

Fisheries - Information Services



Interactions with Threatened, Endangered or Protected Species in South Australian Managed Fisheries – 2009/10, 2010/11 and 2011/12



Angelo Tsolos and Melleessa Boyle

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**SARDI Aquatic Sciences
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February 2013

Report to PIRSA Fisheries and Aquaculture



**Government
of South Australia**

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Reported information collected from South Australian managed fisheries is processed and entered as described in Vainickis (2010).

Definitions and Explanations

Boat day: Each time a licence holder operates their fishing gear it is considered an individual boat day. A morning trip and an evening trip on the same day are 2 boat days. Boat days also accumulate for a change in area, gear and/or target species for that day.

EPBC Act: *Environment Protection and Biodiversity Conservation Act 1999*.

<http://www.environment.gov.au/epbc/index.html>

Fisheries Management Act: *South Australia Fisheries Management Act 2007*.

<http://www.legislation.sa.gov.au/LZ/C/A/Fisheries%20Management%20Act%202007.aspx>

National Parks and Wildlife Act: *South Australian National Parks and Wildlife Act 1972*.

http://www.austlii.edu.au/au/legis/sa/consol_act/npawa1972247/

Man days: the number of individuals fishing on the licence, or in a boat operated by the licensee each day.

MFA: A designated marine fishing area for reporting data. These may vary among fisheries.

PIRSA: Primary Industries and Regions South Australia.

SARDI: South Australian Research and Development Institute.

TEPS: A species classed as threatened, endangered, or protected under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC), *Fisheries Management Act 2001*, or the *National Parks and Wildlife Act 1972*.

TEPS interaction: any physical contact, collision or capture a fisher, boat or fishing gear has with any threatened, endangered or protected species.

The "Other" category includes bite offs, animals circling the boat or interacting with fishing gear, and discovering dead animals whilst in transit.

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Executive Summary

This report updates the 2011 report and documents interactions with threatened, endangered or protected species (TEPS) within South Australian commercial fisheries.

The report was compiled using data submitted to South Australian Research and Development Institute voluntarily by commercial licence holders. The report includes data from three financial years of operation, 2009/10, 2010/11 and 2011/12.

During the reporting period, SARDI was advised of 582 interaction events during fishing operations involving 1,921 animals. Of these interactions, 1,802 animals (94%) were released or escaped, and 119 animals died.

In 2009/10, 80 of the 178 interactions occurred in the Lakes and Coorong Fishery, 77 in the Sardine Fishery, and 12 in the Marine Scalefish Fishery. In 2010/11, 70 of the 172 interactions occurred in the Prawn Fisheries, 52 in the Lakes and Coorong Fishery, and 44 in the Sardine Fishery. In 2011/12, 116 of the 232 interactions occurred in the Prawn Fisheries and 111 in the Sardine Fishery.

Dolphins accounted for 179 of the 823 TEPS encountered in 2009/10, 127 of the 597 TEPS in 2010/11, and 303 of the 501 TEPS in 2011/12.

There were 917 individual pinnipeds involved in interactions; 531 in 2009/10; 381 in 2010/11, and five in 2011/12. The 2009/10 and 2010/11 data are skewed by a large number of seals interacting with fishing gear in the Lakes and Coorong Fishery.

During 2009/10, 282 (34%) of the animals involved in an interaction were caught or entangled during fishing operations. In 2010/11, there were 215 (36%) caught or entangled, and 414 (83%) in 2011/12. "Other" interactions were more prevalent in 2009/10 (538 animals) and in 2010/11 (382 animals).

Over the three year period 97% of the encounters involved trawl or net operations.

In 2009/10, nine dead animals were reported during fishing operations. In 2010/11, 25 animals died during fishing operations, and in 2011/12, 85 animals died during fishing operations.

The accuracy of the data for some fisheries provided in the wildlife interaction logbook is unknown because it has not been validated by fishery-independent means.

Introduction

The Australian Government and the South Australian Government identified the importance of tracking interactions with threatened, endangered or protected species (TEPS) to gain insights into the frequency and severity of interactions that occur with the major South Australian managed fisheries.

The objectives of the *Fisheries Management Act 2007* (SA) are to protect, manage, use and develop the aquatic resources of the State in a manner that is consistent with ecologically sustainable development and, to that end, the following principles apply:

- (a) proper conservation and management measures are to be implemented to protect the aquatic resources of the State from over-exploitation and ensure that those resources are not endangered;
- (b) access to the aquatic resources of the State is to be allocated between users of the resources in a manner that achieves optimum utilisation and equitable distribution of those resources to the benefit of the community;
- (c) aquatic habitats are to be protected and conserved, and aquatic ecosystems and genetic diversity are to be maintained and enhanced;
- (d) recreational fishing and commercial fishing activities are to be fostered for the benefit of the whole community;
- (e) the participation of users of the aquatic resources of the State, and of the community more generally, in the management of fisheries is to be encouraged.

From 1st July 2007, Primary Industries and Regions South Australia Fisheries and Aquaculture implemented new arrangements for reporting interactions with TEPS in all commercial fisheries. These arrangements also form part of the requirements under Section 71 of the *Fisheries Management Act 2007* (SA) to avoid capturing or harming any protected species encountered during any fishing operations. All licence holders have an obligation under Part 5 Division 2 of the *National Parks and Wildlife Act 1972* (SA) relating to restrictions on the taking of protected animals within the confines of a national park or sanctuary. The *National Parks and Wildlife Act 1972* (SA) defines “protected animals” as:

- (a) any mammal, bird or reptile indigenous to Australia; or
- (b) any migratory mammal, bird or reptile that periodically or occasionally migrates to, and lives in, Australia; or
- (c) any animal of a species referred to in Schedule 7, 8 or 9; or

(d) any animal of a species declared by regulation to be a species of protected animals,

but does not include animals of the species referred to in Schedule 10 or any animals declared by regulation to be unprotected.

In addition to these Acts, the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC) requires commercial operators to report any action that results in the death, injury or movement of any individuals of a species covered by Part 13 of the EPBC Act to the Commonwealth Department of Sustainability Water, Population and Communities (SEWPAC).

Schedules 7 through 10 of the *National Parks and Wildlife Act 1972* (SA) are listed in Appendices 1 to 3 of this report, while the species protected under the EPBC Act are listed in Appendix 4. These include all seabirds, marine reptiles, marine mammals, and some protected marine fish species, including great white sharks and syngnathids (seahorses, sea dragons and pipefish). Additional species protected under the *Fisheries Management Act 2007* (SA) are listed in Appendix 5.

This document is the third report on interactions within South Australia's managed fisheries covering the period 1 July 2009 to 30 June 2012 and provides a summary of interaction information voluntarily submitted to SARDI by the commercial fishing sectors.

The aims of the report are to:

- Gain a better understanding of the nature and extent of wildlife interactions in commercial fishing activities;
- Assist in the development of effective measures and management policies that reduce or avoid interactions within the commercial fishing sectors; and
- Assist government and industry in developing the data collection and reporting standards required to meet legislative obligations through accurate monitoring and reporting of interactions throughout the commercial fishing industry.

The document is divided into five sections: Section 1 provides interaction information by fishery and method, Section 2, interactions by TEPS group, Section 3, interactions by date (month and year), Section 4, interactions by location, and Section 5, interactions by interaction type.

Section 1: Wildlife interactions by fishery and method

From July 2009 to June 2012, commercial operators reported 582 interactions with 1,921 individuals of listed threatened, endangered or protected species (TEPS). Table 1 shows the number of interactions and the number of animals involved by fishery by financial year. Table 2 shows the number of interactions and the number of animals involved by gear type by financial year. Tables 3 through 5 show the interactions by fishing method for each period and Tables 6 through 12 the interactions by fishery and fishing method for each period. Additional information is provided where a fishery has had interactions involving more than one method. For a full list of fishing methods used in this section refer to Appendix 6.

In 2009/10, 80 of the 178 interactions occurred in the Lakes and Coorong Fishery, 77 in the Sardine Fishery, and 12 in the Marine Scalefish Fishery. In 2010/11, 70 of the 172 interactions occurred in the Prawn Fisheries, 52 in the Lakes and Coorong Fishery, and 44 in the Sardine Fishery. In 2011/12, 116 of the 232 interactions occurred in the Prawn Fisheries, and 111 in the Sardine Fishery. The information emphasises a large number of seals interacting with fishing gear over an extended period in the Lakes and Coorong Fishery during 2009/10 and 2010/11 (Table 1).

Table 1: The number of interactions and animals involved by fishery by financial year.

Fishery	2009/10		2010/11		2011/12	
	Interactions	Animals Involved	Interactions	Animals Involved	Interactions	Animals Involved
Abalone Fisheries	0	0	1	1	2	2
Blue Crab Fishery	1	1	0	0	0	0
Charter Boat Fishery	1	1	1	1	0	0
Lakes And Coorong Fishery	80	582	52	379	0	0
Marine Scalefish Fishery	12	24	4	4	3	4
Miscellaneous Fisheries	0	0	0	0	0	0
Prawn Fisheries	7	20	70	82	116	184
River Fishery	0	0	0	0	0	0
Rock Lobster Fisheries	0	0	0	0	0	0
Sardine Fishery	77	195	44	130	111	311
Total	178	823	172	597	232	501

In total, 97% of the animals encountered over the three year period were involved in interactions during trawl or net operations, with 40% of those interactions involving purse seine nets and 33% involving prawn trawl nets (Table 2).

Section 1: Wildlife Interactions by Fishery and Method

Table 2: The number of interactions and animals involved by gear type by financial year.

Gear		2009/10		2010/11		2011/12	
Type	Code	Interactions	Animals Involved	Interactions	Animals Involved	Interactions	Animals Involved
Nets							
Drum Net	C	1	20	0	0	0	0
Gill Net (Small Mesh)	E	0	0	1	6	0	0
Gill Net (Large Mesh)	F	3	8	0	0	0	0
Hauling Net (Small Mesh)	H	1	1	0	0	0	0
Haul Net (Floating Gar Net)	HNF	5	15	1	1	0	0
Haul Net (Sinking Mixed Net)	HNS	5	7	0	0	1	2
Hauling Net (Large Net)	I	3	40	0	0	0	0
Ring Net	K	72	513	51	373	0	0
Purse Seine	PS	77	195	44	130	111	311
Prawn Trawl Net	PTN	7	20	67	77	116	184
Total		174	819	164	587	228	497
Pots							
Crab Pot	CP	1	1	0	0	1	0
Lobster Pot	LP	0	0	0	0	0	0
Total		1	1	0	0	1	0
Lines							
Handline	HL	2	2	1	1	0	0
Inshore Scale Fishing	IS	1	1	1	1	0	0
Offshore Scale Fishing	OS	0	0	0	0	0	0
Long Line	LL	0	0	2	2	1	1
Poles/Rod And Line	PO	0	0	0	0	0	0
Total		3	3	4	4	1	1
Other							
Diving	D	0	0	1	1	2	2
Non Applicable	NVA	0	0	3	5	0	0
Total		0	0	4	6	2	2
Total		178	823	172	597	232	501

The majority of animals involved in an interaction during the reporting period were cetaceans and pinnipeds. Of the 823 animals involved in an interaction during 2009/10, 22% were cetaceans (179 dolphins) and 65% pinnipeds (531 seals) (Table 3). During 2010/11, 21% of the total animals involved in an interaction were cetaceans (127 dolphins) and 64% were pinnipeds (381 seals) (Table 4), and in 2011/12, 60% of the total animals involved in an interaction were cetaceans (303 dolphins) and 38% were sharks and syngnathids (190 animals) (Table 5).

Section 1: Wildlife Interactions by Fishery and Method

Table 3: TEPS interactions by taxonomic group by fishing method in South Australian commercial fisheries (all fisheries combined) 2009/10.

Taxonomic Group	TEPS	# of Animals	Gear	Nature of Interaction				Status			Fate			
				Caught	Entanglement	Impact	Other	Alive	Alive / Injured	Dead	Released	Retained	Discarded	Other
Birds	Cormorant	14	HNF	14				13		1	13		1	
	Cormorant	6	HNS	6				6			6			
	Pacific Gull	1	HL	1				1			1			
	Total	21		21				20		1	20		1	
Reptiles	Freshwater Turtle	20	C	20				20			20			
	Freshwater Turtle	8	F	8				8			8			
	Freshwater Turtle	40	I	40				40			40			
	Leatherback Turtle	1	CP		1			1			1			
	Turtle	1	HNS	1				1			1			
	Total	70		69	1			70			70			
Cetaceans	Dolphin	136	PS	111	2		23	132	1	3	133	1	2	
	Common Dolphin	43	PS	43				41		2	41	2		
	Total	179		154	2		23	173	1	5	174	3	2	
Pinnipeds	Common Seal	2	PTN			2				2			2	
	Common Seal	14	PS	14				14			14			
	New Zealand Fur Seal	1	HNF	1				1			1			
	New Zealand Fur Seal	1	H				1	1						1
	New Zealand Fur Seal	513	K				513	513						513
	Total	531		15		2	514	529		2	15		2	514
Fish	Great White Shark	1	IS			1		1						1
	Pipefish	5	PTN	5				4		1	4		1	
	Sea Dragon	13	PTN	13				13			13			
	Great White Shark	2	PS	2				2			2			
	Great White Shark	1	HL				1	1						1
	Total	22		20		1	1	21		1	19		1	2
Total		823		279	3	3	538	813	1	9	298	3	6	516

Section 1: Wildlife Interactions by Fishery and Method

Table 4: TEPS interactions by taxonomic group by fishing method in South Australian commercial fisheries (all fisheries combined) 2010/11.

Taxonomic Group	TEPS	# of Animals	Gear	Nature of Interaction				Status			Fate			
				Caught	Entanglement	Impact	Other	Alive	Alive / Injured	Dead	Released	Retained	Discarded	Other
Birds	Australasian Gannet	1	IS		1			1			1			
	Total	1			1			1			1			
Cetaceans	Dolphin	1	HNF	1				1			1			
	Dolphin	72	PS	69	3			64	1	7	65	7		
	Common Dolphin	54	PS	54				54			54			
	Total	127		124	3			119	1	7	120	7		
Pinnipeds	Australian Fur Seal	1	PTN	1				1			1			
	Common Seal	1	PS	1					1		1			
	New Zealand Fur Seal	6	E				6	6						6
	New Zealand Fur Seal	373	K				373	373						373
	Total	381		2			379	380	1		2			379
Fish	Great White Shark	1	D				1	1						1
	Great White Shark	1	HL				1	1						1
	Great White Shark	2	LL	1	1			1		1	1		1	
	Great White Shark	3	PS	2			1	3			2			1
	Common Seadragon	1	PTN	1						1			1	
	Leafy Seadragon	1	PTN	1				1			1			
	Pipefish	17	PTN	17				16		1	16		1	
	Pipehorse	5	PTN	5						5			5	
	Potbelly Seahorse	1	PTN	1				1			1			
	Seahorse	56	PTN	56				46		10	46		10	
Total	88		84	1		3	70		18	67		18	3	
Total		597		210	5		382	570	2	25	190	7	18	382

Table 5: TEPS interactions by taxonomic group by fishing method in South Australian commercial fisheries (all fisheries combined) 2011/12.

Taxonomic Group	TEPS	# of Animals	Gear	Nature of Interaction				Status			Fate			
				Caught	Entanglement	Impact	Other	Alive	Alive / Injured	Dead	Released	Retained	Discarded	Other
Birds	Albatross	1	LL		1					1				1
	Cormorant	2	HNS	2				2			2			
	Total	1		2	1			2		1	2		1	
Cetaceans	Dolphin	218	PS	139	8		71	211	2	5	213	4	1	
	Common Dolphin	85	PS	71	1		13	84	1		85			
	Total	303		210	9		84	295	3	5	298	4	1	
Pinnipeds	Common Seal	5	PS	4			1	5			4			1
	Total	5		4			1	5			4			1
Fish	Great White Shark	1	CP		1			1			1			
	Great White Shark	2	D				2	2						2
	Great White Shark	3	PS	3				3			3			
	Great White Shark	1	PTN	1					1		1			
	Common Seadragon	3	PTN	3				3			3			
	Pipefish	69	PTN	68	1			18		51	18		51	
	Pipehorse	24	PTN	24				14		10	14		10	
	Seahorse	87	PTN	87				69		18	69		18	
Total	190		186	2		2	110	1	79	109		79	2	
Total		501		402	12		87	412	4	85	413	4	81	3

1.1 Abalone Fishery

The Abalone Fishery began in 1964. The two primary species of abalone landed from South Australian waters are blacklip (*Haliotis rubra*) and greenlip (*Haliotis laevigata*). The fishery is divided into three geographic zones (fisheries): Southern, Central, and Western. There are 35 licence holders in the fishery, six each in the Central and Southern Zones, and 23 in the Western Zone (Knight et al. 2012).

The combined Abalone Fishery, across all zones, undertook 2,031 dives in 2009/10, 2,037 dives in 2010/11, and 2,026 dives in 2011/12.

The Abalone Fishery reported three interactions with a TEPS during the reporting periods. One occurred in 2010/11 and two in 2011/12. All three interactions involved sightings of great white sharks (Table 6).

Table 6: TEPS interactions in the Abalone Fishery in 2009/10, 2010/11 and 2011/12.

Year	Effort (Dives)	TEPS	# of Animals	Gear	Nature of Interaction				Status			Fate			
					Caught	Entanglement	Impact	Other	Alive	Alive / Injured	Dead	Released	Retained	Discarded	Other
2009/10	2,031														
		No Data Reported	0												
2010/11	2,037	Great White Shark	1	D				1	1						1
		Total	1					1	1						1
2011/12	2,026	Great White Shark	2	D				2	2						2
		Total	2					2	2						2

1.2 Blue Crab Fishery

In 1997, a limited-entry Blue Crab Fishery was created based on historical catches. The Blue Crab industry in South Australia is a single species (*Portunus armatus*) fishery, although other species may also be landed as by-product e.g. spider, velvet and rock crabs. The industry is divided into three geographic zones; Spencer Gulf, West Coast and Gulf St. Vincent, and comprises two separate sectors; the Pot Fishery and Marine Scalefish Fishery. The commercial pot fishers licence conditions only allow them to harvest blue crabs, whereas the Marine Scalefish fishers may also target other species normally taken in the Marine Scalefish Fishery (Vainickis 2010). Note: Any interactions involving the Marine Scalefish fishers are included in the Marine Scalefish Fishery section (1.6).

Section 1: Wildlife Interactions by Fishery and Method

The Blue Crab Fishery conducted 1,144 boat days fishing in 2009/10, 1,059 boat days in 2010/11, and 1,086 boat days in 2011/12.

The Blue Crab Fishery has reported one interaction, a leatherback turtle, during the reporting periods. The interaction occurred in 2009/10 (Table 7).

Table 7: TEPS interactions in the Blue Crab Fishery in 2009/10, 2010/11 and 2011/12.

Year	Effort (Boat Days)	TEPS	# of Animals	Gear	Nature of Interaction				Status			Fate			
					Caught	Entanglement	Impact	Other	Alive	Alive / Injured	Dead	Released	Retained	Discarded	Other
2009/10	1,144	Leatherback Turtle	1	CP		1			1			1			
		Total	1				1					1			
2010/11	1,059	<i>No Data Reported</i>	<i>0</i>												
2011/12	1,086	<i>No Data Reported</i>	<i>0</i>												

1.3 Charter Boat Fishery

The Charter Boat Fishery has 109 licence holders. Of these, 77 actively participate in the fishery operating from 38 ports. The fishery operates from the Western Australian border (129° E longitude) to the Victorian border (141° E longitude), a total of 3,820 kilometres of coastline (Vainickis 2010).

During 2009/10, the Charter Boat Fishery conducted 3,552 fishing trips, 3,323 trips during 2010/11, and 3,560 trips during 2011/12.

The Charter Boat Fishery has reported interactions with two TEPS over the three financial year periods (Table 8). One interaction involved a great white shark in 2009/10 and another involved an Australian gannet in 2010/11. No animals were harmed during the encounters.

Note: in this fishery the fishing methods are reported by activity code (inshore scale fishing, offshore scale fishing) but not by any particular method (e.g. hand lines, squid jigging, etc).

Section 1: Wildlife Interactions by Fishery and Method

Table 8: TEPS interactions in the Charter Boat Fishery in 2009/10, 2010/11 and 2011/12.

Year	Effort (Trips)	TEPS	# of Animals	Gear	Nature of Interaction				Status			Fate				
					Caught	Entanglement	Impact	Other	Alive	Alive / Injured	Dead	Released	Retained	Discarded	Other	
2009/10	3,552	Great White Shark	1	IS			1		1							1
		Total	1				1		1							1
2010/11	3,323	Australasian Gannet	1	IS		1			1			1				
		Total	1				1		1			1				
2011/12	3,560															
		No Data Reported	0													

1.4 Lakes and Coorong Fishery

The Lakes and Coorong Fishery is a multispecies, multi-gear fishery, encompassing Lake Albert and Lake Alexandrina, the Coorong, and the adjacent ocean beach (Goolwa to Kingston in the South East).

There are 36 licence holders within the fishery (Knight et al. 2012).

During 2009/10, the Lakes and Coorong Fishery spent 6,108 boat days actively fishing using a number of different gear types. The fishery spent 6,033 boat days fishing during 2009/10, and 6,316 boat days fishing during 2011/12.

In 2009/10, the Lakes and Coorong Fishery reported 80 interactions involving 582 animals (Tables 1 and 9). The majority of interactions (73) involved New Zealand fur seals interacting with fishing gear. The remaining seven interactions involved freshwater turtles captured at the Narrung Narrows, a narrow channel joining Lake Albert and Lake Alexandrina. None of the animals died during the interactions.

During 2010/11, the fishery reported 52 interactions involving 379 animals (Tables 1 and 9). All 52 interactions involved New Zealand fur seals interacting with fishing gear. There were no reported interactions in 2011/12.

Section 1: Wildlife Interactions by Fishery and Method

Table 9: TEPS interactions in the Lakes and Coorong Fishery in 2009/10, 2010/11 and 2011/12.

Year	Effort (Boat Days)	TEPS	# of Animals	Gear	Nature of Interaction				Status			Fate				
					Caught	Entanglement	Impact	Other	Alive	Alive / Injured	Dead	Released	Retained	Discarded	Other	
2009/10	6,108	Freshwater Turtle	20	C	20				20			20				
		Freshwater Turtle	8	F	8				8			8				
		Freshwater Turtle	40	I	40				40			40				
		New Zealand Fur Seal	1	H				1	1							1
		New Zealand Fur Seal	513	K				513	513							513
		Total	582		68			514	582			68				514
2010/11	6,033	New Zealand Fur Seal	6	E				6	6						6	
		New Zealand Fur Seal	373	K				373	373						373	
		Total	379					379	379						379	
2011/12	6,316	<i>No Data Reported</i>	<i>0</i>													

1.5 Marine Scalefish Fishery

The Marine Scalefish Fishery began in 1836 and is the oldest fishery in the State. The fishery is a multi-gear, multi-species fishery using around 27 different devices and methods, harvesting 71 species.

At 1 November 2011, 342 licence holders were operating in the fishery. For more information refer to the [Draft Commercial Marine Scalefish Fishery Management Plan June 2012](#).

During 2009/10, the Marine Scalefish Fishery spent 33,533 boat days actively fishing using a number of different gear types. In 2010/11 the fishery spent 32,233 boat days fishing, and in 2011/12, 33,445 boat days fishing.

In 2009/10, the fishery reported 12 interactions with 24 animals; one cormorant was reported as deceased (Tables 1 and 10). One interaction had been reported with a “turtle”. The species of turtle was unknown. During 2010/11, the fishery reported four interactions with four animals, a dolphin and three great white sharks; one cormorant was reported as deceased, and in 2011/12, the fishery reported three interactions with four animals, an albatross, two cormorants and a great white shark (Tables 1 and 10).

Section 1: Wildlife Interactions by Fishery and Method

Table 10: TEPS interactions in the Marine Scalefish Fishery in 2009/10, 2010/11 and 2011/12.

Year	Effort (Boat Days)	TEPS	# of Animals	Gear	Nature of Interaction				Status			Fate			
					Caught	Entanglement	Impact	Other	Alive	Alive / Injured	Dead	Released	Retained	Discarded	Other
2009/10	33,533	Pacific Gull	1	HL	1				1			1			
		Cormorant	14	HNF	14				13		1	13		1	
		Cormorant	6	HNS	6				6			6			
		New Zealand Fur Seal	1	HNF	1				1			1			
		Turtle	1	HNS	1				1			1			
		Great White Shark	1	HL				1	1						1
		Total	24		23			1	23		1	22		1	1
2010/11	32,233	Dolphin	1	HNF	1				1			1			
		Great White Shark	1	HL				1	1					1	
		Great White Shark	2	LL	1	1			1	1	1	1		1	
		Total	4		2	1		1	3		1	2		1	1
2011/12	33,445	Albatross	1	LL		1					1			1	
		Cormorant	2	HNS	2				2			2			
		Great White Shark	1	CP		1			1			1			
		Total	4		2	2			3		1	3		1	

1.6 Prawn Fishery

The Prawn Fishery are divided into three separate fisheries; the West Coast Fishery, Spencer Gulf Fishery and Gulf St. Vincent Fishery. These fisheries, established in 1968, harvest western king prawns (*Penaeus (Melicertus) latisulcatus*), and are the only single species prawn fisheries in Australia. In terms of fleet size, the West Coast Fishery is the smallest of the three fisheries, with only three vessels. The Spencer Gulf Fishery has 39 vessels, and the Gulf St. Vincent Fishery has 10 vessels (Knight et al. 2012).

During 2009/10, the combined Prawn Fishery, across all zones, conducted 20,111 trawl shots, in 2010/11, 20,101 trawl shots, and in 2011/12, 21,324 trawl shots.

The Prawn Fishery reported 193 interactions with 286 animals in the three financial years; seven interactions with 20 animals in 2009/10, 70 interactions with 82 animals in 2010/11, and 116 interactions with 184 animals in 2011/12 (Tables 1 and 11). Almost all of the interactions have involved syngnathids (pipefish, seahorses, sea dragons) (Table 11).

Section 1: Wildlife Interactions by Fishery and Method

Table 11: TEPS interactions in the Prawn Fishery in 2009/10, 2010/11 and 2011/12.

Year	Effort (Trawl Shots)	TEPS	# of Animals	Gear	Nature of Interaction				Status			Fate			
					Caught	Entanglement	Impact	Other	Alive	Alive / Injured	Dead	Released	Retained	Discarded	Other
2009/10	20,111	Pipefish	5	PTN	5				4		1	4		1	
		Sea Dragon	13	PTN	13				13			13			
		Common Seal	2	PTN			2				2			2	
		Total	20		18		2		17		3	17		3	
2010/11	20,101	Australian Fur Seal	1	PTN	1				1			1			
		Common Sea Dragon	1	PTN	1						1			1	
		Leafy Sea Dragon	1	PTN	1				1			1			
		Pipefish	17	PTN	17				16		1	16		1	
		Pipehorse	5	PTN	5						5			5	
		Potbelly Seahorse	1	PTN	1				1			1			
		Seahorse	56	PTN	56				46		10	46		10	
Total	82		82				65		17	65		17			
2011/12	21,324	Common Sea Dragon	3	PTN	3				3			3			
		Great White Shark	1	PTN	1					1		1			
		Pipefish	69	PTN	68	1			18		51	18		51	
		Pipehorse	24	PTN	24				14		10	14		10	
		Seahorse	87	PTN	87				69		18	69		18	
		Total	184		183	1			104	1	79	105		79	

1.7 River Fishery

The River Fishery is a multispecies, multi-gear fishery, encompassing the River Murray and its backwaters.

There are 6 licence holders within the River Fishery (Knight et al. 2012).

The River Fishery did not report any interactions with a TEPS during the past three financial years.

1.8 Rock Lobster Fishery

The Rock Lobster (*Jasus edwardsii*) Fishery is a single species fishery divided into two management zones (fisheries): Northern and Southern. The Northern Zone encompasses a stretch of coastline in excess of 3,700 km, including all waters adjacent to South Australia west of the River Murray mouth to the Western Australian border, from the low water mark out to 200 nautical miles. The Southern Zone encompasses all remaining state waters along a much smaller, yet more productive stretch of coastline of about 425 km. The Southern Zone has 181 licence holders and operates from October to May, whilst the Northern Zone has 68 licence holders and operates from November to May (Knight et al. 2012). The two zones are managed as separate fisheries.

The Northern Zone licensed operators conducted 350,908 lobster pot lifts during 2009/10, 289,995 pot lifts during 2010/11, and 287,354 pot lifts during 2011/12. The Southern Zone Fishery conducted 2,049,961 pot lifts during 2009/10, 1,321,654 pot lifts during 2010/11, and 1,284,792 pot lifts during 2011/12.

The fishery did not report any interactions with a TEPS during the reporting periods.

1.9 Sardine Fishery

The Sardine (*Sardinops sagax*) Fishery is part of the Marine Scalefish Fishery. It is a single species fishery that commenced in 1991. The fishery operates from the Western Australian to the Victorian borders.

There is a range of information collected on TEPS interactions in the fishery. Information is collected through:

1. The independent observer program undertaken by a PIRSA contractor,
2. The Wildlife Interaction Identification and Logbook, and
3. The SARDI South Australian Sardine Fishery Research Logbook.

The *Code of Practice for the Mitigation of Interactions of the South Australian Sardine Fishery with Threatened, Endangered and Protected Species* (The Code) aims to mitigate operational interactions. The Code is understood, and supported by all licence holders in the fishery. The Code and observer program have been effective in reducing mortalities and rates of interaction in the fishery. The operational interactions of the South Australian Sardine Fishery with dolphins are considered in Ward et al (2012).

There are 14 licences in the Sardine Fishery (Knight et al. 2012).

In 2009/10, the Sardine Fishery conducted 1,067 purse seine shots, 1,011 in 2010/11, and 1,113 in 2011/12.

In 2009/10, the Sardine Fishery reported 77 separate interactions involving 195 animals (Tables 1 and 12). Of these, 190 animals were released or escaped alive and five died. During 2010/11, the fishery reported 44 interactions with 130 animals, 126 of which were caught within the fishing gear used (Tables 1 and 12). Seven animals died during the period. During 2011/12, there were 111 reported interactions involving 311 animals, five dolphins died (Tables 1 and 12).

Section 1: Wildlife Interactions by Fishery and Method

Table 12: TEPS interactions in the Sardine Fishery in 2009/10, 2010/11 and 2011/12.

Year	Effort (Shots)	TEPS	# of Animals	Gear	Nature of Interaction				Status			Fate			
					Caught	Entanglement	Impact	Other	Alive	Alive / Injured	Dead	Released	Retained	Discarded	Other
2009/10	1,067	Dolphin	136	PS	111	2		23	132	1	3	133	1	2	
		Common Dolphin	43	PS	43				41		2	41	2		
		Common Seal	14	PS	14				14			14			
		Great White Shark	2	PS	2				2			2			
		Total	195		170	2		23	189	1	5	190	3	2	
2010/11	1,011	Dolphin	72	PS	69	3			64	1	7	65	7		
		Common Dolphin	54	PS	54				54			54			
		Common Seal	1	PS	1					1		1			
		Great White Shark	3	PS	2			1	3			2			1
		Total	130		126	3		1	121	2	7	122	7		1
2011/12	1,113	Dolphin	218	PS	139	8		71	211	2	5	213	4	1	
		Common Dolphin	85	PS	71	1		13	84	1		85			
		Common Seal	5	PS	4			1	5			4			1
		Great White Shark	3	PS	3				3			3			
		Total	311		217	9		85	303	3	5	305	4	1	1

Section 2: Wildlife interactions by species group

Cetaceans and pinnipeds accounted for 79% of the 1,921 animals involved in the 582 interactions during the reporting period. Cetaceans (609 animals) featured in 210 of the 582 interactions, and pinnipeds (917 animals) featured in 143 interactions (Tables 13, 14 and 15). The pinniped data are skewed due to a large number of animals interacting with fishing gear in the Lakes and Coorong Fishery over an extended period during 2009/10 and 2010/11 (Tables 13 and 14).

Table 13 shows pinnipeds were involved in 85 interactions and accounted for 65% of the TEPS involved in the 178 interactions in 2009/10, followed by cetaceans (22%), reptiles (9%), fish (3%) and seabirds (3%).

During those interactions, 3% of the cetaceans, 5% of the seabirds and 5% of the fish died.

Table 13: TEPS interactions by species group in 2009/10.

TEPS	# of Interactions	# of Animals	Nature of Interaction				Status			Fate				
			Caught	Entanglement	Impact	Other	Alive	Alive / Injured	Dead	Released	Retained	Discarded	Other	
Seabirds														
Cormorant	8	20	20				19		1	19			1	
Pacific Gull	1	1	1				1			1				
Total	9	21	21				20		1	20			1	
Reptiles														
Freshwater Turtle	7	68	68				68			68				
Leatherback Turtle	1	1		1			1			1				
Turtle	1	1	1				1			1				
Total	9	70	69	1			70			70				
Cetaceans														
Common Dolphin	19	43	43				41		2	41	2			
Dolphin	46	136	111	2		23	132	1	3	133	1	2		
Total	65	179	154	2		23	173	1	5	174	3	2		
Pinniped														
Common Seal	11	16	14		2		14		2	14		2		
New Zealand Fur Seal	74	515	1			514	515			1			514	
Total	85	531	15		2	514	529		2	15		2	514	
Fish														
Pipefish	4	5	5				4		1	4		1		
Common Sea Dragon	2	13	13				13			13				
Great White Shark	4	4	2		1	1	4			2			2	
Total	10	22	20		1	1	21		1	19		1	2	
Total	178	823	279	3	3	538	813	1	9	298	3	6	516	

Section 2: Wildlife Interactions by Species Group

In 2010/11, pinnipeds were the highest representation with 381 animals involved in 54 interactions (Table 14). This accounted for 64% of the animals involved in the 172 encounters, followed by cetaceans (21%), fish (15%) and seabirds (<1%).

During 2010/11, 20% of the fish and 6% of the cetaceans involved in an interaction died.

Table 14: TEPS interactions by species group in 2010/11.

TEPS	# of Interactions	# of Animals	Nature of Interaction				Status			Fate			
			Caught	Entanglement	Impact	Other	Alive	Alive / Injured	Dead	Released	Retained	Discarded	Other
Seabirds													
Australasian Gannet	1	1		1			1				1		
Total	1	1		1			1				1		
Cetaceans													
Common Dolphin	13	54	54				54				54		
Dolphin	28	73	70	3			65	1	7	66	7		
Total	41	127	124	3			119	1	7	120	7		
Pinniped													
Australian Fur Seal	1	1	1				1				1		
Common Seal	1	1	1					1			1		
New Zealand Fur Seal	52	379				379	379						379
Total	54	381	2			379	380	1		2			379
Fish													
Pipefish	16	17	17				16		1	16		1	
Pipehorse	5	5	5						5			5	
Potbelly Seahorse	1	1	1				1			1			
Seahorse	45	56	56				46		10	46		10	
Common Sea Dragon	1	1	1						1			1	
Leafy Sea Dragon	1	1	1				1			1			
Great White Shark	7	7	3	1		3	6		1	3		1	3
Total	76	88	84	1		3	70		18	67		18	3
Total	172	597	210	5		382	570	2	25	190	7	18	382

In 2011/12, 303 cetaceans were involved in 104 interactions (Table 15). This accounted for 60% of the animals involved in the 232 encounters, followed by fish (38%), pinnipeds (1%) and seabirds (<1%).

During 2011/12, 42% of the fish, 33% of the seabirds and 2% of the cetaceans involved in an interaction died.

Section 2: Wildlife Interactions by Species Group

Table 15: TEPS interactions by species group in 2011/12.

TEPS	# of Interactions	# of Animals	Nature of Interaction				Status			Fate			
			Caught	Entanglement	Impact	Other	Alive	Alive / Injured	Dead	Released	Retained	Discarded	Other
Seabirds													
Albatross	1	1		1				1				1	
Cormorant	1	2	2				2			2			
Total	2	3	2	1			2		1	2		1	
Cetaceans													
Common Dolphin	32	85	71	1		13	84	1		85			
Dolphin	72	218	139	8		71	211	2	5	213	4	1	
Total	104	303	210	9		84	295	3	5	298	4	1	
Pinniped													
Common Seal	4	5	4			1	5			4			1
Total	4	5	4			1	5			4			1
Fish													
Pipefish	26	69	68	1			18		51	18		51	
Pipehorse	17	24	24				14		10	14		10	
Seahorse	70	87	87				69		18	69		18	
Common Sea Dragon	2	3	3				3			3			
Great White Shark	7	7	4	1		2	6	1		5			2
Total	122	190	186	2		2	110	1	79	109		79	2
Total	232	501	402	12		87	412	4	85	413	4	81	3

During the three periods, 427 (70%) of the 609 dolphins and 22 (2%) of the 917 pinnipeds involved in interactions were not reported to a particular species. “Dolphins” and “common seals” accounted for 449 (~23%) of the 1,921 animals involved in the encounters. These animals could not be further identified from the information provided.

Section 3: Wildlife interactions by month

During the period from July 2009 to June 2012, the number of animals involved in interactions was highest from January to September of 2010 with 210 interactions involving 1,150 animals (Figure 1). The majority of these interactions (124) were reported by one commercial fisher operating in the Lakes and Coorong Fishery and involved New Zealand fur seals interacting with fishing gear. Figures 2 through 6 show the number of animals involved in interactions by species group.

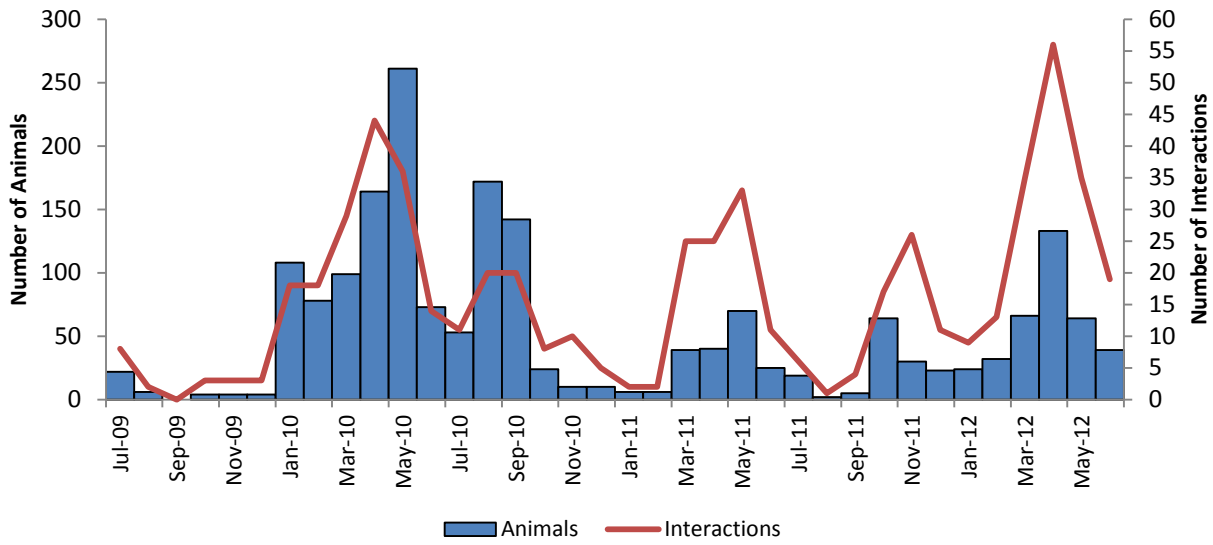


Figure 1: The total number of interactions and animals by month.

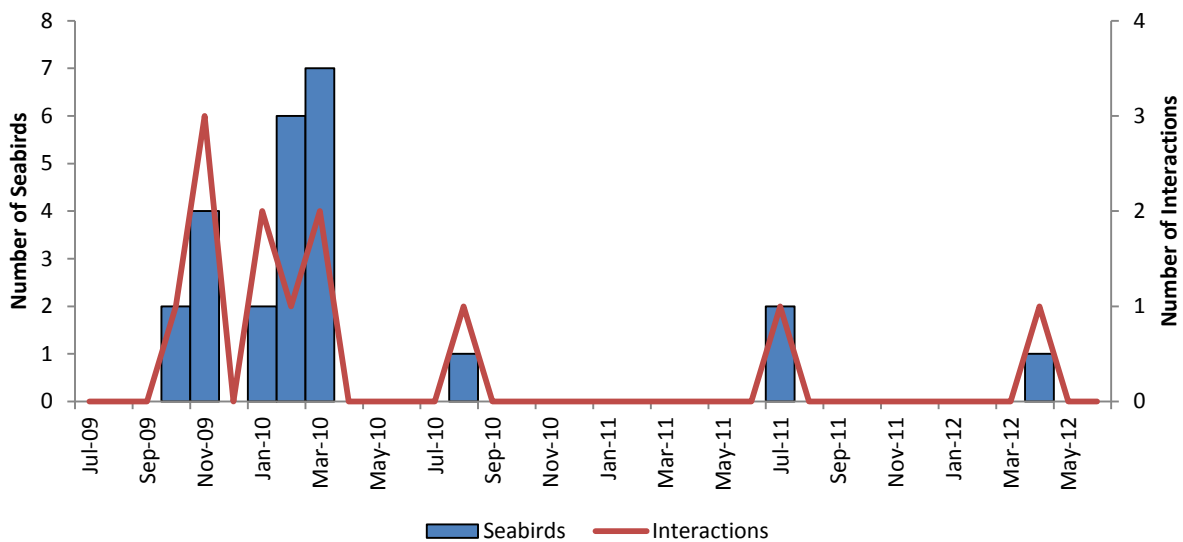


Figure 2: The number of seabirds involved in interactions and the number of interactions by month.

Section 3: Wildlife Interactions by Month

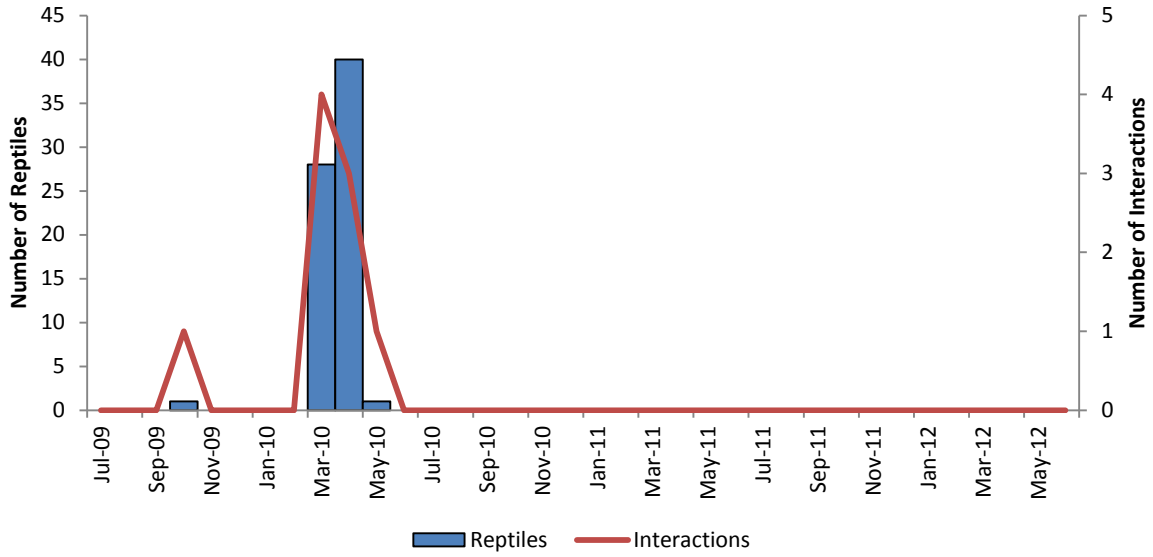


Figure 3: The number of reptiles involved in interactions and the number of interactions by month.

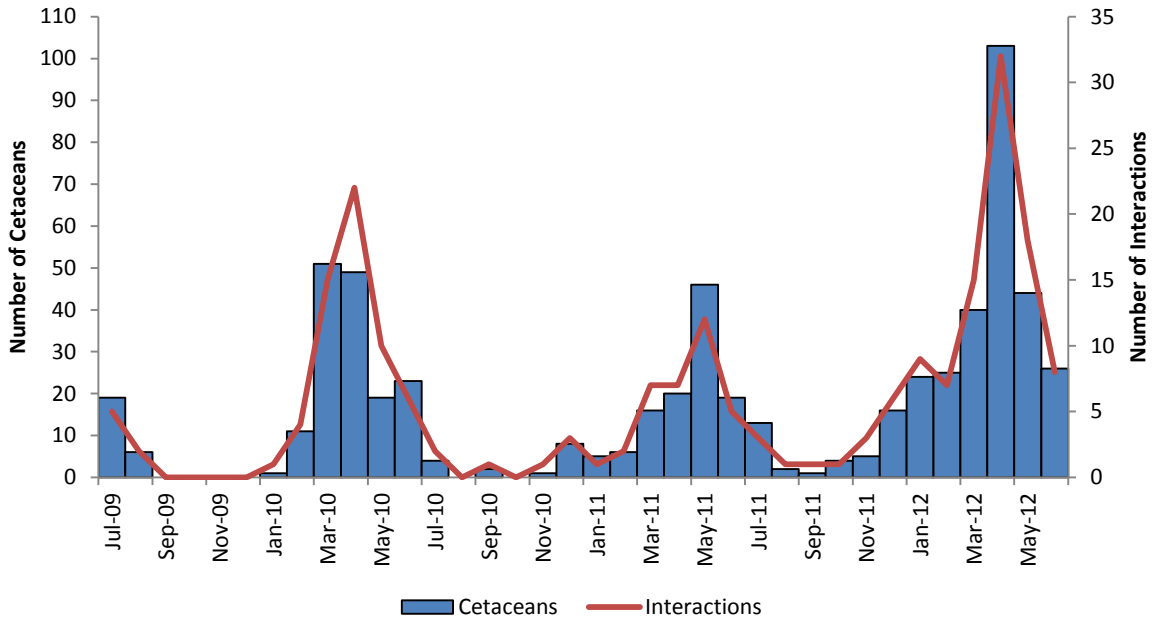


Figure 4: The number of cetaceans involved in interactions and the number of interactions by month.

Section 3: Wildlife Interactions by Month

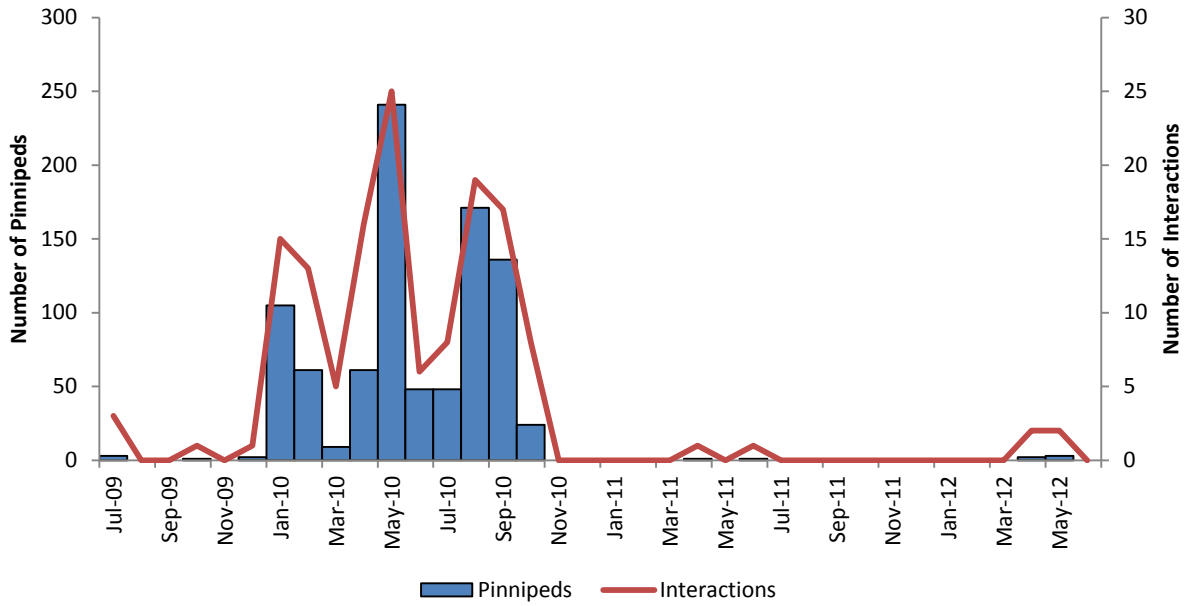


Figure 5: The number of pinnipeds involved in interactions and the number of interactions by month.

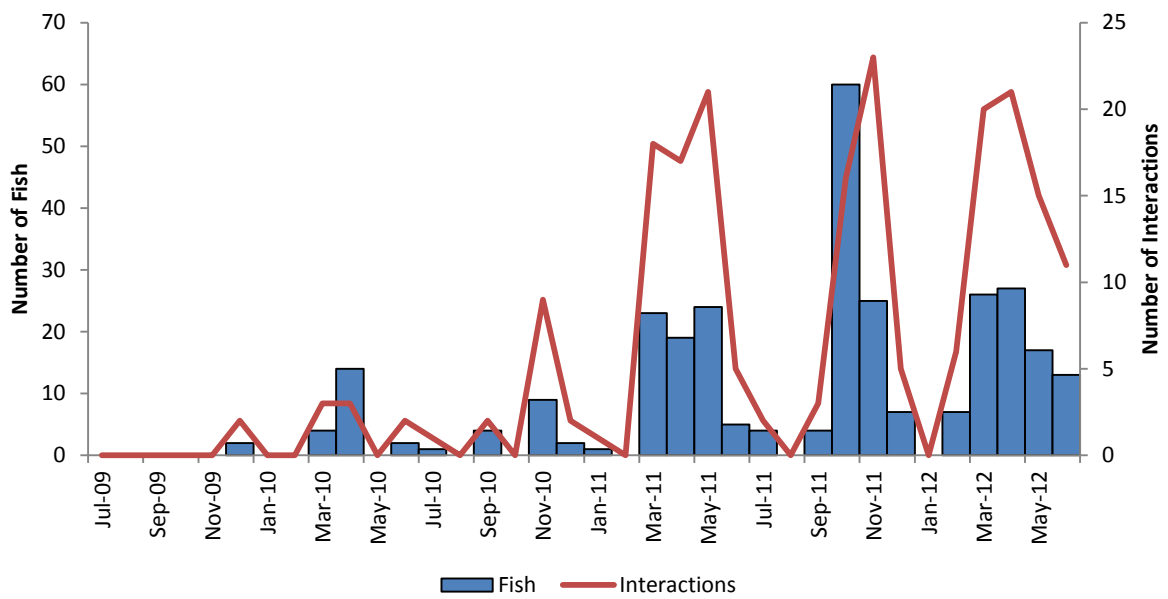


Figure 6: The number of fish involved in interactions and the number of interactions by month.

Section 4: Wildlife interactions by location

Figures 7 through 19 show the locations of the interactions by species group by financial year. The numbered blue dots represent the position and the number of animals unharmed and released after the interaction, and the pink numbered dots represent the number and position of deceased animals.

Figures 7, 8 and 9 show the locations of the seabird interactions for 2009/10, 2010/11 and 2011/12, respectively.

Figure 10 shows the locations of the reptile encounters during 2009/10 (there were no encounters reported in 2010/11 and 2011/12). The increased number of interactions during 2009/10 relate to a period of intense fishing effort eradicating European carp from the Narrung Narrows between Lake Albert and Lake Alexandrina. During this activity 68 freshwater turtles were captured and released.

Figures 11, 12 and 13 show the majority of cetacean interactions occurred in Spencer Gulf, 143 (80%) of the 179 animals involved in an interaction in 2009/10, 118 (93%) of the 127 animals in 2010/11, and 273 (90%) of the 303 animals in 2011/12.

Figures 14, 15 and 16 show the concentrations of pinniped interactions throughout SA. In previous years the majority of interactions were concentrated north of a line from the tip of Yorke Peninsula between the points of Thistle Island, Wedge Island, and the Sir Joseph Banks Group (Knight and Vainickis 2011a). During 2009/10 and 2010/11, a number of animals interacted with fishing gear around the Coorong region over an extended period. In 2011/12, only four interactions were reported with five animals in Spencer Gulf.

Figures 17, 18 and 19 show the shark and syngnathid interactions for 2009/10, 2010/11 and 2011/12. In 2009/10, 18 of the 22 animals involved in interactions were syngnathids, with a pipefish dying south of Venus Bay, and four with great white sharks, two in Spencer Gulf and two west of Corny Point (Figure 17). During 2010/11, 81 syngnathids were involved in 69 interactions and a further seven interactions involved great white sharks, one on the West Coast, five in Spencer Gulf, and one in Gulf St. Vincent. During 2011/12, 183 syngnathids were involved in 115 interactions and a further seven interactions involved seven great white sharks. The majority of the interactions were reported in Spencer Gulf.

Section 4: Wildlife Interactions by Location

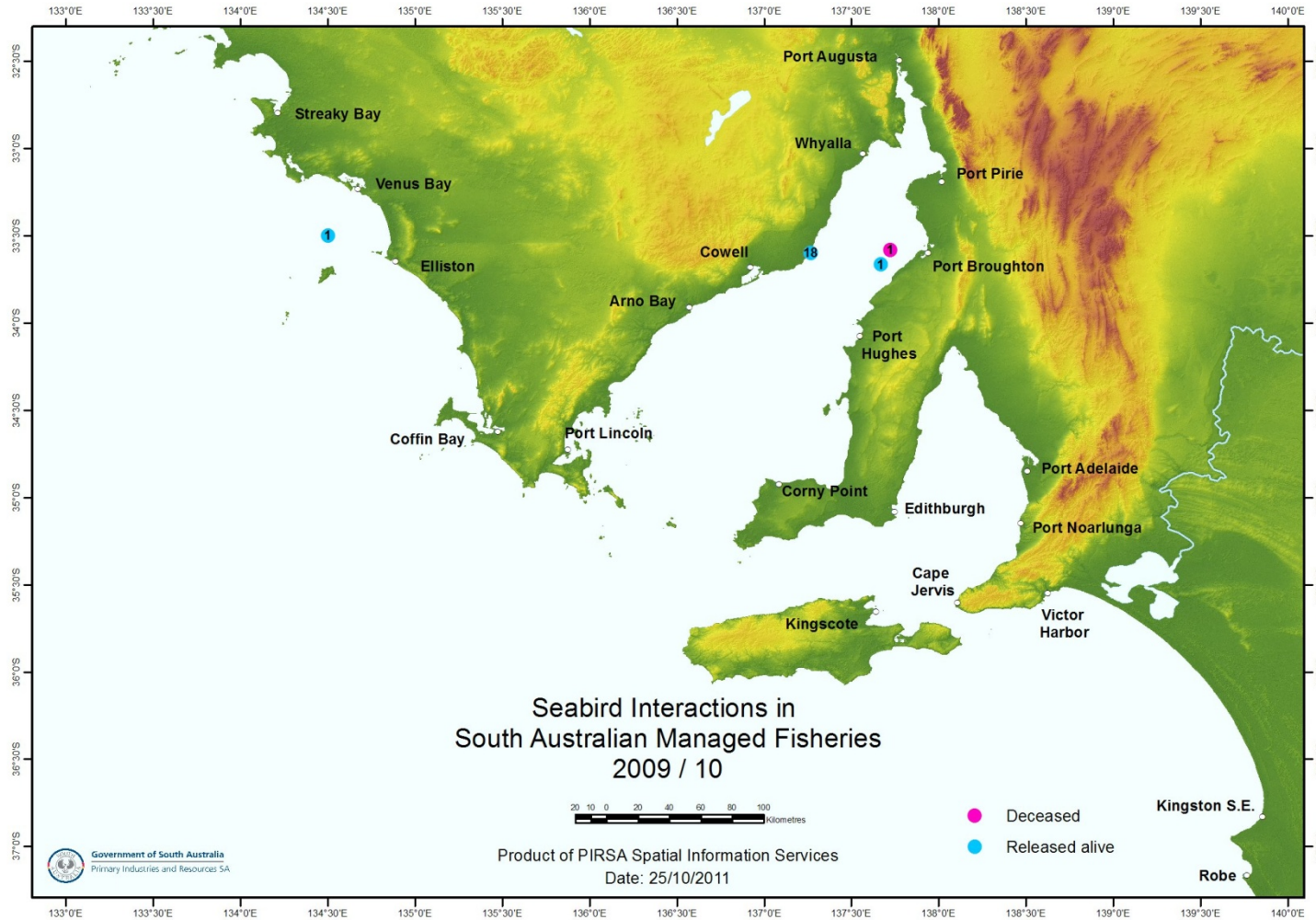


Figure 7: Seabird interactions in South Australian managed fisheries – 2009/10.

Section 4: Wildlife Interactions by Location

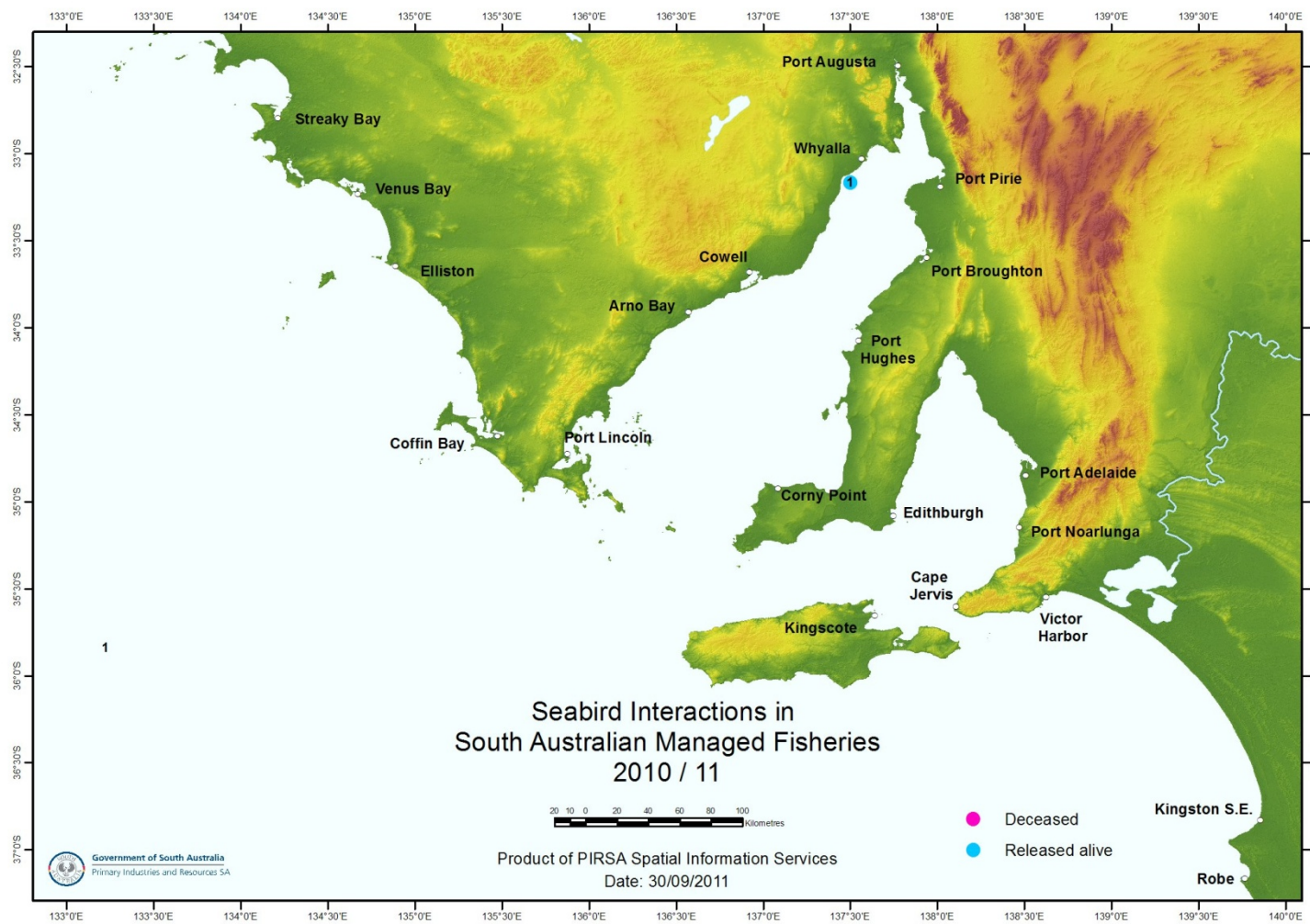


Figure 8: Seabird interactions in South Australian managed fisheries – 2010/11.

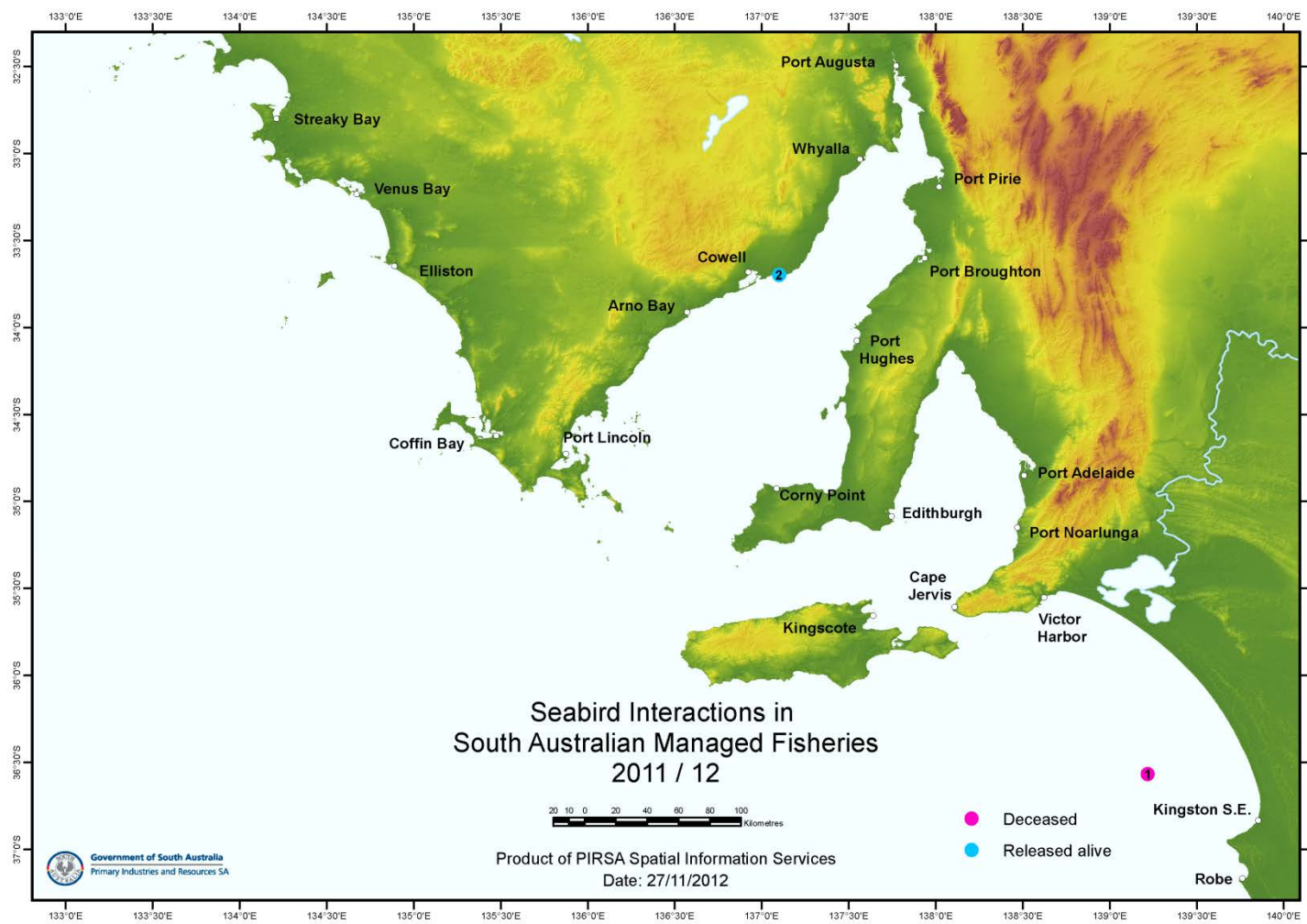


Figure 9: Seabird interactions in South Australian managed fisheries – 2011/12.

Section 4: Wildlife Interactions by Location

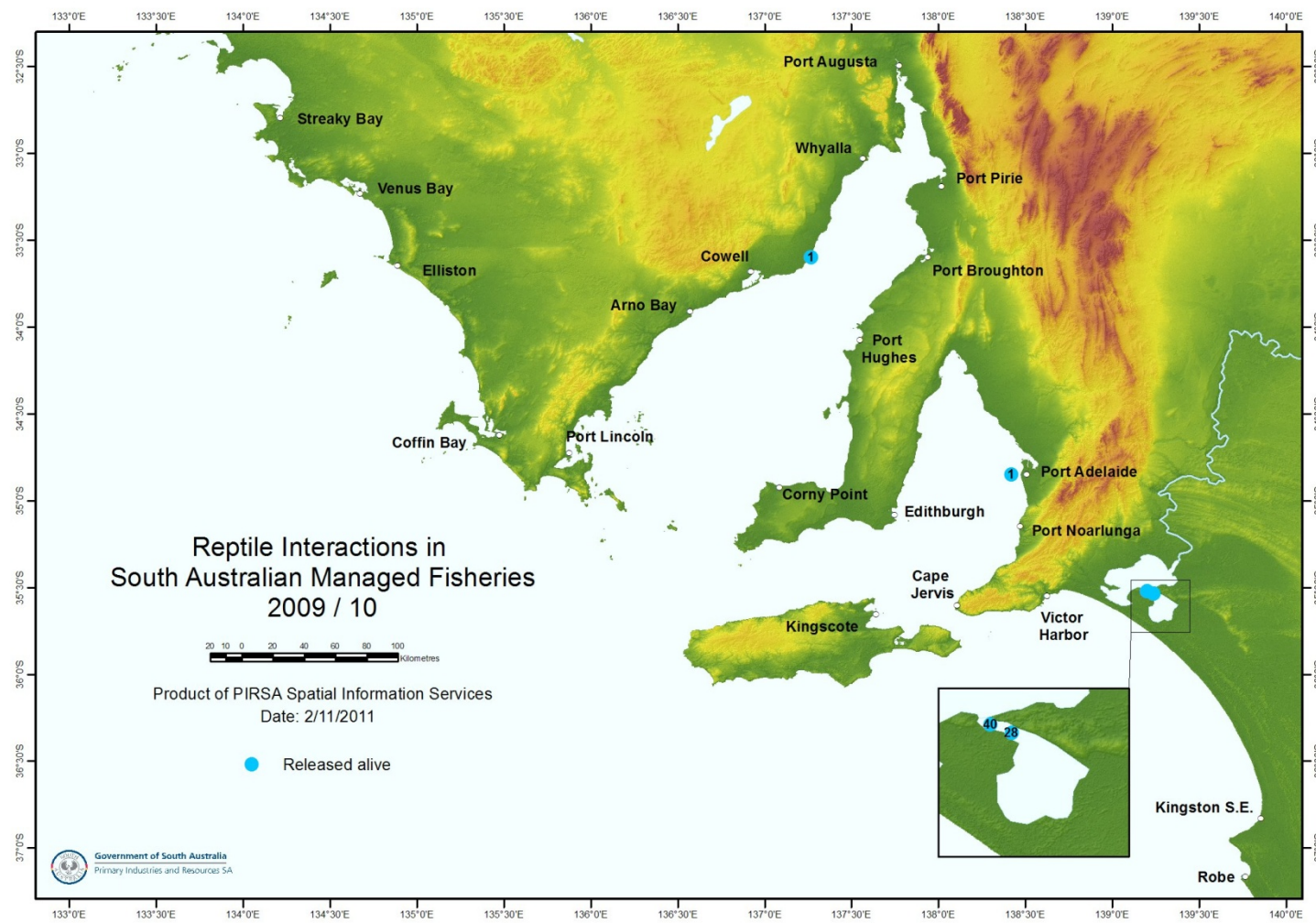


Figure 10: Reptile interactions in South Australian managed fisheries – 2009/10.

Section 4: Wildlife Interactions by Location

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Section 4: Wildlife Interactions by Location

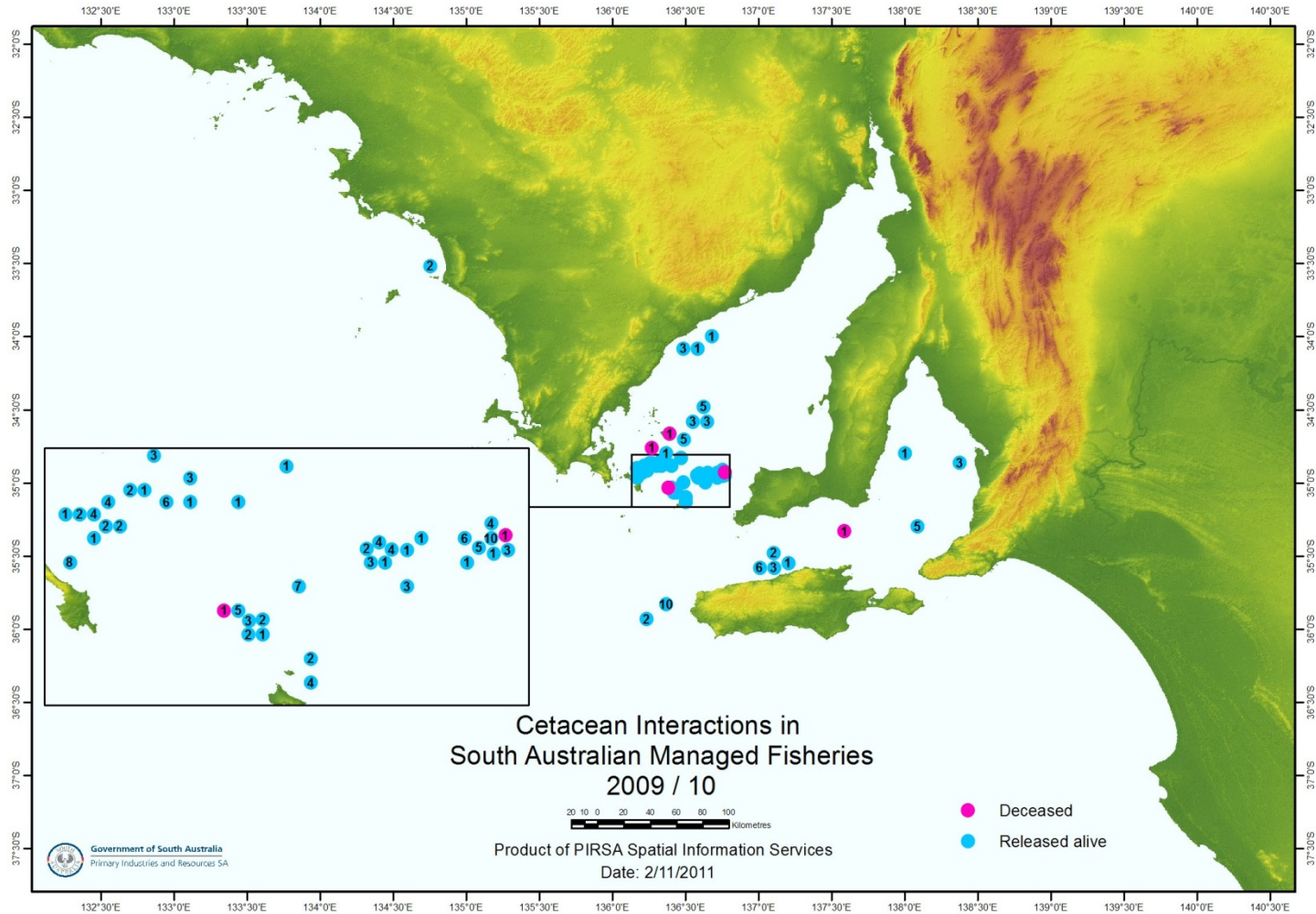


Figure 11: Cetacean interactions in South Australian managed fisheries – 2009/10.

Section 4: Wildlife Interactions by Location

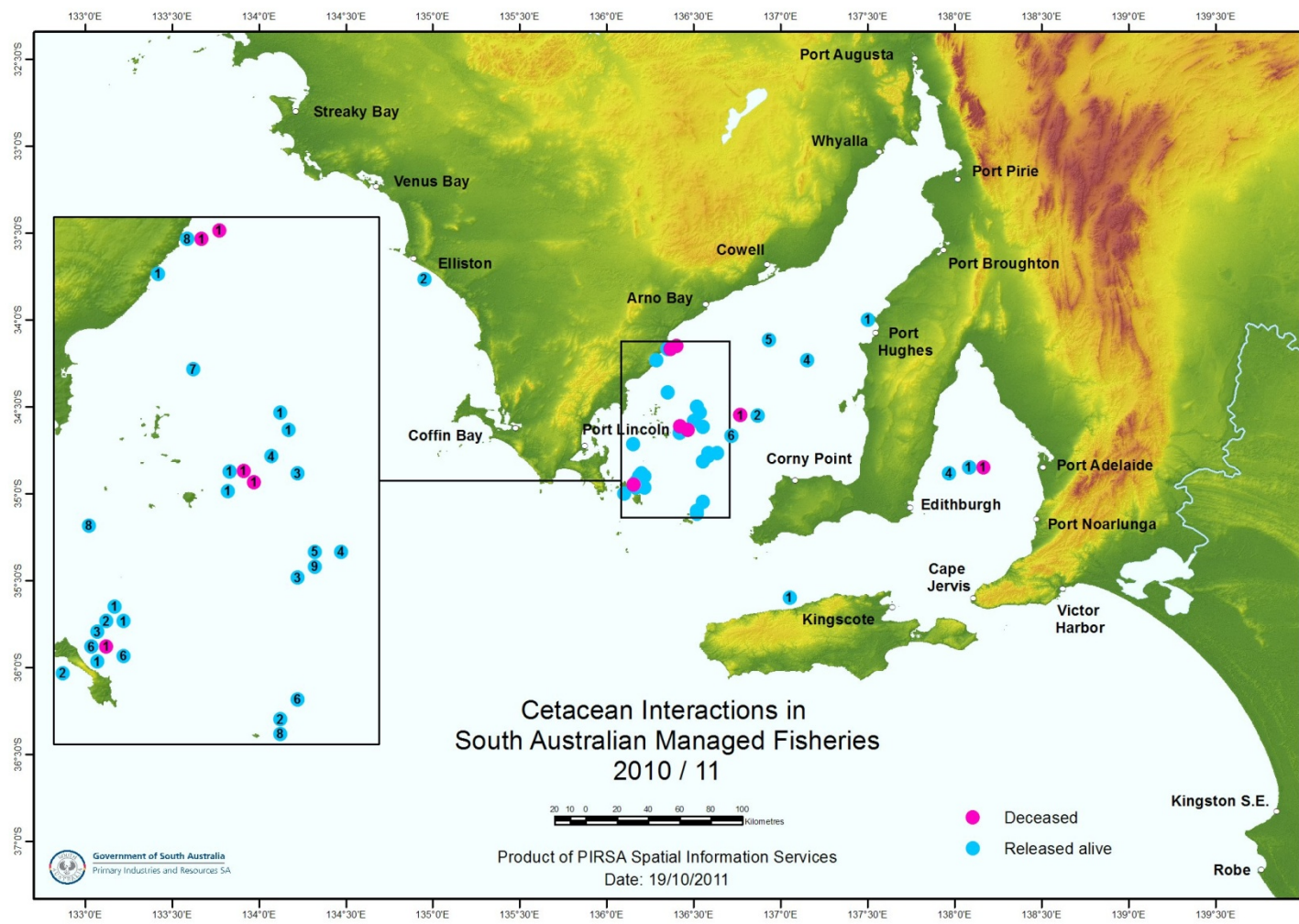


Figure 12: Cetacean interactions in South Australian managed fisheries – 2010/11.

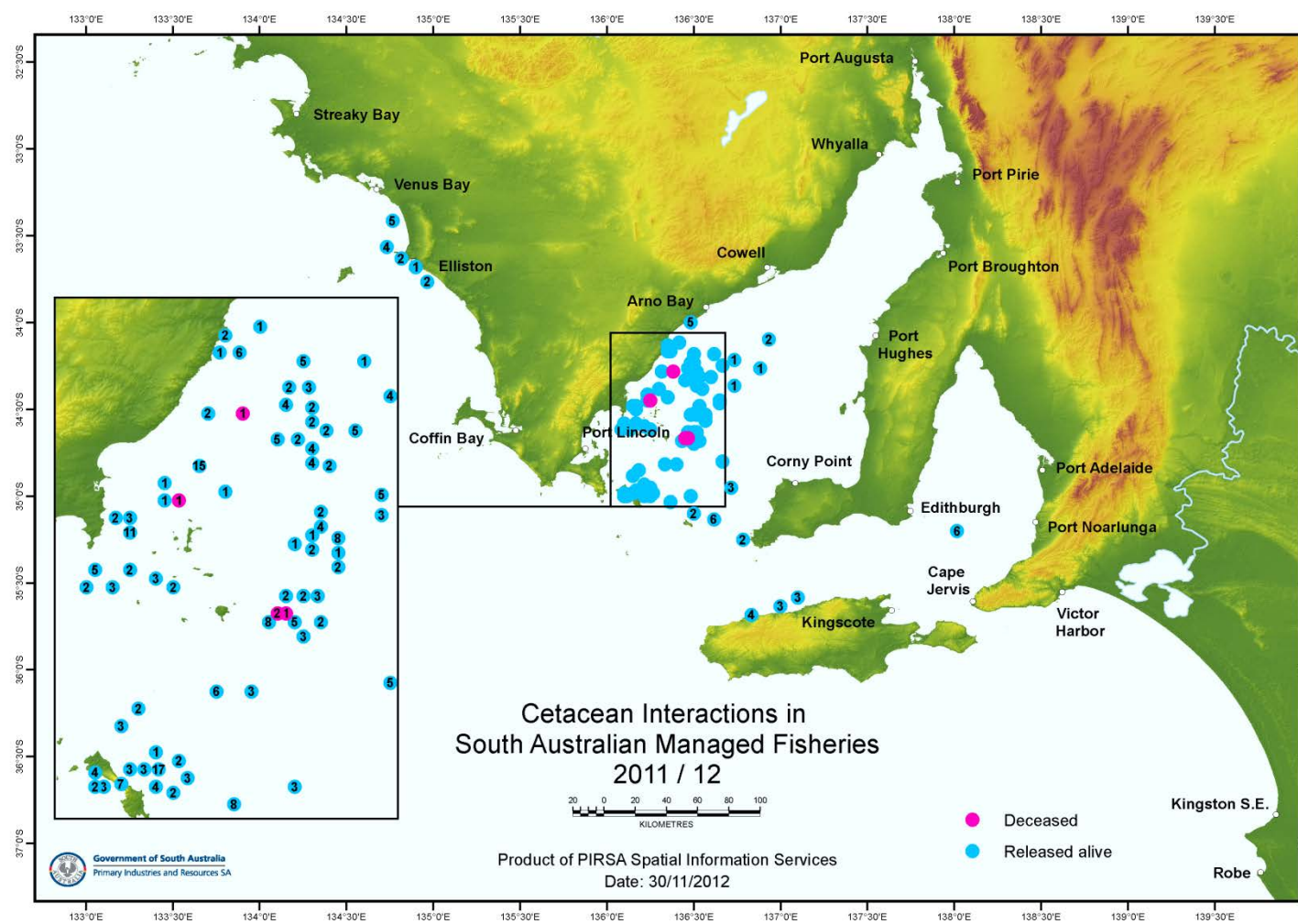


Figure 13: Cetacean interactions in South Australian managed fisheries – 2011/12.

Section 4: Wildlife Interactions by Location

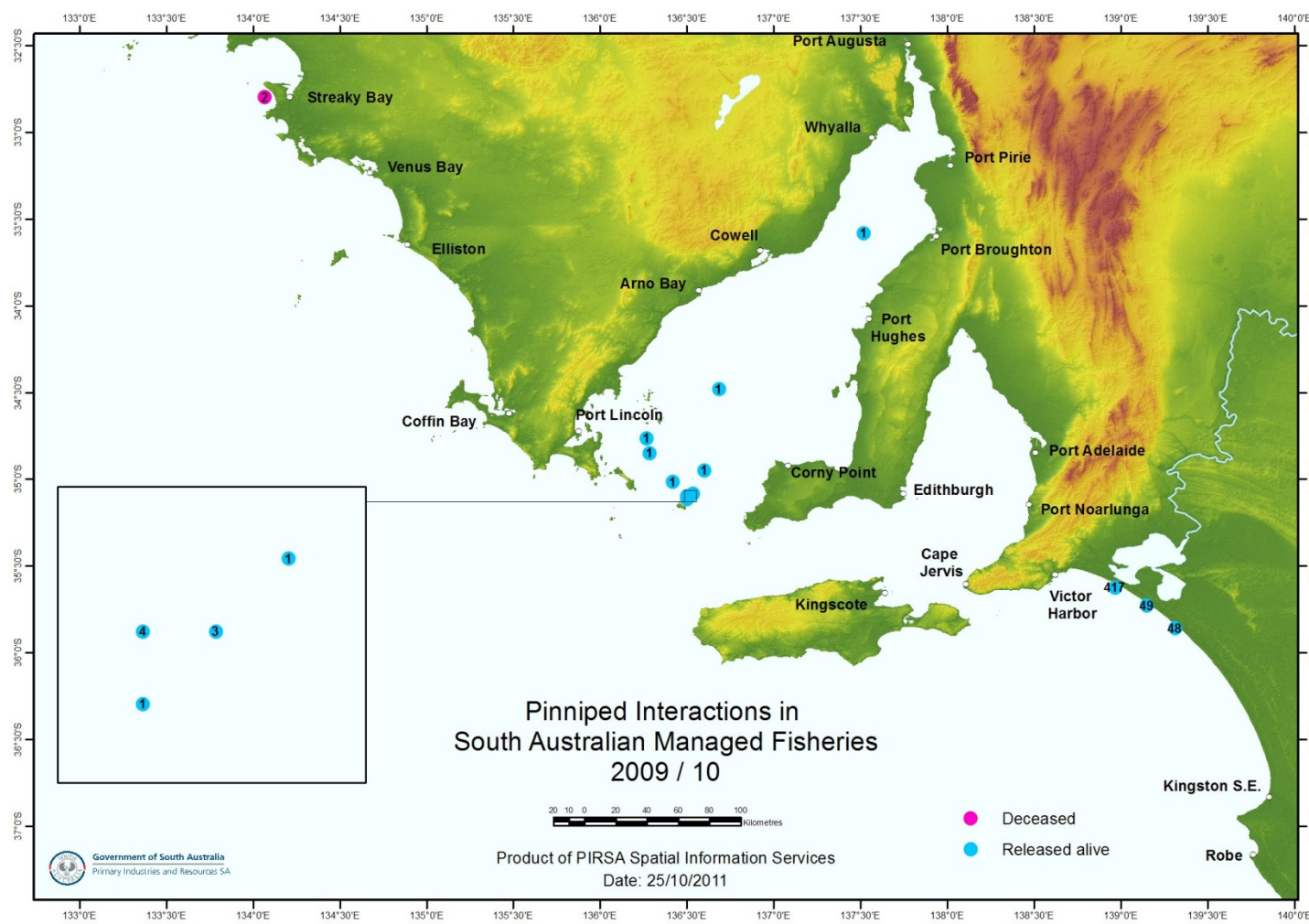


Figure 14: Pinniped interactions in South Australian managed fisheries – 2009/10.

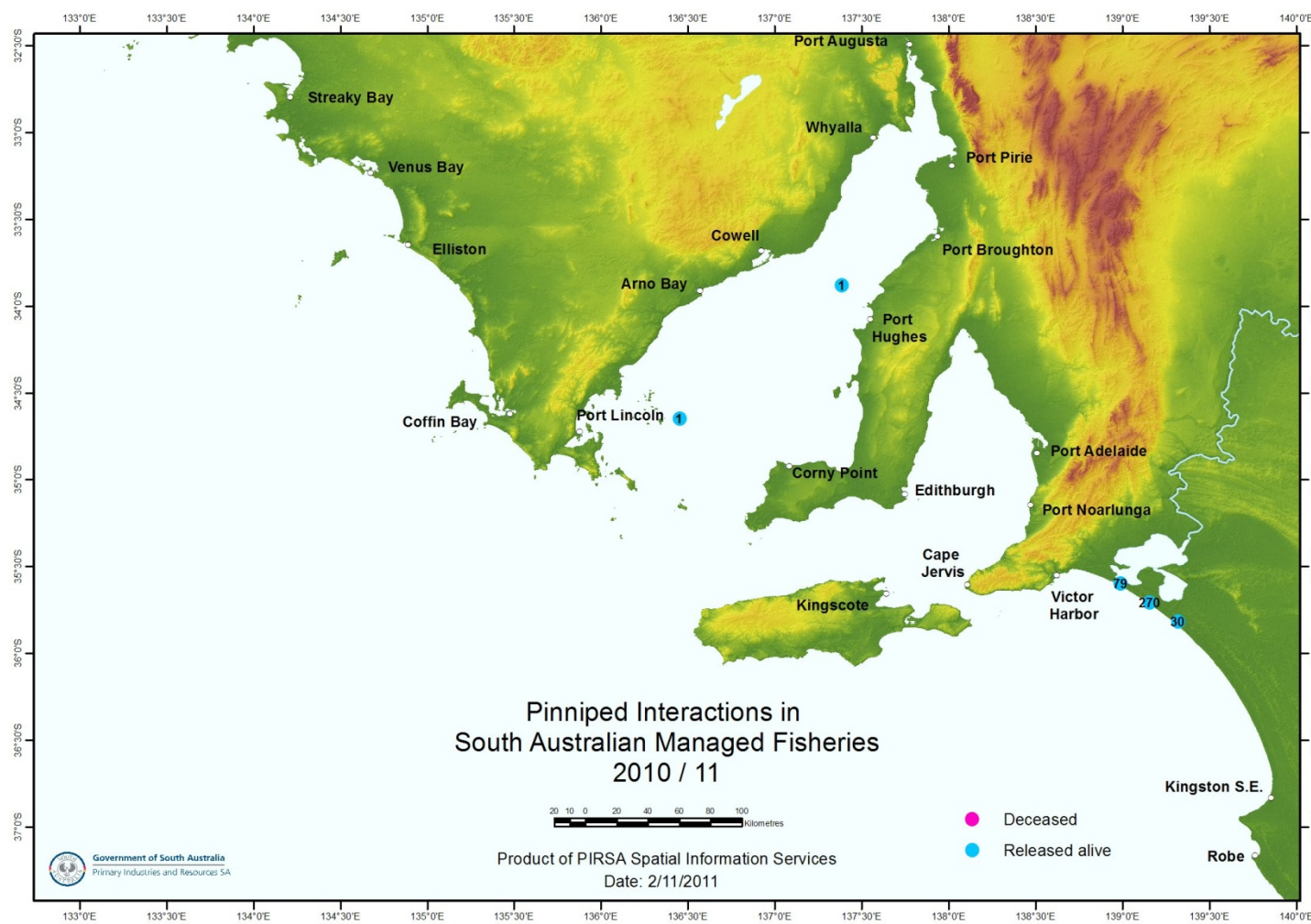


Figure 15: Pinniped interactions in South Australian managed fisheries – 2010/11.

Section 4: Wildlife Interactions by Location

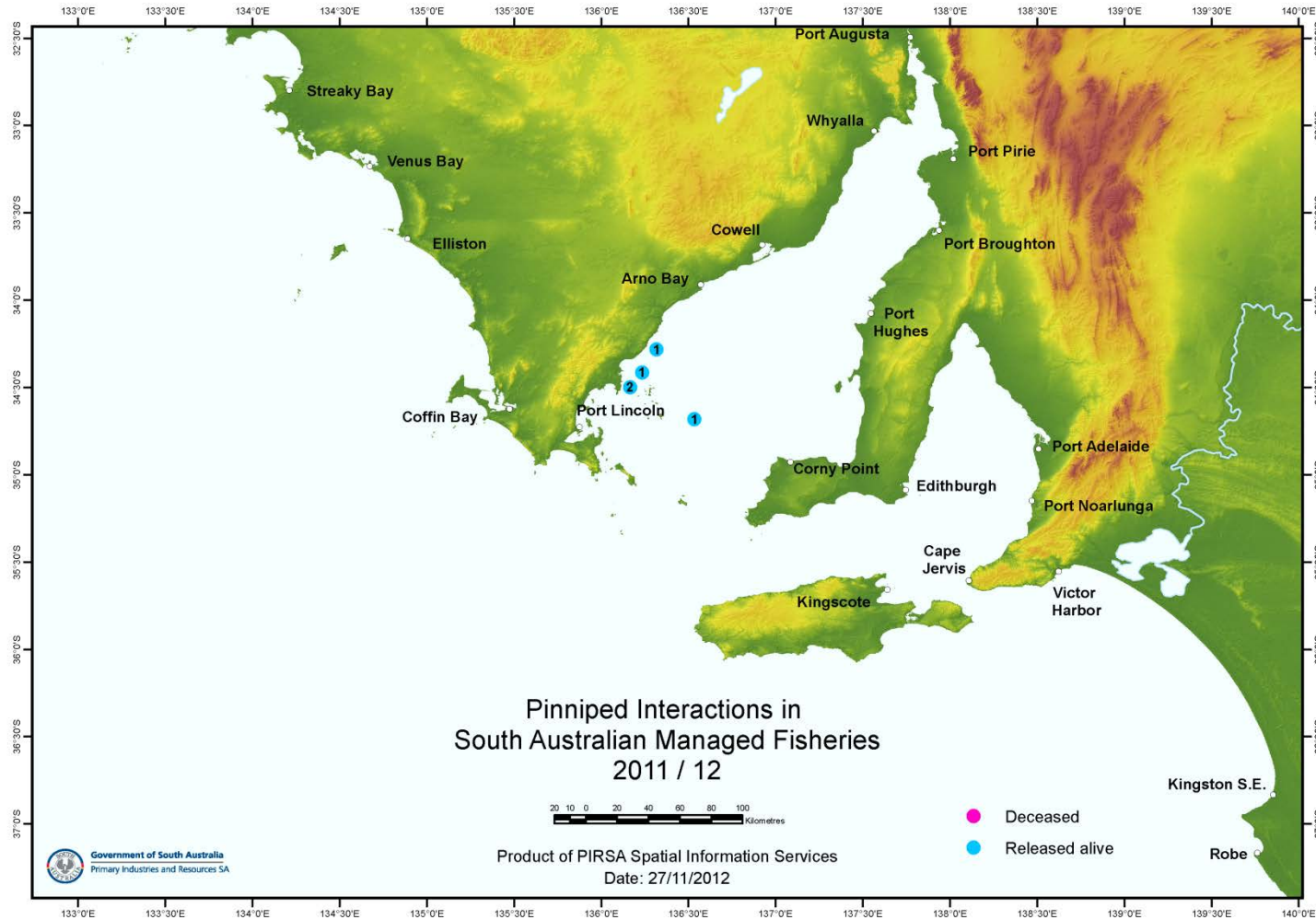


Figure 16: Pinniped interactions in South Australian managed fisheries – 2011/12.

Section 4: Wildlife Interactions by Location

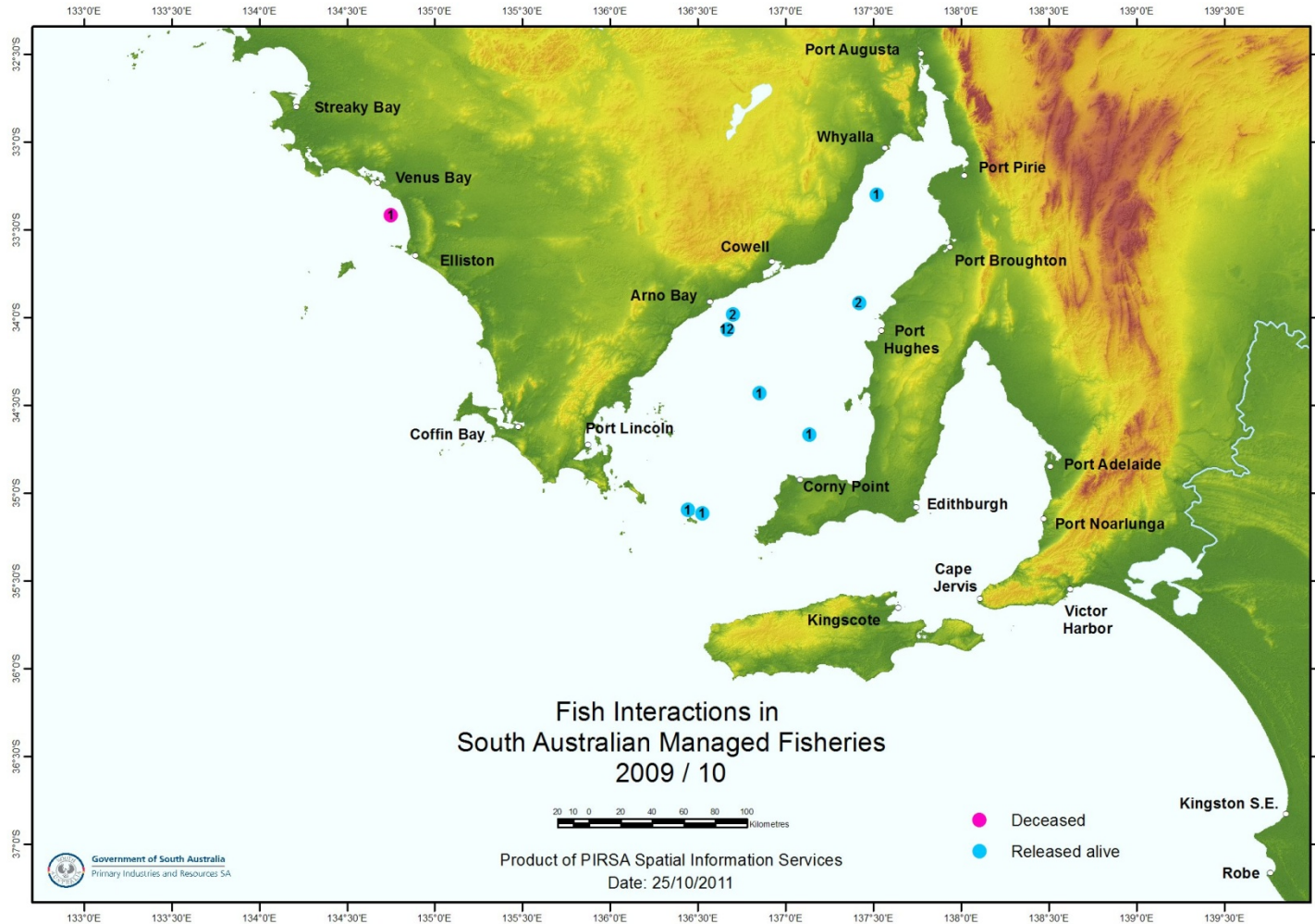


Figure 17: Fish interactions in South Australian managed fisheries – 2009/10.

Section 4: Wildlife Interactions by Location

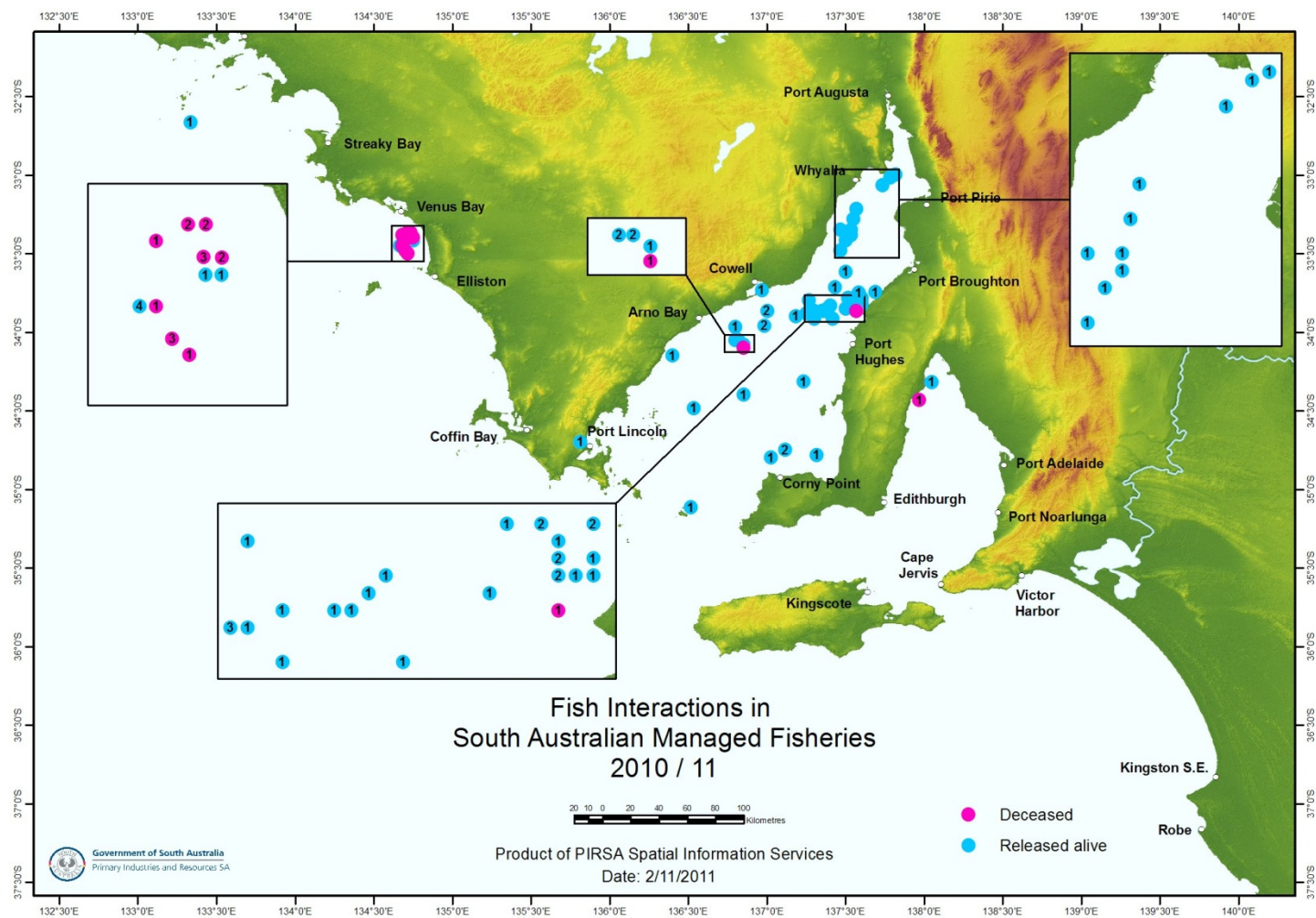


Figure 18: Fish interactions in South Australian managed fisheries – 2010/11.

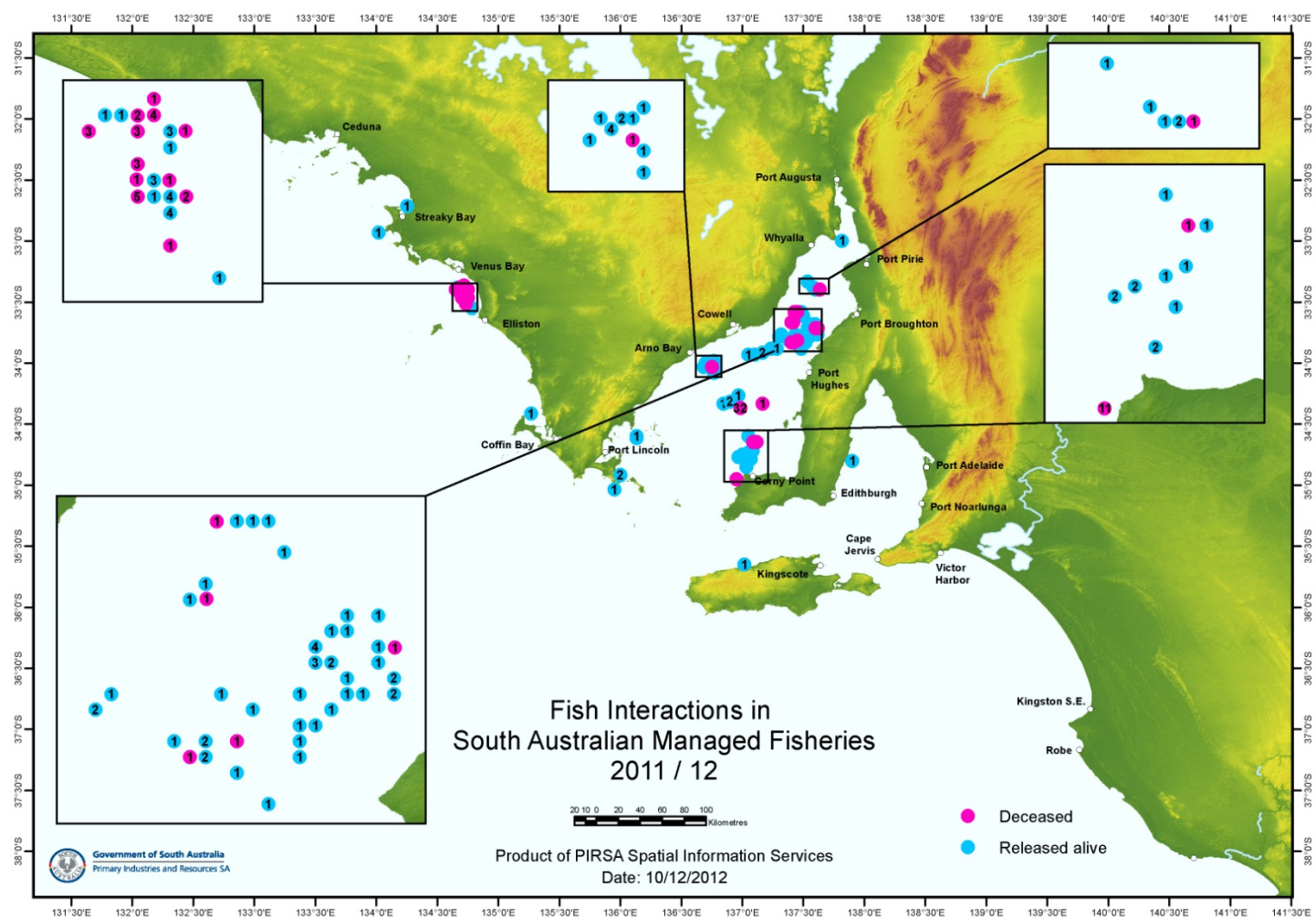


Figure 19: Fish interactions in South Australian managed fisheries – 2011/12.

Section 5: Wildlife interactions by interaction type

Commercial operators reported 178 interactions with 823 animals in 2009/10, 174 interactions with 597 animals in 2010/11, and 237 interactions with 501 animals in 2011/12 (Table 16). The main interaction type for the three periods was “Caught” i.e. hooked or netted, followed by “Other” (Table 16 and Figure 21).

During 2009/10 and 2010/11, the interaction type involving the highest numbers of animals was “Other” due to the increase in interactions in the Lakes and Coorong Fishery.

The “Other” category includes bite offs, animals circling the boat or interacting with fishing gear, and discovering dead animals whilst in transit.

In some situations operators reported more than one interaction type with a single animal or group of animals. For example, in 2010/11, on two occasions, additional interaction types were reported with the same group of animals, with some animals reported as caught and entangled. In 2011/12, there were five occasions where additional interaction types were reported with the same group of animals.

Table 16: TEPS interactions by interaction type by financial year.

Interaction Type	2009/10		2010/11		2011/12	
	Number of Interactions	Number of Animals	Number of Interactions	Number of Animals	Number of Interactions	Number of Animals
Caught	95	279	114	210	200	402
Entangled	3	3	5	5	9	12
Impact	2	3	0	0	0	0
Other	78	538	55	382	28	87
Total	178	823	174	597	237	501

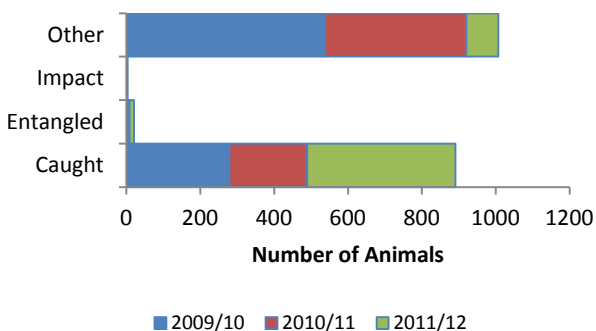


Figure 20: The number of animals encountered by interaction type by financial year.

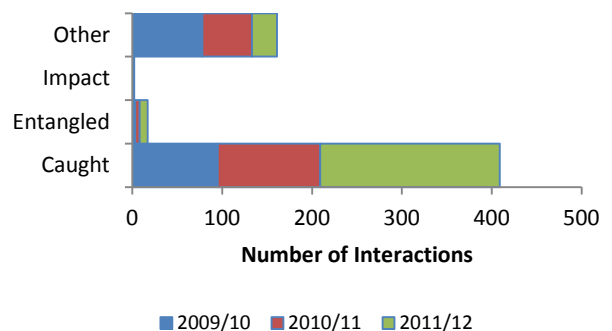


Figure 21: The number of interactions by interaction type by financial year.

Appendix 1: National Parks and Wildlife Act 1972 - Schedule 7 - Endangered species - Part 1 - Animals

Table 17: National Parks and Wildlife Act 1972 - Schedule 7 – Endangered Species – Part 1 – Animals.

Common name	Species	Common name	Species	Common name	Species
Mammals		PETAURIDAE		LARIDAE	
	ACROBATIDAE	Yellow-bellied Glider	<i>Petaurus australis</i>	Little Tern	<i>Sterna albifrons</i>
Feathertail Glider	<i>Acrobates pygmaeus</i>	Squirrel Glider	<i>Petaurus norfolcensis</i>	Fairy Tern	<i>Sterna nereis</i>
	BALAENOPTERIDAE		POTORIDAE		MALURIDAE
Blue Whale	<i>Balaenoptera musculus</i>	Burrowing Bettong	<i>Bettongia lesueur</i>	Southern Emu-wren (Mount Lofty Ranges subspecies)	<i>Stipiturus malachurus intermedius</i>
	DASYURIDAE	Brush-tailed Bettong (eastern subspecies)	<i>Bettongia penicillata penicillata</i>	Southern Emu-wren (Eyre Peninsula subspecies)	<i>Stipiturus malachurus parimeda</i>
Agile Antechinus	<i>Antechinus agilis</i>	Desert Rat-kangaroo	<i>Caloprymnus campestris</i>	Mallee Emu-wren	<i>Stipiturus mallee</i>
Swamp Antechinus	<i>Antechinus minimus</i>	Long-nosed Potoroo	<i>Potorous tridactylus</i>		MELIPHAGIDAE
Mulgara	<i>Dasyercus cristicauda cristicauda</i>		VESPERTILIONIDAE	Yellow Chat	<i>Epthianura crocea</i>
Western Quoll	<i>Dasyurus geoffroii</i>	Little Pied Bat	<i>Chalinobus picatus</i>	Yellow-throated Miner (Black-eared subspecies)	<i>Manorina flavigula melanotis</i>
Spotted-tailed Quoll	<i>Dasyurus maculatus</i>	Eastern Falsistrelle	<i>Falsistrellus tasmaniensis</i>	Regent Honeyeater	<i>Xanthomyza phrygia</i>
Eastern Quoll	<i>Dasyurus viverrinus</i>	Large Bent-wing Bat (southern subspecies)	<i>Miniopterus schreibersii bassanii</i>		PACHYCEPHALIDAE
Red-tailed Phascogale	<i>Phascogale calura</i>	Southern Myotis	<i>Myotis macropus</i>	Olive Whistler (westernmost subspecies)	<i>Pachycephala olivacea hesperus</i>
Brush-tailed Phascogale	<i>Phascogale tapoatafa</i>	Gould's Long-eared Bat	<i>Nyctophilus gouldi</i>		PEDIONOMIDAE
Kangaroo Island Dunnart	<i>Sminthopsis aitkeni</i>			Plains-wanderer	<i>Pedionomus torquatus</i>
	MACROPODIDAE	Birds			PHASIANIDAE
Rufous Hare-wallaby	<i>Lagorchestes hirsutus</i>		ACANTHIZIDAE	King Quail	<i>Coturnix chinensis</i>
Eastern Hare-wallaby	<i>Lagorchestes leporides</i>	Chestnut-rumped Heathwren (Mount Lofty Ranges subspecies)	<i>Calamanthus pyrrhopygius parkeri</i>		POMATOSTOMIDAE
Tammar Wallaby (mainland South Australia Subspecies)	<i>Macropus eugenii eugenii</i>		ACCIPITRIDAE	Grey-crowned Babbler (south east subspecies)	<i>Pomatostomus temporalis temporalis</i>
Toolache Wallaby	<i>Macropus greyi</i>	Grey Goshawk	<i>Accipiter novaehollandiae</i>	Little Lorikeet	PSITTACIDAE
Crescent Nailtail Wallaby	<i>Onychogalea lunata</i>	White-bellied Sea-Eagle	<i>Haliaeetus leucogaster</i>	Swift Parrot	<i>Glossopsitta pusilla</i>
Black-footed Rock-wallaby (MacDonnell Ranges race)	<i>Petrogale lateralis</i>	Square-tailed Kite	<i>Lophoictinia isura</i>	Orange-bellied Parrot	<i>Lathamus discolor</i>
Tasmanian Pademelon	<i>Thylogale billardieri</i>	Osprey	<i>Pandion haliaetus</i>	Night Parrot	<i>Neophema chrysogaster</i>
	MEGADERMATIDAE		ALCEDINIDAE	Ground Parrot	<i>Pezoporus occidentalis</i>
Ghost Bat	<i>Macroderma gigas</i>	Azure Kingfisher	<i>Alcedo azurea</i>		<i>Pezoporus wallicus</i>
	MURIDAE		ANSERANATIDAE	Spotted Bowerbird	PTILONORHYNCHIDAE
White-footed Tree-rat	<i>Conilurus albipes</i>	Magpie Goose	<i>Anseranas semipalmata</i>		<i>Chlamydera maculata</i>
Lesser Stick-nest Rat	<i>Leporillus apicalis</i>		ARDEIDAE	Powerful Owl	STRIGIDAE
Short-tailed Hopping-mouse	<i>Notomys amplus</i>	Little Bittern	<i>Ixobrychus minutus</i>		<i>Ninox strenua</i>
Long-tailed Hopping-mouse	<i>Notomys longicaudatus</i>		ARTAMIDAE	Spinifexbird	SYLVIIDAE
Shark Bay Mouse	<i>Pseudomys fieldi</i>	Pied Currawong (south east subspecies)	<i>Strepera graculina ashbyi</i>		<i>Eremiornis carteri</i>
Gould's Mouse	<i>Pseudomys gouldii</i>	Grey Currawong (north western subspecies)	<i>Strepera versicolor plumbea</i>	Masked Owl	TYTONIDAE
Heath Rat	<i>Pseudomys shortridgei</i>		CACATUIDAE		<i>Tyto novaehollandiae</i>
Pale Field-rat	<i>Rattus tunneyi</i>	Red-tailed Black-Cockatoo (south east subspecies)	<i>Calyptorhynchus banksii graptogyne</i>		Reptiles
	MYRMECOBIDAE	Glossy Black-Cockatoo (Kangaroo Island subspecies)	<i>Calyptorhynchus lathami halmaturinus</i>	Loggerhead Turtle	CHELONIIDAE
Numbat	<i>Myrmecobius fasciatus</i>		CASUARIIDAE		<i>Caretta caretta</i>
	ORNITHORHYNCHIDAE	Kangaroo Island Emu	<i>Dromaius baudinianus</i>	Mallee Worm-lizard	GEKKONIDAE
Platypus	<i>Ornithorhynchus anatinus</i>		DICRURIDAE	Striped Snake-lizard	<i>Aprasia aurita</i>
	OTARIIDAE	Satin Flycatcher	<i>Myiagra cyanoleuca</i>		<i>Delma impar</i>
Subantarctic Fur-seal	<i>Arctocephalus tropicalis</i>		DIOMEDEIDAE	Swamp Skink	SCINCIDAE
	PERAMELIDAE	Yellow-nosed Albatross (Indian Ocean subspecies)	<i>Diomedea chlororhynchos carteri</i>	Cunningham's Skink	<i>Egernia coventryi</i>
Pig-footed Bandicoot	<i>Chaeropus ecaudatus</i>	Yellow-nosed Albatross (Atlantic Ocean subspecies)	<i>Diomedea chlororhynchos chlororhynchos</i>	Tjakura	<i>Egernia kintorei</i>
Golden Bandicoot	<i>Isoodon auratus</i>	Royal Albatross (northern subspecies)	<i>Diomedea epomophora sanfordi</i>	Black-striped Desert Skink	<i>Egernia slateri</i>
Lesser Bilby	<i>Macrotis leucura</i>	Sooty Albatross	<i>Diomedea fusca</i>	Salamander Skink	<i>Nannoscincus maccoyi</i>
Western Barred Bandicoot	<i>Perameles bougainville</i>		EUPETIDAE	Pygmy Bluetongue	<i>Tiliqua adelaidensis</i>
Desert Bandicoot	<i>Perameles eremiana</i>	Spotted Quail-thrush (Mount Lofty Ranges subspecies)	<i>Cinclosoma punctatum anachoreta</i>		
Eastern Barred Bandicoot	<i>Perameles gunnii</i>	Spotted Quail-thrush (south east subspecies)	<i>Cinclosoma punctatum punctatum</i>		
		Western Whipbird (eastern subspecies)	<i>Psophodes nigrogularis leucogaster</i>		

Appendix 2: National Parks and Wildlife Act 1972 - Schedule 8

NATIONAL PARKS AND WILDLIFE ACT 1972 - SCHEDULE 8

Schedule 8—Vulnerable species

Part 1—Animals

Common name	Species	Common name	Species	Common name	Species
Mammals		Chestnut-rumped Heathwren (Flinders Ranges subspecies)	<i>Calamanthus pyrrhopygius pedleri</i>		PROCELLARIIDAE
	BALAENIDAE			Southern Giant-Petrel	<i>Macronectes giganteus</i>
Southern Right Whale	<i>Eubalaena australis</i>	Chestnut-rumped Heathwren (south east subspecies)	<i>Calamanthus pyrrhopygius pyrrhopygius</i>		PSITTACIDAE
	BALAENOPTERIDAE		ANATIDAE	Blue-winged Parrot	<i>Neophema chrysostoma</i>
Sei Whale	<i>Balaenoptera borealis</i>	Freckled Duck	<i>Stictonetta naevosa</i>	Princess Parrot	<i>Polytelis alexandrae</i>
Fin Whale	<i>Balaenoptera physalus</i>		ARDEIDAE	Regent Parrot (eastern subspecies)	<i>Polytelis anthopeplus monarchoides</i>
Humpback Whale	<i>Megaptera novaeangliae</i>	Australasian Bittern	<i>Botaurus poiciloptilus</i>		RALLIDAE
	BURRAMYIDAE		CACATUIDAE	Lewin's Rail	<i>Rallus pectoralis</i>
Eastern Pygmy-possum	<i>Cercartetus nanus</i>	Yellow-tailed Black-Cockatoo	<i>Calyptorhynchus funereus</i>		RECURVIROSTRIDAE
	DASYURIDAE		CHARADRIIDAE	Banded Stilt	<i>Cladorhynchus leucocephalus</i>
Yellow-footed Antechinus	<i>Antechinus flavipes</i>	Hooded Plover	<i>Thinornis rubricollis</i>		ROSTRATULIDAE
Kowari	<i>Dasyercus byrnei</i>		DIOMEDEIDAE	Painted Snipe	<i>Rostratula benghalensis</i>
Sandhill Dunnart	<i>Sminthopsis psammophila</i>	Buller's Albatross	<i>Diomedea bulleri</i>		SCOLOPACIDAE
	MACROPODIDAE	Shy Albatross	<i>Diomedea cauta cauta</i>	Eastern Curlew	<i>Numenius madagascariensis</i>
Yellow-footed Rock-wallaby	<i>Petrogale xanthopus</i>	Salvin's Albatross	<i>Diomedea cauta salvini</i>		Reptiles
Swamp Wallaby	<i>Wallabia bicolor</i>	Grey-headed Albatross	<i>Diomedea chrysostoma</i>		CHELIDAE
	MOLOSSIDAE	Royal Albatross (southern subspecies)	<i>Diomedea epomophora epomophora</i>	Broad-shelled Tortoise	<i>Chelodina expansa</i>
Hairy-rostrum Freetail-bat ("hairy rostrum")	<i>Mormopterus species 6</i>	Wandering Albatross	<i>Diomedea exulans</i>	Macquarie Tortoise	<i>Emydura macquarii</i>
	MURIDAE	Black-browed Albatross (Campbell Island subspecies)	<i>Diomedea melanophrys impavida</i>		CHELONIIDAE
Greater Stick-nest Rat	<i>Leporillus conditor</i>	Light-mantled Sooty Albatross	<i>Diomedea palpebrata</i>	Green Turtle	<i>Chelonia mydas</i>
Fawn Hopping-mouse	<i>Notomys cervinus</i>		ESTRILDIDAE		DERMOCHELYIDAE
Dusky Hopping-mouse	<i>Notomys fuscus</i>	Diamond Firetail	<i>Stagonopleura guttata</i>	Leathery Turtle	<i>Dermochelys coriacea</i>
Plains Mouse	<i>Pseudomys australis</i>		GRUIDAE		ELAPIDAE
	NOTORYCTIDAE	Brolga	<i>Grus rubicunda</i>	Desert Death Adder	<i>Acanthopis pyrrhus</i>
Southern Marsupial Mole (Itjari-itjari)	<i>Notoryctes typhlops</i>		LARIDAE		SCINCIDAE
	OTARIIDAE	Great Skua (Macquarie and Heard Island subspecies)	<i>Catharacta skua lonnbergi</i>	Yellow-bellied Water Skink	<i>Eulamprus heatwolei</i>
Australian Sea-lion	<i>Neophoca cinerea</i>		MEGAPODIIDAE	Musgrave Slider	<i>Lerista speciosa</i>
	PERAMELIDAE	Malleefowl	<i>Leipoa ocellata</i>	Glossy Grass Skink	<i>Pseudemoia rawlinsoni</i>
Southern Brown Bandicoot (Nuyts Archipelago subspecies)	<i>Isodon obesulus nauticus</i>		MELIPHAGIDAE		VARANIDAE
Southern Brown Bandicoot (SA mainland and Kangaroo Island subspecies)	<i>Isodon obesulus obesulus</i>	Black-chinned Honeyeater (south eastern subspecies)	<i>Meliphreptus gularis gularis</i>	Heath Goanna	<i>Varanus rosenbergi</i>
		Australian Bustard	OTIDIDAE		Amphibians
Greater Bilby	<i>Macrotis lagotis</i>		<i>Ardeotis australis</i>		HYLIDAE
	VESPERTILIONIDAE	Scarlet Robin (western subspecies)	PETROICIDAE	Golden Bell Frog	<i>Litoria raniformis</i>
Greater Long-eared Bat (south eastern form)	<i>Nyctophilus timoriensis</i>	Flame Robin	<i>Petroica multicolor campbelli</i>		MYOBATRACHIDAE
			<i>Petroica phoenicea</i>	Shoemaker Frog	<i>Neobatrachus sutor</i>
	Birds		PHASIANIDAE	Orange-crowned Toadlet	<i>Pseudophryne occidentalis</i>
	ACANTHIZIDAE	Brown Quail	<i>Coturnix ypsilophora</i>	Marbled Toadlet	<i>Pseudophryne semimarmorata</i>
Slender-billed Thornbill (St Vincent Gulf subspecies)	<i>Acanthiza iredalei rosinae</i>				

Appendix 3: National Parks and Wildlife Act 1972 - Schedule 9

NATIONAL PARKS AND WILDLIFE ACT 1972 - SCHEDULE 9

Schedule 9—Rare species

Part 1—Animals

Common name	Species	Common name	Species	Common name	Species	Common name	Species
	Mammals	Rufous Bristlebird (south east SA subspecies)	<i>Dasyornis broadbenti broadbenti</i>	Southern Emu-wren (south east SA subspecies)	<i>Stipiturus malachurus polionotum</i>		THRESKIORNITHIDAE
	BALAENOPTERIDAE					Glossy Ibis	<i>Plegadis falcinellus</i>
Minke Whale	<i>Balaenoptera acutorostrata</i>	Western Gerygone	<i>Gerygone fusca</i>	Rufous-crowned Emu-wren	<i>Stipiturus ruficeps</i>		TURNICIDAE
Bryde's Whale	<i>Balaenoptera edeni</i>	White-throated Gerygone	<i>Gerygone olivacea</i>		MELIPHAGIDAE	Red-chested Button-quail	<i>Turnix pyrrhorthorax</i>
	DASYURIDAE		ACCIPITRIDAE	Grey Honeyeater	<i>Conopophila whitei</i>	Painted Button-quail	<i>Turnix varia</i>
Lesser Hairy-footed Dunnart	<i>Sminthopsis youngsoni</i>	Letter-winged Kite	<i>Elanus scriptus</i>	Blue-faced Honeyeater	<i>Entomyzon cyanotis</i>		TYTONIDAE
	DELPHINIDAE	Black-breasted Buzzard	<i>Hamirostra melanosternon</i>	Painted Honeyeater	<i>Grantiella picta</i>	Grass Owl	<i>Tyto capensis</i>
Short-finned Pilot Whale	<i>Globicephala macrorhynchus</i>		ANATIDAE	Purple-gaped Honeyeater (mainland subspecies)	<i>Lichenostomus cratitius occidentalis</i>		Reptiles
Risso's Dolphin	<i>Grampus griseus</i>	Australasian Shoveler	<i>Anas rhynchos</i>				AGAMIDAE
False Killer Whale	<i>Pseudorca crassidens</i>	Musk Duck	<i>Biziura lobata</i>	Brown Honeyeater	<i>Lichmera indistincta</i>	Jacky Lizard	<i>Amphibolurus muricatus</i>
	EMBALLONURIDAE	Cape Barren Goose	<i>Cereopsis novaehollandiae</i>	Black-chinned Honeyeater (northern subspecies)	<i>Melithreptus gularis laetior</i>	Spotted Dragon	<i>Ctenophorus maculatus</i>
Yellow-bellied Sheath-tail Bat	<i>Saccolaimus flaviventris</i>	Blue-billed Duck	<i>Oxyura australis</i>			McKenzie's Dragon	<i>Ctenophorus mckenziei</i>
Hill's Sheath-tail Bat	<i>Taphozous hilli</i>		ANHINGIDAE	Little Friarbird	<i>Philemon citreogularis</i>	Claypan Dragon	<i>Ctenophorus salinarum</i>
	KOGIIDAE	Darter	<i>Anhinga melanogaster</i>	Striped Honeyeater	<i>Plectorhyncha lanceolata</i>		BOIDAE
Pygmy Sperm Whale	<i>Kogia breviceps</i>		ARDEIDAE	Bassian Thrush	<i>Zoothera lunulata</i>	Woma	<i>Aspidites ramsayi</i>
Dwarf Sperm Whale	<i>Kogia simas</i>	Cattle Egret	<i>Ardea ibis</i>		ORIOIIDAE	Carpet Python	<i>Morelia spilota</i>
	MACROPODIDAE	Intermediate Egret	<i>Ardea intermedia</i>	Olive-backed Oriole	<i>Oriolus sagittatus</i>		ELAPIDAE
Eastern Grey Kangaroo	<i>Macropus giganteus</i>	Little Egret	<i>Egretta garzetta</i>		PACHYCEPHALIDAE	Channel Country Whipsnake	<i>Demansia sp. 'Channel Country'</i>
Red-necked Wallaby	<i>Macropus rufogriseus</i>	Eastern Reef Egret	<i>Egretta sacra</i>	Crested Shrike-tit	<i>Falcunculus frontatus</i>		<i>Whipsnake</i>
Black-footed Rock Wallaby	<i>Petrogale lateralis pearsoni</i>		BURHINIDAE	Gilbert's Whistler	<i>Pachycephala inornata</i>	White-lipped Snake	<i>Drysdalia coronoides</i>
	MURIDAE	Bush Stone-curlew	<i>Burhinus grallarius</i>	Red-lored Whistler	<i>Pachycephala rufogularis</i>	Bardick	<i>Echiopsis curta</i>
Swamp Rat	<i>Rattus lutreolus</i>		CACATUIDAE		PETROICIDAE	Spotted Brown Snake	<i>Pseudonaja guttata</i>
	NEOBALAENIDAE	Major Mitchell's Cockatoo	<i>Cacatua leadbeateri</i>	Hooded Robin (south east subspecies)	<i>Melanodryas cucullata cucullata</i>	Western Black-naped Snake	<i>Simoselaps bimaculatus</i>
Pygmy Right Whale	<i>Caperea marginata</i>		CAMPEPHAGIDAE	Jacky Winter (south east subspecies)	<i>Microeca fascinans fascinans</i>	Common Bandy-Bandy	<i>Vermicella annulata</i>
	OTARIIDAE	White-bellied Cuckoo-shrike	<i>Coracina papuensis</i>	Scarlet Robin (eastern subspecies)	<i>Petroica multicolor boodang</i>		GEKKONIDAE
Australian Fur-seal	<i>Arctocephalus pusillus</i>		CHARADRIIDAE		PODICIPEDIDAE	Northern Snake-lizard	<i>Delma borea</i>
	PETAURIDAE	Great Sand Plover	<i>Charadrius leschenaultii</i>	Great Crested Grebe	<i>Podiceps cristatus</i>	Patchwork Gecko	<i>Diplodactylus pulcher</i>
Sugar Glider	<i>Petaurus breviceps</i>	Lesser Sand Plover	<i>Charadrius mongolus</i>		POMATOSTOMIDAE	Map Gecko	<i>Diplodactylus steindachneri</i>
	PHALANGERIDAE	Pacific Golden Plover	<i>Pluvialis fulva</i>	Grey-crowned Babbler (northern subspecies)	<i>Pomatostomus temporalisrubeculus</i>	Pernatty Knob-tailed Gecko	<i>Nephurus deleani</i>
Common Brushtail Possum	<i>Trichosurus vulpecula</i>		CLIMACTERIDAE			Marbled Velvet Gecko	<i>Oedura marmorata</i>
	PHOCIDAE	White-browed Treecreeper	<i>Climacteris affinis</i>		PROCELLARIIDAE	Bronzeback Legless Lizard	<i>Ophidiocephalus taeniatus</i>
Leopard Seal	<i>Hydrurga leptonyx</i>		COLUMBIDAE	Fleshy-footed Shearwater	<i>Puffinus carneipes</i>		SCINCIDAE
Southern Elephant Seal	<i>Mirounga leonina</i>	Spinifex Pigeon	<i>Geophaps plumifera</i>		PSITTACIDAE	Western Three-lined Skink	<i>Bassiana trilineata</i>
	PHYSETERIDAE	Flock Bronzewing	<i>Phaps histrionica</i>	Red-winged Parrot	<i>Aprosmictus erythropterus</i>	Ashy-downs Ctenotus	<i>Ctenotus astarte</i>
Sperm Whale	<i>Physeter macrocephalus</i>		CORCORACIDAE	Elegant Parrot	<i>Neophema elegans</i>	Giant Desert Ctenotus	<i>Ctenotus grandis</i>
	POTORIDAE	White-winged Chough	<i>Corcorax melanorhamphos</i>	Rock Parrot	<i>Neophema petrophila</i>	Greer's Ctenotus	<i>Ctenotus greeri</i>
Brush-tailed Bettong (western subspecies)	<i>Bettongia penicillata ogilbyi</i>		DICRURIDAE	Scarlet-chested Parrot	<i>Neophema splendida</i>	Blacksoil Ctenotus	<i>Ctenotus joanae</i>
	PTEROPODIDAE	Restless Flycatcher	<i>Myiagra inquieta</i>	Blue Bonnet (western subspecies)	<i>Northiella haematogaster narethae</i>	Paleface Ctenotus	<i>Ctenotus piankai</i>
Grey-headed Flying-fox	<i>Pteropus poliocephalus</i>	Painted Finch	<i>Emblema pictum</i>	Western Bowerbird	<i>Chlamydera guttata</i>	Southern Water Skink	<i>Eulamprus tympanum</i>
Little Red Flying-fox	<i>Pteropus scapulatus</i>	Beautiful Firetail	<i>Stagonopleura bella</i>		RALLIDAE	Beach Slider	<i>Lerista arenicola</i>
	VOMBATIDAE		EUPETIDAE	Spotless Crane	<i>Porzana tabuensis</i>	Speckled Slider	<i>Lerista baynesi</i>
Common Wombat	<i>Vombatus ursinus</i>	Chestnut Quail-thrush (eastern subspecies)	<i>Cincoloma castanotus castanotus</i>		SCOLOPACIDAE	Dwarf four-toed Slider	<i>Lerista distinguenda</i>
	ZIPHIIDAE			Common Sandpiper	<i>Actitis hypoleucos</i>	Long-legged Slider	<i>Lerista microtis</i>
Arnoux's Beaked Whale	<i>Berardius amouxi</i>	Western Whipbird (Kangaroo Island subspecies)	<i>Psophodes nigrogularis lashmari</i>	Ruddy Turnstone	<i>Arenaria interpres</i>	Desert Glossy Skink	<i>Notoscincus ornatus</i>
Southern Bottlenose Whale	<i>Hyperoodon planifrons</i>			Sanderling	<i>Calidris alba</i>	Blacksoil Skink	<i>Proablepharus kinghorni</i>
Andrew's Beaked Whale	<i>Mesoplodon bowdoini</i>		FALCONIDAE	Pectoral Sandpiper	<i>Calidris melanotos</i>	Bight Coast Skink	<i>Pseudemoia baudini</i>
Gray's Beaked Whale	<i>Mesoplodon grayi</i>	Grey Falcon	<i>Falco hypoleucos</i>	Long-toed Stint	<i>Calidris subminuta</i>	Tussock Skink	<i>Pseudemoia pagenstecheri</i>
Hector's Beaked Whale	<i>Mesoplodon hectori</i>	Peregrine Falcon	<i>Falco peregrinus</i>	Great Knot	<i>Calidris tenuirostris</i>		VARANIDAE
Shepherd's Beaked Whale	<i>Tasmacetus shepherdi</i>		HAEMATOPODIDAE	Latham's Snipe	<i>Gallinago hardwickii</i>	Short-tailed Pygmy Goanna	<i>Varanus brevicauda</i>
Cuvier's Beaked Whale	<i>Ziphius cavirostris</i>	Sooty Oystercatcher	<i>Haematopus fuliginosus</i>	Grey-tailed Tattler	<i>Heteroscelus brevipes</i>	Tree Goanna	<i>Varanus varius</i>
		Pied Oystercatcher	<i>Haematopus longirostris</i>	Bar-tailed Godwit	<i>Limosa lapponica</i>		Amphibians
	Birds		LARIDAE	Black-tailed Godwit	<i>Limosa limosa</i>	Knife-footed Frog	<i>Cyclorana cultripes</i>
	ACANTHIZIDAE	Kelp Gull	<i>Larus dominicanus</i>	Whimbrel	<i>Numenius phaeopus</i>	Smooth Frog	<i>Geocrinia laevis</i>
Slender-billed Thornbill (eastern subspecies)	<i>Acanthiza iredalei hedleyi</i>	Common Tern	<i>Sterna hirundo</i>	Ruff	<i>Philomachus pugnax</i>	Brown Toadlet	<i>Pseudophryne bibroni</i>
			MALURIDAE	Wood Sandpiper	<i>Tringa glareola</i>	Small-headed Toadlet	<i>Uperoleia capitulata</i>
Slender-billed Thornbill (western subspecies)	<i>Acanthiza iredalei iredalei</i>	Grey Grasswren	<i>Amytornis barbatus</i>	Terek Sandpiper	<i>Xenus cinereus</i>		
		Striated Grasswren	<i>Amytornis striatus</i>		STRIGIDAE		
Chestnut-breasted Whiteface	<i>Aphelocephala pectoralis</i>	Southern Emu-wren (Kangaroo Island subspecies)	<i>Stipiturus malachurus halmaturinus</i>	Barking Owl	<i>Ninox connivens</i>		
Shy Heathwren (Shy Hylacola)	<i>Calamanthus cautus</i>						

Appendix 4: Species Listed Under Part 13 of the EPBC Act as Threatened, Migratory Marine Species or Cetaceans

Table 18: Species listed under part 13 of the EPBC Act as Threatened, Migratory Marine Species or Cetaceans.

Species group	Individual family or species	EPBC Listing	Species group	Individual family or species	EPBC Listing	
Fish			Reptiles			
Sharks	Grey Nurse Shark (<i>Carcharias runca</i>), East Coast Population	Critically Endangered	Seasnakes	Various	Listed Marine Species (Part 13, Division 4)	
	West Coast Population	Vulnerable				
	Northern Rivers Shark (<i>Glyphis sp. C</i>)	Critically Endangered	Turtles	Olive Ridley Turtle (<i>Lepidochelys olivacea</i>)	Endangered	
	Speartooth Shark (<i>Glyphis sp. A</i>)	Endangered		Loggerhead Turtle (<i>Caretta caretta</i>)	Endangered	
	Great White Shark (<i>Carcharodon carcharias</i>)	Vulnerable		Flatback Turtle (<i>Natator depressus</i>)	Vulnerable	
	Freshwater Sawfish (<i>Pristis microdon</i>)	Vulnerable		Green Turtle (<i>Chelonia mydas</i>)	Vulnerable	
	Green sawfish (<i>Pristis zijsron</i>)	Vulnerable		Hawksbill Turtle (<i>Eretmochelys imbricata</i>)	Vulnerable	
	Whale Shark (<i>Rhincodon typus</i>)	Vulnerable		Leatherback Turtle (<i>Dermochelys coriacea</i>)	Vulnerable	
Syngnathids	Pipefish	Listed Marine Species (Part 13, Division 4)		Other		
	Seadragons		Crocodiles	Freshwater crocodile (<i>Crocodylus johnstoni</i>)	Listed Marine Species (Part 13, Division 4)	
	Seahorses			Saltwater crocodile (<i>Crocodylus porosus</i>)		
Other	Spotted handfish (<i>Brachionichthys hirsutus</i>)	Endangered	Mammals			
	Red handfish (<i>Brachionichthys politus</i>)	Vulnerable	Cetaceans	Southern Right Whale (<i>Eubalaena australis</i>)	Endangered	
	Water Fall Bay and Ziebels Handfish (<i>Sympterychthys sp.</i>)	Vulnerable		Blue Whale (<i>Balaenoptera musculus</i>)	Endangered	
Seabirds		Various, all of class Aves (Birds) are Listed Marine Species (Part 13, Division 4)		Humpback Whale (<i>Megaptera novaeangliae</i>)	Vulnerable	
	Albatross			Sei Whale (<i>Balaenoptera borealis</i>)	Vulnerable	
	Boobies			Fin Whale (<i>Balaenoptera physalus</i>)	Vulnerable	
	Cormorants			Sperm Whale (<i>Physeter macrocephalus</i>)	All Cetaceans are listed under Part 13, Division 3	
	Frigatebirds			False Killer Whale (<i>Pseudorca crassidens</i>)		
	Gannets			Killer Whale (<i>Orcinus orca</i>)		
	Gulls			Pilot Whale (<i>Globicephala macrorhynchus</i> , <i>G. melas</i>)		
	Muttonbirds			Indo Pacific Humpback Dolphin (<i>Sousa chinensis</i>)		
	Noddies			Australian snubnose dolphin (<i>Orcaella heinsohni</i>)		
	Pelicans			Spinner dolphins (<i>Stenella sp.</i>)		
	Penguins			Bottlenose Dolphin (<i>Tursiops truncatus</i>)		
	Petrels			Other		
	Prions			Dugong		Dugong (<i>Dugong dugon</i>)
	Skuas			Pinnipeds	Australian sea lion (<i>Neophoca cinerea</i>)	Vulnerable
	Terns				Australian fur seal (<i>Arctocephalus forsteri</i>)	Vulnerable
	Tropic birds			Southern elephant seal (<i>Mirounga leonina</i>)	Vulnerable	
	Other			Sub-Antarctic fur seal (<i>Arctocephalus tropicalis</i>)	Vulnerable	
				Other	Listed Marine Species (Division 4 of Part 13)	

Appendix 5: *Fisheries Management Act 2007* (SA) Schedule 5 – Protected Species

**Fisheries Management (General) Regulations 2007
Schedule 5—Protected species**

- Murray River Crayfish (*Euastacus armatus*)
- South-east Crayfish (*Euastacus bispinosa*)
- Western Blue Groper (*Achoerodus gouldii*) in the waters of or near Spencer Gulf and Gulf St. Vincent contained within and bounded by a line commencing at Mean High Water Springs closest to 34°56'46.59" South, 135°37'33.92" East (Cape Carnot, Eyre Peninsula), then beginning north-easterly following the line of Mean High Water Springs to the location closest to 35°38'33.80" South, 138°31'20.83" East (Newland Head, Fleurieu Peninsula), then south-westerly to the location on Mean High Water Springs closest to 35°50'32.70" South, 138°08'03.59" East (Cape Willoughby, Kangaroo Island), then beginning north-easterly following the line of Mean High Water Springs to the location closest to 35°53'11.31" South, 136°32'03.88" East (Vennachar Point, Kangaroo Island), then north-westerly to the point of commencement.
- Scalefish of the Family Syngnathidae
- Scalefish of the Genus *Ambassidae*
- Scalefish of any species of *Mogurnda*
- Scalefish of any species of *Nannoperca*
- Scalefish of the following species:
 - River Blackfish (*Gadopsis marmoratus*)
 - Freshwater Catfish (*Tandanus tandanus*)
 - Trout Cod (*Maccullochella macquariensis*)
 - Silver Perch (*Bidyanus bidyanus*)
- White Shark (*Carcharodon carcharias*)

Appendix 6: Gear Types

Appendix 6: The gear types used in commercial fishing operations

Table 19: Commercial fishing gear descriptions and codes.

Gear	Code	Gear	Code	Gear	Code
Traps		Other Gear (cont)		Charter Boat Codes	
Fish Trap (inc Ocean Jacket Trap)	FT	Spade/Fork	SF	Inshore Scale Fishing	IS
Octopus	OT	Razor Fish Tongs	RT	Offshore Scale Fishing	OS
Crab Lift Net (Hoop/Drop Nets)	CN	Hand	HA	Inland Waters Codes	
Lobster Pot	LP	Diving	D	Dab Net	B
Crab Pot	CP	Other (may include diving)	XX	Drum Net	C
Lines		Nets		Electrofisher	D
Handline	HL	Haul Net (Floating Gar Net)	HNF	Gill Net (Small Mesh)	E
Squid Jig	SQ	Haul Net (Sinking Mixed Net)	HNS	Gill Net (Large Mesh)	F
Long Line	LL	Haul Net (Sinking Mesh Net)	HNM	Handline	G
Drop Line	DL	Haul Net	HN	Hauling Net (Small Mesh)	H
Trot Line	TT	Drum Net	DRN	Hauling Net (Large Net)	I
Troll Line	TL	Purse Seine	PS	Purse Seine Net	J
Poles/Rod And Line	PO	Salmon Net	SA	Ring Net	K
Other Gear		Set Gill Net (5 Cm)	GN	Set Line	L
Dab Net	DN	Bait Net (5 Cm)	BN	Swinger Net	M
Cockle Rake	CR	Large Mesh Set Net (>15 Cm)	SH	Yabbie Pot	N
Crab Rake	RA	Prawn Trawl Net	PTN	Other	X

Appendix 7: Additional Reading

Chick, R.C. and Mayfield, S (2012). Central Zone Abalone (*Haliotis laevigata* & *H. rubra*) Fishery. Fishery Assessment Report to PIRSA Fisheries and Aquaculture. South Australian Research and Development Institute (Aquatic Sciences), Adelaide. SARDI Publication No. F2007/000611-4. SARDI Research Report Series No. 652. 67pp.

Chick, R.C., N. Turich, S. Mayfield & J. Dent (2009) Western Zone Abalone (*Haliotis rubra* & *H. laevigata*) Fishery (Region A). Fishery Assessment Report for PIRSA. South Australian Research and Development Institute (Aquatic Sciences), Adelaide, 90pp. SARDI Publication Number F2007/000561-3.

Currie, D.R (2011). South Australian Giant Crab (*Pseudocarcinus gigas*) Fishery Status Report 2009/10. Fishery Status Report to PIRSA Fisheries & Aquaculture. South Australian Research and Development Institute (Aquatic Sciences), Adelaide. SARDI Publication No. F2011/000332-1. SARDI Research Report Series No. 568. 8pp.

Currie, D.R (2010). South Australian Giant Crab (*Pseudocarcinus gigas*) Fishery Status Report 2008/09. South Australian Research and Development Institute (Aquatic Sciences), Adelaide. SARDI Publication No. F2007/000698-3. SARDI Research Report Series No. 427.

Currie, D.R., Dixon, C.D., Roberts, S.D., Hooper, G.E., Sorokin, S.J. and Ward, T.M. (2009). Fishery-independent by-catch survey to inform risk assessment of the Spencer Gulf Prawn Trawl Fishery. Report to PIRSA Fisheries. South Australian Research and Development Institute (Aquatic Sciences), Adelaide. SARDI Publication No. F2009/000369-1. SARDI Research Report Series No. 390.

Dixon, C.D. and Hooper, G.E (2010). Blue Crab (*Portunus pelagicus*) Fishery 2008/09. Stock Assessment Report to PIRSA Fisheries. South Australian Research and Development Institute (Aquatic Sciences), Adelaide. SARDI Publication No. F2007/000729–6. SARDI Research Report Series No. 428.

Dixon, C.D., Rodgers, G.G. and Hooper, G.E (2012). Blue Crab (*Portunus armatus*) Fishery 2010/11. Fishery Assessment Report to PIRSA Fisheries and Aquaculture. South Australian Research and Development Institute (Aquatic Sciences), Adelaide. SARDI Publication No. F2007/000729–8. SARDI Research Report Series No. 604. 75pp.

Dixon, C.D., Hooper, G.E. and Roberts, S.D (2010). Spencer Gulf Prawn *Penaeus (Melicertus) latisulcatus* Fishery 2008/09. Fishery Assessment Report to PIRSA Fisheries. South Australian Research and Development Institute (Aquatic Sciences), Adelaide. SARDI Publication No. F2007/000770-4. SARDI Research Report Series No. 511. 114pp.

Dixon, C. D., Hooper, G.E., Burch, P (2012). Spencer Gulf Prawn *Penaeus (Melicertus) latisulcatus* Fishery 2010/11. Fishery Assessment Report to PIRSA Fisheries and Aquaculture. South Australian Research and Development Institute (Aquatic Sciences), Adelaide. SARDI Publication No. F2007/000770-5. SARDI Research Report Series No. 603. 118pp.

Dixon, C.D., Roberts, S.D and Hooper, G.E (2011). Gulf St Vincent Prawn, *Penaeus (Melicertus) latisulcatus*, Fishery 2009/10. Fishery Assessment Report to PIRSA Fisheries and Aquaculture. South Australian Research and Development Institute (Aquatic Sciences), Adelaide. SARDI Publication No. F2007/000782-4. SARDI Research Report Series No. 526. 121pp.

Appendix 7: Additional Reading

Dixon, C.D., Hooper, G.E and Burch, P (2012). Gulf St Vincent Prawn, *Penaeus (Melicertus) latisulcatus*, Fishery 2010/11. Fishery Assessment Report to PIRSA Fisheries and Aquaculture. South Australian Research and Development Institute (Aquatic Sciences), Adelaide. SARDI Publication No. F2007/000782-5. SARDI Research Report Series No. 631. 112pp.

Ferguson, G (2011). The South Australian Lakes and Coorong Fishery. Fishery Stock Status Report for PIRSA Fisheries. South Australian Research and Development Institute (Aquatic Sciences), Adelaide. SARDI Publication No. F2009/000669-2. SARDI Research Report Series No. 527. 17pp.

Ferguson, G (2012). The South Australian Lakes and Coorong Fishery. Fishery Stock Status Report for PIRSA Fisheries and Aquaculture. South Australian Research and Development Institute (Aquatic Sciences), Adelaide. SARDI Publication No. F2009/000669-3. SARDI Research Report Series No. 598. 17pp.

Ferguson, G.J. (2012). The South Australian Lakes and Coorong Fishery. Fishery Stock Status Report for PIRSA Fisheries and Aquaculture. South Australian Research and Development Institute (Aquatic Sciences), Adelaide. SARDI Publication No. F2009/000669-4. SARDI Research Report Series No. 675. 17pp.

Ferguson, G. J. and Ye, Q (2012). Stock Assessment of Golden perch (*Macquaria ambigua*). Stock Assessment Report for PIRSA Fisheries and Aquaculture. South Australian Research and Development Institute (Aquatic Sciences), Adelaide. F2007/01051-1. SARDI Research Report Series No. 656. 55pp.

Fowler AJ, Lloyd M, Schmarr D (2009). A preliminary consideration of by-catch in the Marine Scalefish fishery of South Australia. South Australian Research and Development Institute (Aquatic Sciences), Adelaide, F2009/000097-1. SARDI Research Report Series No. 365. 79pp.

Fowler A.J., Steer, M.A., Huveneers, C., Lloyd, M.T. and Jackson, W.B (2012). Understanding the movement of Snapper (*Pagrus auratus*) and its contribution to the changing spatial structure of South Australia's Snapper Fishery. Progress report for 2011-12. South Australian Research and Development Institute (Aquatic Sciences), Adelaide. F2012/000366-1. SARDI Research Report Series No. 650. 69pp.

Fowler, A.J., McGarvey, R., Steer, M.A., Feenstra, J.E (2010). The South Australian Marine Scalefish Fishery – Stock Status Report. Report to PIRSA. South Australian Research and Development Institute (Aquatic Sciences), Adelaide. SARDI Publication No. F2007/000565-5. SARDI Research Report Series No. 507. 29pp.

Fowler, A.J., McGarvey, R., Steer, M.A. and Feenstra, J.E. (2012). South Australian Marine Scalefish Fishery. Stock Status Report 2011/12. Report to PIRSA Fisheries and Aquaculture. South Australian Research and Development Institute (Aquatic Sciences), Adelaide, F2007/000565-7. SARDI Research Report Series No. 681. 44pp.

Goldsworthy SD, Hamer D, Page B (2007) Assessment of the implications of interactions between fur seals and sea lions and the southern rock lobster and gillnet sector of the Southern and Eastern Scalefish and Shark Fishery (SESSF) in South Australia. SARDI Aquatic Sciences Publication Number F2007/000711-1. SARDI Research Report Series Number 225, pp 164.

Appendix 7: Additional Reading

Goldsworthy SD., Page BC (2007) A Risk-Assessment Approach to Evaluating the Significance of Seal Bycatch in two Australian Fisheries. *Biological Conservation* 139: 269-285.

Goldsworthy SD, Page B, Shaughnessy PD, Hamer D, Peters KD, McIntosh RR, Baylis AMM, McKenzie J. (2009). Innovative solutions for aquaculture planning and management: addressing seal interactions in the finfish aquaculture industry. FRDC Project 2009/201 Final Report. SARDI Aquatic Sciences Publication Number F2008/000222-1, SARDI Research Report Series Number 288. 290pp.

Goldsworthy, S.D., Page, B., Rogers, P. and Ward, T. (2010) Establishing ecosystem-based management for the South Australian Sardine Fishery: developing ecological performance indicators and reference points to assess the need for ecological allocations South Australian Research and Development Institute (Aquatic Sciences), Adelaide. SARDI Publication No. F2010/000863-1. SARDI Research Report Series No. 529. 173pp.

Goldsworthy SD, Page B, Shaughnessy PD, Linnane, A. (2010). Mitigating seal interactions in the SRLF and the gillnet sector SESSF in South Australia. FRDC Project 2007/041 Final Report. SARDI Aquatic Sciences Publication Number F2009/000613-1, SARDI Research Report Series Number 405, 213pp.

Gorman, D., Hooper, G.E. and Dixon, C.D (2012). West Coast Prawn, *Penaeus (Melicertus) latisulcatus* Fishery 2011. Fishery Status Report to PIRSA Fisheries and Aquaculture. South Australian Research and Development Institute (Aquatic Sciences), Adelaide. SARDI Publication No. F2007/000772-5. SARDI Research Report Series No. 638. 22pp.

Hamer, D.J., Ivey, A, and Ward, T.M. (2009) Operational interactions of the South Australian Sardine Fishery with the Common Dolphin: November 2004 to March 2009. Report to PIRSA Fisheries. SARDI Aquatic Sciences Publication Number F2007/001098–2. SARDI Research Report Series No. 354.

Hamer DJ, Ward TM, Goldsworthy SD, Shaughnessy PD (2009) Effectiveness of the Great Australian Bight Marine Park in protecting the Australian sea lion (*Neophoca cinerea*) from by-catch mortality in shark gill-nets. Report to Great Australian Bight Marine Park Steering Committee. SARDI Aquatic Sciences Publication No. F2009/000227-1, SARDI Research Report Series No. 357. 59pp.

Hooper, G.E., Dixon, C.D. and Roberts, S.D (2011). West Coast Prawn, *Penaeus (Melicertus) latisulcatus* Fishery, 2010. Fishery Status Report to PIRSA Fisheries and Aquaculture. South Australian Research and Development Institute (Aquatic Sciences), Adelaide. SARDI Publication No. F2007/000772-4. SARDI Research Report Series No. 563. 20pp.

Hooper, G.E., Dixon, C.D. and Roberts, S.D (2010). West Coast Prawn, *Penaeus (Melicertus) latisulcatus* Fishery, 2009. Fishery Status Report to PIRSA Fisheries. South Australian Research and Development Institute (Aquatic Sciences), Adelaide. SARDI Publication No. F2007/000772-3. SARDI Research Report Series No. 450. 23p.

Hooper, G.E., Dixon, C.D. and Roberts, S.D (2010). Spencer Gulf Prawn *Penaeus (Melicertus) latisulcatus* Fishery Status Report 2009/10. Fishery Status Report to PIRSA Fisheries. South Australian Research and Development Institute (Aquatic Sciences), Adelaide. SARDI Publication No. F2007/001094-4. SARDI Research Report Series No. 512. 38pp.

Appendix 7: Additional Reading

Hooper, G.E. and Roberts, S.D. (2009). Gulf St Vincent Prawn *Penaeus (Melicertus) latisulcatus* Fishery Status Report 2008/09. South Australian Research and Development Institute (Aquatic Sciences), Adelaide, 40pp. SARDI publication No. F2007/001074-3.

Izzo, C., Gillanders, B.M. and Ward, T.M (2012). Movement patterns and stock structure of Australian sardine (*Sardinops sagax*) off South Australia and the East Coast: implications for future stock assessment and management. Final Report to the Fisheries Research and Development Corporation. South Australian Research and Development Institute (Aquatic Sciences), Adelaide. SARDI Publication No. F2011/000487-1. SARDI Research Report Series No. 611. 102pp.

Knight, M (2009). The South Australian Recreational Charter Boat Fishery Report 2009. South Australian Research and Development Institute (Aquatic Sciences), Adelaide, 46p. SARDI Publication No. F2007/000847-2.

Knight, M.A. and Tsolos, A (2011). South Australian Wild Fisheries Information and Statistics Report 2009/10. South Australian Research and Development Institute (Aquatic Sciences), Adelaide. SARDI Publication No. F2008/000804-3. SARDI Research Report Series No. 521. 60pp.

Knight, M.A. and Tsolos, A (2012). South Australian Wild Fisheries Information and Statistics Report 2010/11. South Australian Research and Development Institute (Aquatic Sciences), Adelaide. SARDI Publication No. F2008/000804-4. SARDI Research Report Series No. 612. 57pp.

Knight, M.A. and Vainickis, A.A (2011). Interactions with Threatened, Endangered or Protected Species in South Australian Managed Fisheries – 2007/08, 2008/09, and 2009/10. Report to PIRSA Fisheries and Aquaculture. South Australian Research and Development Institute (Aquatic Sciences), Adelaide. SARDI Publication No. F2009/000544-1. SARDI Research Report Series No.534. 44pp.

Linnane, A., McGarvey, R., Feenstra, J. and P. Hawthorne (2011). Southern Zone Rock Lobster (*Jasus edwardsii*) Fishery 2009/10. Fishery Assessment Report to PIRSA Fisheries and Aquaculture. South Australian Research and Development Institute (Aquatic Sciences), Adelaide. SARDI Publication No. F2007/000276-4. SARDI Research Report Series No. 560. 95pp.

Linnane, A., McGarvey, R., Feenstra, J. and P. Hawthorne (2010). Southern Zone Rock Lobster (*Jasus edwardsii*) Fishery 2008/09. Fishery assessment report to PIRSA. South Australian Research and Development Institute (Aquatic Sciences), Adelaide, 95pp. SARDI Publication Number F2007/000276-3. SARDI Research Report Series No. 476.

Linnane, A., McGarvey, R., Feenstra, J. and Hawthorne, P (2010). Southern Zone Rock Lobster (*Jasus edwardsii*) Fishery Status Report 2009/10. Status Report to PIRSA Fisheries. South Australian Research and Development Institute (Aquatic Sciences), Adelaide. SARDI Publication No. F2007/000715-4. SARDI Research Report Series No. 514. 24pp.

Linnane, A., McGarvey, R., Feenstra, J. and P. Hawthorne (2012). Southern Zone Rock Lobster (*Jasus edwardsii*) Fishery 2010/11. Fishery Assessment Report to PIRSA Fisheries and Aquaculture. South Australian Research and Development Institute (Aquatic Sciences), Adelaide. SARDI Publication No. F2007/000276-5. SARDI Research Report Series No. 645. 89pp.

Appendix 7: Additional Reading

Linnane, A., McGarvey, R., Feenstra, J. and Hawthorne, P. (2012). Southern Zone Rock Lobster (*Jasus edwardsii*) Fishery 2011/12. Status Report to PIRSA Fisheries and Aquaculture. South Australian Research and Development Institute (Aquatic Sciences), Adelaide. SARDI Publication No. F2007/000715-6. SARDI Research Report Series No. 677. 23pp.

Linnane, A., McGarvey, R., Feenstra, J and M. Hoare (2011). Northern Zone Rock Lobster (*Jasus edwardsii*) Fishery 2009/10. Fishery Assessment Report to PIRSA Fisheries and Aquaculture. South Australian Research and Development Institute (Aquatic Sciences), Adelaide. SARDI Publication No. F2007/000320-4. SARDI Research Report Series No. 561. 82pp.

Linnane, A., McGarvey, R., Feenstra, J and M. Hoare (2010). Northern Zone Rock Lobster (*Jasus edwardsii*) Fishery 2008/09. Fishery assessment report to PIRSA. South Australian Research and Development Institute (Aquatic Sciences), Adelaide, 83pp. SARDI Publication Number F2007/00320-3. SARDI Research Report Series No. 475.

Linnane, A., McGarvey, R., Feenstra, J. and Hoare, M (2010). Northern Zone Rock Lobster (*Jasus edwardsii*) Fishery Status Report 2009/10. Status Report to PIRSA Fisheries. South Australian Research and Development Institute (Aquatic Sciences), Adelaide. SARDI Publication No. F2007/000714-4. SARDI Research Report Series No. 513. 21pp.

Linnane, A., McGarvey, R., Feenstra, J and M. Hoare (2012). Northern Zone Rock Lobster (*Jasus edwardsii*) Fishery 2010/11. Fishery assessment report to PIRSA Fisheries and Aquaculture. South Australian Research and Development Institute (Aquatic Sciences), Adelaide. SARDI Publication No. F2007/000320-5. SARDI Research Report Series No. 644. 78pp.

Linnane, A., McGarvey, R., Feenstra, J. and Hoare, M. (2012). Northern Zone Rock Lobster (*Jasus edwardsii*) Fishery 2011/12. Status Report to PIRSA Fisheries and Aquaculture. South Australian Research and Development Institute (Aquatic Sciences), Adelaide. SARDI Publication No. F2007/000714-6. SARDI Research Report Series No. 678. 22pp.

Mayfield, S. and Hogg, A (2011). Southern Zone Abalone Fishery (*Haliotis rubra* & *H. laevigata*). Fishery Assessment Report for PIRSA Fisheries and Aquaculture. South Australian Research and Development Institute (Aquatic Sciences), Adelaide. SARDI Publication No. F2007/000552-3. SARDI Research Report Series No. 535. 57pp.

Mayfield, S., Carlson, I.J., and Chick, R.C (2010). Central Zone Abalone Fishery (*Haliotis laevigata* and *H. rubra*) Stock Assessment Report for PIRSA Fisheries. CONFIDENTIAL. South Australian Research and Development Institute (Aquatic Sciences), Adelaide. SARDI Publication No. F2007/000611-3. SARDI Research Report Series No. 510. 69pp.

Mayfield, S, Hogg, A, Saunders, TM & Burch, P (2009). Southern Zone Abalone (*Haliotis rubra* & *H. laevigata*) Fishery: Fishery Assessment Report for PIRSA. SARDI Aquatic Sciences Publication No.F2007/000552-2. SARDI Research Report Series No. 350. April 2009.

Sorokin, S.J., Connolly, R.M. & Currie, D.R. (2009) Syngnathids of the Spencer Gulf – morphometrics and isotopic signatures. South Australian Research and Development Institute (Aquatic Sciences), Adelaide, 30pp. SARDI Publication No. F2009/000655-1.

Appendix 7: Additional Reading

Steer, M.A., McGarvey, R., Fowler, A.J., Burch, P., Feenstra, J.E., Jackson, W.B. and Lloyd, M.T (2012). Southern Garfish (*Hyporhamphus melanochir*) Fishery. Report to PIRSA Fisheries and Aquaculture. South Australian Research and Development Institute (Aquatic Sciences), Adelaide. SARDI Publication No. F2007/000720-3. SARDI Research Report Series No. 658. 76pp.

Stobart, B., Dent, J.J., Matthews, R.C., Chick, R.C. and Mayfield, S (2011). Western Zone Abalone (*Haliotis rubra* & *H. laevigata*) Fishery (Region A). Fisheries status report to PIRSA Fisheries and Aquaculture. South Australian Research and Development Institute (Aquatic Sciences), Adelaide. SARDI Publication No. F2011/000290-1. SARDI Research Report Series No. 565. 46pp.

Stobart, B., Mayfield, S., Dent, J., Matthews, D.J. and Chick, R.C (2012). Western Zone Abalone (*Haliotis rubra* & *H. laevigata*) Fishery (Region A). Fishery Stock Assessment Report to PIRSA Fisheries and Aquaculture. South Australian Research and Development Institute (Aquatic Sciences), Adelaide. SARDI Publication No. F2007/000561-4. SARDI Research Report Series No. 660. 118pp.

Stobart, B., Dent, J.J., Matthews, D., Chick, R.C and Mayfield, S (2010) Western Zone Abalone (*Haliotis laevigata* & *H. rubra*) Fishery (Region B). Fishery Assessment Report to PIRSA Fisheries. South Australian Research and Development Institute (Aquatic Sciences), Adelaide. SARDI Publication No. F2010/000389-1. SARDI Research Report Series No. 485. 23pp.

Stobart, B., Mayfield, S., Dent, J. and Matthews, D.J (2012).Western Zone Abalone (*Haliotis laevigata* & *H. rubra*) Fishery (Region B). Fishery Stock Assessment Report to PIRSA Fisheries and Aquaculture. South Australian Research and Development Institute (Aquatic Sciences), Adelaide. SARDI Publication No. F2010/000389-2. SARDI Research Report Series No. 661. 32pp.

Tilzey, R.D.J., Goldsworthy, S., Cawthorn, M., Calvert, N., Hamer, D., Russell, S., Shaughnessy, P.D., Wize, B. and Stewardson, C (2006). Assessment of seal-fishery interactions in the winter blue grenadier fishery off west Tasmania and the development of fishing practices and Seal Exclusion Devices to mitigate seal bycatch by factory trawlers. Final Report to the FRDC. Project no. 2001/008. February 2006. 69pp.

Ward, T.M., Ivey, A., Hamer, D.J. and Burch, P (2010). Effectiveness of an industry Code of Practice in mitigating the operational interactions of the South Australian Sardine Fishery with the short-beaked common dolphin (*Delphinus delphis*). South Australian Research and Development Institute (Aquatic Sciences), Adelaide. SARDI Publication No. F2010/000726-1. SARDI Research Report Series No. 493. 38pp.

Ward, T.M., Ivey, A. and Burch, P. (2012). Effectiveness of an industry Code of Practice in mitigating the operational interactions of the South Australian Sardine Fishery with the short-beaked common dolphin (*Delphinus delphis*). Report to PIRSA Fisheries and Aquaculture. South Australian Research and Development Institute (Aquatic Sciences), Adelaide. SARDI Publication No. F2010/000726-3. SARDI Research Report Series No. 666. 27pp.

Ward, T.M., Burch, P. and Ivey, A.R (2010). South Australian Sardine (*Sardinops sagax*) Fishery: Stock Assessment Report 2010. Report to PIRSA Fisheries. South Australian Research and Development Institute (Aquatic Sciences), Adelaide. SARDI Publication No. F2007/000765-3. SARDI Research Report Series No.496. 105pp.

Appendix 7: Additional Reading

Ward T.M., Burch, P. and Ivey, A.R. (2012). South Australian Sardine (*Sardinops sagax*) Fishery: Stock Assessment Report 2012. Report to PIRSA Fisheries and Aquaculture. South Australian Research and Development Institute (Aquatic Sciences), Adelaide. SARDI Publication No. F2007/000765-4. SARDI Research Report Series No. 667. 101pp.

Ward, T.M., Lyle, J., Keane, J.P., Begg, G.A., Hobsbawn. P., Ivey. A.R., Sakabe. R. Steer, M.A (2012). Commonwealth Small Pelagic Fishery: Fishery Assessment Report 2011. Report to the Australian Fisheries Management Authority. South Australian Research and Development Institute (Aquatic Sciences), Adelaide. SARDI Publication No. F2010/000270-3. SARDI Research Report Series No. 614. 98pp.

Vainickis, A.A (2010). SARDI Aquatic Sciences Information Systems Quality Assurance and Data Integrity Report 2010. South Australian Research and Development Institute (Aquatic Sciences), Adelaide. SARDI Publication No. F2009/000267-2. SARDI Research Report Series No. 497. 213pp.