Communities. 2011. Dasyurus hallucatus — Northern Quoll in Species Profile and Threats Database, Department of Sustainability, Environment, Water, Population and Communities. http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=331 Accessed 18 April 2011.

Department of Sustainability, Environment, Water, Population and Communities. 2011. Diomedea exulans (sensu lato) in Species Profile and Threats Database, Department of Sustainability, Environment, Water, Population and Communities, Canberra. http://www.environment.gov.au/sprat. Accessed 19 April 2011.

Department of Sustainability, Environment, Water, Population and Communities. 2011. Thalassarche cauta cauta in Species Profile and Threats Database, Department of Sustainability, Environment, Water, Population and Communities, Canberra. http://www.environment.gov.au/sprat. Accessed 27 April 2011.

Department of Sustainability, Environment, Water, Population and Communities. 2011. Rostratula australis — Australian Painted Snipe in Species Profile and Threats Database, Department of Sustainability, Environment, Water, Population and Communities. http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=77037. Accessed 15 April 2011.

Department of Sustainability, Environment, Water, Population and Communities. 2011. Turnix melanogaster — Black-breasted Button-quail in Species Profile and Threats Database, Department of Sustainability, Environment, Water, Population and Communities. http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=923 Accessed 15 April 2011.

Department of Sustainability, Environment, Water, Population and Communities. 2011. Potorous tridactylus tridactylus — Long-nosed Potoroo (SE mainland) in Species Profile and Threats Database, Department of Sustainability, Environment, Water, Population and Communities. http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=1765 Accessed 15 April 2011.

Department of Sustainability, Environment, Water, Population and Communities 2011. Syzygium hodgkinsoniae — Smooth-bark Rose Apple, Red Lilly Pilly in Species Profile and Threats Database, Department of Sustainability, Environment, Water, Population and Communities, Canberra. http://www.environment.gov.au/sprat. Accessed 7 April 2011.

Department of Sustainability, Environment, Water, Population and Communities. 2011. Macadamia tetraphylla in Species Profile and Threats Database, Department of Sustainability, Environment, Water, Population and Communities, Canberra. http://www.environment.gov.au/sprat. Accessed 7 April 2011.

Department of Sustainability, Environment, Water, Population and Communities. 2008. Approved Conservation Advice for Romnalda strobilacea, Department of Sustainability, Environment, Water, Population and Communities, Canberra. http://www.environment.gov.au/biodiversity/threatened/species/pubs/5948-conservation-advice. Accessed 6 April 2011.

Department of Sustainability, Environment, Water, Population and Communities. 2011. Botaurus poiciloptilus in Species Profile and Threats Database, Department of Sustainability, Environment, Water, Population and Communities, Canberra. http://www.environment.gov.au/sprat. Accessed 19 April 2011.

Department of Sustainability, Environment, Water, Population and Communities. 2011. Eretmochelys imbricata — Hawksbill Turtle in Species Profile and Threats Database, Department of Sustainability, Environment, Water, Population and Communities. http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=1766. Accessed 15 April 2011.

Department of Sustainability, Environment, Water, Population and Communities. 2011. Chelonia mydas — Green Turtle in Species Profile and Threats Database, Department of Sustainability, Environment, Water, Population and Communities. http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=1765. Accessed 15 April 2011.

Department of Sustainability, Environment, Water, Population and Communities. 2011. Mixophyes iteratus in Species Profile and Threats Database, Department of Sustainability, Environment, Water, Population and Communities, Canberra. Available from: http://www.environment.gov.au/sprat. Accessed 18 April 2011.

Department of Sustainability, Environment, Water, Population and Communities. 2010. Approved Conservation Advice for Marsdenia coronata Slender Milkvine). http://www.environment.gov.au/biodiversity/threatened/species/pubs/20632-conservation-advice.pdf. Accessed 11 April 2011.

Department of Sustainability, Environment, Water, Population and Communities. 2011. Approved Conservation Advice for Dodonaea rupicola. http://www.environment.gov.au/biodiversity/threatened/species/pubs/15140-conservation-advice.pdf. Accessed 14 April 2011.

Department of Sustainability, Environment, Water, Population and Communities. 2008. Approved Conservation Advice for Floydia praealta (Ball Nut). http://www.environment.gov.au/biodiversity/threatened/species/pubs/15762-conservation-advice.pdf. Accessed 14 April 2011.

Department of Sustainability, Environment, Water, Population and Communities. 2008. Approved Conservation Advice for Bosistoa transversa (Three-leaved Bosistoa). http://www.environment.gov.au/biodiversity/threatened/species/pubs/78841-conservation-advice.pdf. Accessed 14 April 2011.

Department of Sustainability, Environment, Water, Population and Communities. 2011. Thalassarche melanophris in Species Profile and Threats Database, Department of Sustainability, Environment, Water, Population and Communities, Canberra. Available from: http://www.environment.gov.au/sprat. Accessed 20 April 2011.

Department of Sustainability, Environment, Water, Population and Communities. 2011. Dugong dugon in Species Profile and Threats Database, Department of Sustainability, Environment, Water, Population and Communities. http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=28. Accessed 14 April 2011.

Department of Sustainability, Environment, Water, Population and Communities. 2011. Taudactylus diurnus — Southern Day Frog, Mt Glorious Torrent Frog in Species Profile and Threats Database, Department of Sustainability, Environment, Water, Population and Communities. http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=1886. Accessed 7 April 2011.

Department of Sustainability, Environment, Water, Population and Communities. 2011. Sousa chinensis in Species Profile and Threats Database, Department of Sustainability, Environment, Water, Population and Communities. http://www.environment.gov.au/sprat . Accessed 6 April 2011.

Department of Sustainability, Environment, Water, Population and Communities. 2011. Stipiturus malachurus intermedius — Southern Emu-wren (Fleurieu Peninsula), Mount Lofty Southern Emu-wren in Species Profile and Threats Database. http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=26005. Accessed 11 April 2011.

Doughty P, Allison A. 2009. Chlamydosaurus kingii. In: IUCN 2010. IUCN Red List of Threatened Species. Version 2010.4. www.iucnredlist.org. Accessed 14 April 2011.

Environment, Climate Change and Water. 2011. Cassia brewsteri var. marksiana (a tree) - endangered species listing. http://www.environment.nsw.gov.au/determinations/CassiaBrewsteriVarMarksianaEndSpListing.htm. Accessed 14 April 2011.

Environment, Climate Change and Water. 2011. Glossy black-cockatoo. Native Animal Fact Sheet. http://www.environment.nsw.gov.au/animals/GlossyBlackCockatoos.htm. Accessed 14 April 2011.

Food and Agriculture Organization of the United Nations. 2011. Species Fact Sheets. Eretmochelys imbricata. http://www.fao.org/fishery/species/3606/en. Accessed 15 April 2011.

Frogs Australia Network. 2005. Australian Frog Database - Assa darlingtoni. http://www.frogsaustralia.net.au/frogs/display.cfm?frog_id=3. Accessed 14 April 2011.

Frogs Australia Network. 2005. Australian Frog Database - Litoria freycineti. http://www.frogsaustralia.net.au/frogs/display.cfm?frog_id=153. Accessed 14 April 2011.

Frogs Australia Network. 2005. Australian frog Database: Litoria brevipalmata. http://www.frogsaustralia.net.au/frogs/display.cfm?frog_id=135. Accessed 11 April 2011.

Frogs Australia. 2011. Adelotus brevis. Taken from the Australian Frogs Database. http://www.frogsaustralia.net.au/frogs/display.cfm?frog_id=1. Accessed 11 April 2011.

Garnett ST, Crowley GM. 2000. Action Plan for Australian Birds 2000 – Taxon Summary, Lewin's Rail. http://www.environment.gov.au/biodiversity/threatened/publications/action/birds2000/pubs/lewins-rail-e.pdf. Accessed 7 April 2011.

Garnett ST, Crowley GM. 2000. The Action Plan for Australian Birds 2000. Recovery outlines and taxon summary - Plumed frogmouth. http://www.environment.gov.au/biodiversity/threatened/publications/action/birds2000/pubs/plumed-frogmouth.pdf. Accessed 26 April 2011.

Germplasm Resources Information Network. 2011. Brasenia schreberi. http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?400190. Accessed 3 April 2011.

Gordon G. 1996. Conservation Management Profile: Koala Phascolarctos cinereus. Department of Environment and Resource Management, Queensland Government. http://www.derm.qld.gov.au/register/p02352aa.pdf. Retrieved 7 April 2011.

Hall L, McKenzie N. 2008. Pteropus scapulatus. In: IUCN 2010. IUCN Red List of Threatened Species. Version 2010.4. www.iucnredlist.org. Downloaded on 26 April 2011.

Harden G. 1995. Floydia praealta. New South Wales flora online. http://plantnet.rbgsyd.nsw.gov.au/cgi-bin/NSWfl.pl?page=nswfl&lvl=sp&name=Floydia~praealta. Accessed 14 April 2011.

Harden G. 2011. Lepiderema pulchella. New South Wales flora online. http://plantnet.rbgsyd.nsw.gov.au/cgi-bin/NSWfl.pl?page=nswfl&lvl=sp&name=Lepiderema~pulchella. Accessed 15 April 2011.

Harden GJ, Williams JB. 1995. New South Wales Flora Online - Marsdenia hemiptera. http://plantnet.rbgsyd.nsw.gov.au/cgi-bin/NSWfl.pl?page=nswfl&lvl=sp&name=Marsdenia~hemiptera. Accessed 6 April 2011.

Hero J, Clarke J, Meyer E. 2004. Litoria pearsoniana. International Union for Conservation of Nature (IUCN) Red List of Threatened Species. Version 2010.4. http://www.iucnredlist.org/apps/redlist/details/12150/0. Accessed 11 April 2011.

Hero J, May S, Newell D, Hines H, Clarke J, Meyer E. 2004. Taudactylus diurnus. International Union for Conservation of Nature (IUCN) Red List of Threatened Species. Version 2010.4. http://www.iucnredlist.org/apps/redlist/details/21530/0. Accessed 7 April 2011.

Hero J-M, Hines H, Meyer E, Lemckert F, Newell D, Clarke J. 2004. Litoria brevipalmata. In: IUCN 2010. IUCN Red List of Threatened Species. Version 2010.4. www.iucnredlist.org. Accessed10 April 2011.

Hill K D .2004. Eucalyptus dunnii. Eucalink, A Web Guide to the Eucalypts. http://plantnet.rbgsyd.nsw.gov.au/cgi-bin/euctax.pl?/PlantNet/Euc=&name=Eucalyptus+dunnii. Accessed 21 April 2011.

Hines H, Hero J-M, Meyer E, Newell D. 2004. Litoria freycineti. International Union for Conservation of Nature (IUCN) Red List of Threatened Species. Version 2010.4. http://www.iucnredlist.org/apps/redlist/details/41033/0. Accessed 14 April 2011.

Hines H, Meyer E, Hero J, Newell D, Clarke J. 2004. Adelotus brevis. International Union for Conservation of Nature (IUCN) Red List of Threatened Species. Version 2010.4. http://www.iucnredlist.org/apps/redlist/details/520/0. Accessed 11 April 2011.

Hines H, Meyer E, Newell D, Clarke J, Hero J-M. 2004. Mixophyes fleayi. In: IUCN 2010. IUCN Red List of Threatened Species. Version 2010.4. www.iucnredlist.org. Accessed 18 April 2011

Hines H, Newell D, Meyer E, Hero J-M, Clarke J. 2004. Litoria olongburensis. In: IUCN 2010. IUCN Red List of Threatened Species. Version 2010.4. www.iucnredlist.org. Accessed 18 April 2011.

Hutson T, Schlitter D, Csorba G, Hall L, Lunney D, Hamilton S. 2008. Phoniscus papuensis. Inter-

national Union for Conservation of Nature (IUCN) Red List of Threatened Species. Version 2010.4 http://www.iucnredlist.org/apps/redlist/details/10982/0. Accessed 7 April 2011.

Jacobs SWL, Les DH, Moody ML, Hellquist CB. 2006. Two new species of Aponogeton (Aponogetonaceae), and a key species from Australia. Telopea 11(2), 129-134.

Jacobs SWL. 1990. New South Wales Flora Online - Brasenia schreberi. http://plantnet.rbgsyd.nsw.gov.au/cgi-bin/NSWfl.pl?page=nswfl&lvl=sp&name=Brasenia~schreberi. Accessed 6 April 2011.

Jacobs SWL. 2011. New South Wales Flora Online - Aponogeton elongatus. http://plantnet.rbgsyd.nsw.gov.au/cgi-bin/NSWfl.pl?page=nswfl&lvl=sp&name=Aponogeton~elongatus. Accessed 6 April 2011.

Lewis DP. 2006. Greater Sooty Owl - Tyto tenebricosa. http://www.owlpages.com/owls.php?genus=Tyto&species=tenebricosa. Accessed 7 April 2011.

Lunney D, Dickman C, Copley P, Grant T, Munks S, Carrick F, Serena M, Ellis M. 2008. Ornithorhynchus anatinus. In: IUCN 2010. IUCN Red List of Threatened Species. Version 2010.4. www.iucnredlist.org. Accessed 13 April 2011.

Marine Turtle Specialist Group. 1996. Caretta caretta. In: IUCN 2010. IUCN Red List of Threatened Species. Version 2010.4. www.iucnredlist.org. Accessed 18 April 2011.

McCoy M 2000. Little Red Flying-fox. In: Strahan R (Ed.). 2000. The Mammals Of Australia: Revised Edition. Australia Museum and Reed New Holland.

Menkhorst P, Rhind S, Ellis M. 2008. Phascogale tapoatafa. In: IUCN 2010. IUCN Red List of Threatened Species. Version 2010.4. www.iucnredlist.org. Accessed 13 April 2011.

Miller, B. 2007. Richmond Birdwing Vine (Pararistolochia praevenosa). Butterfly and other Invertebrates Club Inc. http://www.boic.org.au/01_cms/details.asp?ID=31. Accessed 13 April 2011.

Mortimer JA, Donnelly M. 2008. Eretmochelys imbricata. International Union for Conservation of Nature (IUCN) Red List of Threatened Species. Version 2010.4. http://www.iucnredlist.org/apps/redlist/details/8005/0. Accessed 14 April 2011.

National Geographic. 2011. Loggerhead Sea Turtle in Animals: Facts. http://animals.nationalgeographic.com/animals/reptiles/loggerhead-sea-turtle/. Accessed 6 April 2011.

National Herbarium of New South Wales. 2011. Acacia baueri Benth. subsp. Baueri. Plantnet. http://plantnet.rbgsyd.nsw.gov.au/cgi-bin/NSWfl.pl?page=nswfl&lvl=in&name=Acacia~baueri+subsp.~baueri. Accessed 10 May 2011.

National Herbarium of New South Wales. 2011. New South Wales Flora Online - Cassia marksiana. http://plantnet.rbgsyd.nsw.gov.au/cgi-bin/NSWfl.pl?page=nswfl&lvl=sp&name=Cassia~marksiana. Accessed 14 April 2011.

New South Wales Department of Environment and Conservation .2011. Glossy Black-cockatoo profile. http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10140. Accessed 8 April 2011.

New South Wales Department of Environment and Conservation 2011. Nightcap Plectranthus. http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10638. Accessed 18 April 2011.

New South Wales Department of Environment and Conservation. 2005. Giant ironwood profile. http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10166. Accessed 6 April 2011.

New South Wales Department of Environment and Conservation. 2011. Powerful Owl profile. http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=105626. Accessed 7 April 2011.

New South Wales Department of Environment and Conservation. 2011. Brolga profile. http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10382. Accessed 15April 2011.

New South Wales Department of Environment and Conservation. 2011. Australasian Bittern. http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10105. Accessed 19 April 2011.

New South Wales Department of Environment and Conservation. 2011. Wandering Pepper Cress. http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10464. Accessed 19 April 2011.

New South Wales Department of Environment and Conservation. 2011. Ravine Orchid. http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10744. Accessed 19 April 2011.

New South Wales Department of Environment and Conservation. 2011. Koala profile. http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10616. Accessed 7 April 2011.

New South Wales Department of Environment and Conservation. 2011. Wallum froglet profile. http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10183. Accessed 7 April 2011.

New South Wales Department of Environment and Conservation. 2011. Green-thighed Frog profile. http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10485. Accessed 11 April 2011.

New South Wales Department of Environment and Conservation. 2011. Squirrel glider profile. http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10604. Accessed 14 April 2011.

New South Wales Department of Environment and Conservation. 2011. Black Flying-fox profile. http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10696. Accessed 14 April 2011.

New South Wales Department of Environment and Conservation. 2011. Giant Barred Frog. http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=105382. Accessed 18 April 2011.

New South Wales Department of Environment and Conservation. 2011. Regent Honeyeater. http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10841. Accessed 18 April 2011.

New South Wales Department of Environment and Conservation. 2011. Southern giant-petrel. http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=109121. Accessed 18 April 2011.

New South Wales Department of Environment and Conservation. 2011. Swift parrot. http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10455. Accessed 18 April 2011.

New South Wales Department of Environment and Conservation. 2011. Slender Marsdenia. http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10507. Accessed 11 April 2011.

New South Wales Department of Environment and Conservation. 2011. Ball Nut Profile. http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10332. Accessed 14 April 2011.

New South Wales Department of Environment and Conservation. 2011. Austral Toadflax Profile. http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10802. Accessed 14 April 2011.

New South Wales Department of Environment and Conservation. 2011. Missionary Nutgrass Profile. http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10200. Accessed 21 April 2011.

New South Wales Department of Environment and Conservation. 2011. Yellow Satinheart Profile. http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10103. Accessed 14 April 2011.

New South Wales Department of Environment and Conservation. 2011. Brush Cassia profile. http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10150. Accessed 14 April 2011.

New South Wales Department of Environment and Conservation. 2011. Fine-leaved Tuckeroo profile. http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10460. Accessed 15 April 2011.

New South Wales Department of Environment and Conservation. 2011. Maundia triglochinoides profile. http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10511. Accessed 15 April 2011.

New South Wales Department of Environment and Conservation. 2011. Beach Stone-curlew profile. http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10280. Accessed 27 April 2011.

New South Wales Department of Environment and Conservation. 2011. Painted Honeyeater profile. http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10357. Accessed 6 April 2011.

New South Wales Department of Environment and Conservation. 2011. Black-necked stork profile. http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10275. Accessed 5 April 2011.

New South Wales Department of Environment and Conservation. 2011. Sooty Oystercatcher profile. http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10385. Accessed 7 April 2011.

New South Wales Department of Environment and Conservation. 2011. Black-chinned Honeyeater profile. http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10523. Accessed 7 April 2011.

New South Wales Department of Environment and Conservation. 2011. Overview of the Dry sclerophyll forests (shrubby sub formation).

New South Wales Department of Environment and Conservation. 2011. Pouvhed Frog profile. http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10070. Accessed 14 April 2011.

New South Wales Department of Environment and Conservation. 2011. Overview of the Dry sclerophyll forests (shrubby sub formation).

New South Wales Department of Environment and Conservation. 2011. Turquoise parrot profile. http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10555. Accessed 7 April 2011.

New South Wales National Parks and Wildlife Service. 1999. Red-tailed Tropicbird. Threatened Species Information Sheet. http://www.environment.nsw.gov.au/resources/nature/tsprofileRedtailedTropicbird.pdf. Accessed 6 April 2011.

New South Wales National Parks and Wildlife Service. 1999. Square-tailed Kite Threatened Species Information Sheet. http://www.environment.nsw.gov.au/resources/nature/tsprofileSquaretailedKite.pdf. Accessed 12 April 2011.

New South Wales National Parks and Wildlife Service. 1999. Turquoise Parrot. Threatened Species Information Sheet. http://www.environment.nsw.gov.au/resources/nature/tsprofileTurquoiseParrot.pdf. Accessed 7 April 2011.

New South Wales National Parks and Wildlife Service. 2011. Short-beaked Echidnas. http://www.lcrtp.com.au/environment_and_awards/Short-beaked%20Echidna.pdf. Accessed April 15 2011.

New South Wales Parks and Wildlife Service. 2011. Threatened Species Information: Coxen's Fig-parrot. http://www.environment.nsw.gov.au/resources/nature/tsprofileDoubleeyedFigParrot.pdf. Accessed 19 April 2011.

New South Wales Parks and Wildlife Service. 2011. Threatened Species Information: Nightcap Plectranthus. http://www.environment.nsw.gov.au/resources/nature/tsprofilePlectranthusNitidus.pdf. Accessed 19 April 2011.

New South Wales Parks and Wildlife Service. 2011. Threatened Species Information: Australasian Bittern. http://www.environment.nsw.gov.au/resources/nature/tsprofileAustralasianBittern.pdfdf. Accessed 19 April 2011.

New South Wales Parks and Wildlife Service. 2011. Threatened Species Information: Little Tern. http://www.environment.nsw.gov.au/resources/nature/tsprofileLittleTern.pdf. Accessed 20 April 2011.

New South Wales Parks and Wildlife Service.2011. Threatened Species Information: Squirrel Glider. http://www.environment.nsw.gov.au/resources/nature/tsprofileSquirrelGlider.pdf. Accessed 14 April 2011.

New South Wales Scientific Committee. 2009. Eastern Osprey Pandion cristatus. Review of current information in NSW. June 2009. Unpublished report arising from the Review of the Schedules of the Threatened Species Conservation Act 1995. NSW Scientific Committee, Hurstville.

Noosa's Native Plants. 2011. Symplocos harroldii. Plant Details. http://www.noosanativeplants.com.au/plants/527/symplocos-harroldii. Accessed 21 April 2011.

Northern Territory Government Parks and Wildlife Commission. 2011. Threatened Species of the Northern Territory: Emu Dromaius novaehollandiae. Department of Natural Resources, Environment and the arts. http://www.nt.gov.au/nreta/wildlife/animals/threatened/pdf/birds/emu_vu.pdf. Accessed 18 April 2011.

Parks and Wildlife Service Tasmania. 2009. Short-Beaked Echidna, Tachyglossus aculeatus. http://

www.parks.tas.gov.au/index.aspx?base=4796. Accessed 15 April 2011.

Pizzey G. 1997. Field Guide to Birds of Australia: The Graham Pizzey and Frank Knight Field Guide. Harper Collins Publishers Pty Limited.

Queensland Government. 2011. Wetlandinfo Species Information Acanthophis antarcticus. Department of Environment and Resource Management.http://www.epa.qld.gov.au/wetlandinfo/site/MappingFandD/WetlandMapsAndData/SummaryInfo/Species/511.jsp?Archive=true. Retrieved April 11 2011.

Queensland Government. 2011. Wetlandinfo Species Information Ornithoptera richmondia. Department of Environment and Resource Management. http://www.epa.qld.gov.au/wetlandinfo/site/factsfigures/FloraAndFauna/Species/2014.f. Retrieved April 8 2011.

Queensland Government. 2011. Wetlandinfo Species Information Sarcochilus fitzgeraldii. Department of Environment and Resource Management. http://www.epa.qld.gov.au/wetlandinfo/site/factsfigures/FloraAndFauna/Species/12658.html. Retrieved April 19 2011.

Queensland Government. 2011. Australian fritillary butterfly. Wildlife and Ecosystems. http://www.derm.qld.gov.au/wildlife-ecosystems/wildlife/az_of_animals/australian_fritillary_butterfly.html. Accessed 14 April 2011.

Queensland Government. 2011. Wetlandinfo Species Information Phaius bernaysii. Department of Environment and Resource Management. http://www.epa.qld.gov.au/wetlandinfo/site/factsfigures/FloraAndFauna/Species/12723.html. Retrieved April 19 2011.

Quirico AL. 1992. New South Wales Flora Online - Pandorea baileyana. http://plantnet.rbgsyd.nsw.gov.au/cgi-bin/NSWfl.pl?page=nswfl&lvl=sp&name=Pandorea~baileyana. Accessed 6 April 2011.

Reeves RR, Dalebout ML, Jefferson TA, Karczmarski L, Laidre K, O'Corry-Crowe G, Rojas-Bracho L, Secchi ER, Slooten E, Smith BD, Wang JY, Zhou K. 2008. Sousa chinensis. International Union for Conservation of Nature (IUCN) Red List of Threatened Species. Version 2010.4 http://www.iucnredlist.org/apps/redlist/details/20424/0. Accessed 6 April 2011.

Richards P. 2011. Bosistoa transversa. New South Wales flora online. http://plantnet.rbgsyd.nsw.gov.au/cgi-bin/NSWfl.pl?page=nswfl&lvl=sp&name=Bosistoa~transversa. Accessed 14 April 2011.

Richmond Birdwing Conservation Network. 2011. Richmond Birdwing Vine: Pararistolochia praevenosa. http://www.richmondbirdwing.org.au/images/Growing%20birdwing%20vines%20-%20Chris%20Hosking.pdf. Accessed 13 April 2011.

Royal Botanic Gardens & Domain Trust. 2011. Profile for Leptospermum luehmannii http://plantnet.rbgsyd.nsw.gov.au/cgi-bin/NSWfl.pl?page=nswfl&lvl=sp&name=Leptospermum~luehmannii. Accessed 26 April 2011.

Sands DPA, New TR. 2002. The Action Plan for Australian Butterflies. Environment Australia, Canberra. http://www.environment.gov.au/biodiversity/threatened/publications/action/butterfly/pubs/butterflies.pdf. Accessed 26 April 2011.

Schulz M, Clague C, Coles R. 2009. Recovery Outlines and Taxon Summaries - Golden-tipped Bat. http://www.environment.gov.au/biodiversity/threatened/publications/action/bats/23.html. Accessed 7 April 2011.

Schulz M. 1999. Relative abundance and other aspects of the natural history of the rare golden-tipped bat, Kerivoula papuensis (Chiroptera: Vespertilionidae). Acta chiropterologica. 1(2): 165-178. http://www.refdoc.fr/Detailnotice?cpsidt=1540709&traduire=en. Accessed 7 April 2011.

Seminoff JA. 2004. Chelonia mydas. International Union for Conservation of Nature (IUCN) Red List of Threatened Species. Version 2010.4. http://www.iucnredlist.org/apps/redlist/details/4615/0. Accessed 14 April 2011.

Sopory A, Hero J-M. 2008. Amphibiaweb - Assa darlingtoni. http://amphibiaweb.org/cgi-bin/amphib_query?query_src=aw_lists_genera_&table=amphib&where-genus=Assa&where-species=darlingtoni. Accessed 14 April 2011.

South West Integrated Flora and Fauna. 2007. Grey Goshawk. http://www.birdlife.org/datazone/speciesfactsheet.php?id=3431","http://www.birdlife.org/datazone/speciesfactsheet.php?id=3431. Accessed 11 April 2010.

South West Integrated Flora and Fauna. 2007. Square-tailed Kite. http://bird.net.au/bird/index.php?title=Square-tailed_Kite. Accessed 12 April 2010.

South West Integrated Flora and Fauna. 2010. Lewin's Rail. http://bird.net.au/bird/index.php?title=Lewin's_Rail. Accessed 7 April 2011.

Starr F, Starr K, Loope L. 2003. Ficus macrophylaa: Moreton Bay Fig. United States Geological Survey - Biological Resources Division. http://www.hear.org/starr/hiplants/reports/pdf/ficus_macrophylla.pdf. Accessed 15 April 2011.

State of Queensland Department of Environment and Resource Management. 2011. Species information – Lilaeopsis brisbanica. Wetland Info. http://www.epa.qld.gov.au/wetlandinfo/site/factsfigures/FloraAndFauna/Flora/IndicatorSpeciesList/18503.html. Accessed 14 April 2011.

State of Victoria, Department of Sustainability and Environment. 2003. Austral Toad flax. Flora and Fauna Guarantee Action Statement. http://www.dse.vic.gov.au/CA256F310024B628/0/76D0A781B2E0FBBDCA2570EC001E3AEE/$File/056+Austral+Toad-flax+1994.pdf. Accessed 14 April 2011.

Stephens K, Mayhew M. 2009. Wetland Info - Species information - Aponogeton elongatus. http://www.epa.qld.gov.au/wetlandinfo/site/factsfigures/FloraAndFauna/Species/21902.html. Accessed 6 April 2011.

Tappin AR. 2011. Aquatic Life: Aponogeton. http://aquaticlife.angfaqld.org.au/Aponogeton.htm. Accessed 21 April 2011.

The Animal Files. 2011. Fleay's Barred Frog. http://www.theanimalfiles.com/amphibians/frogs/fleays_barred_frog.html. Accessed 6 April 2011.

The Australian Reptile Online Database. 2011. Saproscincus rosei, in the Australian Reptile Online Database. http://www.reptilesdownunder.com/arod/reptilia/Squamata/Scincidae/Saproscincus/rosei. Accessed 27 April 2011.

The Royal Botanic Gardens and Domain Trust. 2011. PlantNET - The Plant Information Network System of the Royal Botanic Gardens and Domain Trust, Sydney, Australia. http://plantnet.rbgsyd.nsw.gov.au. Accessed 7 April 2011.

The State of Queensland Department of Environment and Resource Management. 2005. Shorebird Management Strategy Moreton Bay. http://www.derm.qld.gov.au/register/p01627aa.pdf. Accessed 8 June 2011.

The State of Queensland Department of Environment and Resource Management. 2011. Endangered Species: Cascade tree frog. http://www.derm.qld.gov.au/wildlife-ecosystems/wildlife/threatened_plants_and_animals/endangered/cascade_treefrog.html. Accessed 11 April 2011.

The State of Queensland Museum. 2010. Mangrove Challenge. Queensland Museum learning resources. http://www.qm.qld.gov.au/microsites/mangrove/mangroves.asp. Accessed 26 April 2011.

Threatened Species Network. 2011. Australian Threatened Species: Northern Quoll. http://www.environment.gov.au/biodiversity/threatened/publications/pubs/tsd05northern-quoll.pdf. Accessed 27 April 2011.

Toro L. 1999. Chlamydosaurus kingii. James Cook University. http://www.jcu.edu.au/school/tbiol/zoology/herp/Chlamydosauruskingii.PDF. Accessed 14 April 2011.

Viridans Biological Databases. 2011. Brasenia schreberi - Water Shield. http://www.viridans.com/jamp/ptmgrid01pdf.php?specnum=0487&enc=zluchbetgpdqxvhaqg&mdhms=1267713091. Accessed 6 April 2011.

Weiber L. 2008. Flora Profile: Bahr's Scrub Croton. In: Land for Wildlife South East Queensland. 2008. Newsletter of the Land for Wildlife Program South East Queensland. http://www.seqcatchments.com.au/LFW.html. Accessed 26 April 2011.

Weston PH. 1993. New South Wales Flora Online - Papillilabium beckleri. http://plantnet.rbgsyd.nsw.gov.au/cgi-bin/NSWfl.pl?page=nswfl&lvl=sp&name=Papillilabium~beckleri. Accessed 6 April 2011.

Wetlandcare Australia. 2011. Glossy Black-cockatoo. Northern Rivers, Catchment management Authority. http://www.wetlandcare.com.au/Content/articlefiles/674-Glossy%20Black-cockatoo.pdf. Accessed 8 April 2011.

Wikipedia. 2011. Feathertail Glider. http://en.wikipedia.org/wiki/Feathertail_Glider. Accessed 26 April 2011.

Wikipedia. 2011. Pararistolochia praevenosa. http://en.wikipedia.org/wiki/Pararistolochia_praevenosa. Accessed 13 April 2011.

Wilson G. 1991. New South Wales Flora Online - Choricarpia subargentea. http://plantnet.rbgsyd.nsw.gov.au/cgi-bin/NSWfl.pl?page=nswfl&lvl=sp&name=Choricarpia~subargentea. Accessed 6 April 2011.

Winter J, Woinarski J, Aplin K. 2008. Xeromys myoides. In: IUCN 2010. IUCN Red List of Threatened Species. Version 2010.4. www.iucnredlist.org. Accessed 18 April 2011.

Woodside DP. 2000. Feathertail Glider. In: Strahan R (Ed.). 2000. The Mammals Of Australia: Revised Edition. Australia Museum and Reed New Holland.

World Parrot Trust. 2009. Glossy Black Cockatoo (Calyptorhynchus lathami). http://www.parrots.org/index.php/encyclopedia/wildstatus/glossy_black_cockatoo/. Accessed 14 April 2011.

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