APPENDIX 10

Ecological Assessment

Manildra Park Pty Ltd

Ecological Assessment for Marine Fuel Storage/Distribution and Biodiesel Production Facility, Kooragang Island

October 2007

Umwelt
Environmental Consultants

Ecological Assessment for Marine Fuel Storage/Distribution and Biodiesel Production Facility, Kooragang Island

Prepared by

Umwelt (Australia) Pty Limited

on behalf of

Manildra Park Pty Ltd

Project Director:	Barbara Crossley		
Project Manager:	Rod Williams		
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Umwelt
Environmental Consultants

2/20 The Boulevarde
PO Box 838
Toronto NSW 2283

Ph: 02 4950 5322
Fax: 02 4950 5737
Email: mail@umwelt.com.au
Website: www.umwelt.com.au

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1.0 Introduction

Manildra Park Pty Ltd proposes to establish a marine fuel and diesel distribution and biodiesel production facility within the industrial estate at the eastern end of Kooragang Island. The proposed development area (hereafter referred to as the study area) is located off Greenleaf Road (see **Figure 1**). Two large storage tanks currently occupy a large portion of the study area, and are indicative of the previous use of the study area for industrial purposes.

2.0 Methods

2.1 Site Inspection

A brief site inspection was undertaken by an Umwelt (Australia) Pty Limited (Umwelt) ecologist on 13 February 2007. The aims of the site inspection were to:

- describe the ecological characteristics of the study area, including vegetation communities present, floristic composition, and fauna habitat values;
- identify any endangered ecological communities (EECs) or threatened flora and fauna species, listed under the *Threatened Species Conservation Act 1995* (TSC Act) or the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), occurring within or with potential to occur within the study area; and
- identify any EPBC Act listed matters of national environmental significance potentially impacted by the proposed development that may require EPBC referral to the Minister.

The habitats present within the study area were identified, and any flora or fauna species observed were recorded. Particular attention was paid to the green and golden bell frog (*Litoria aurea*) which is known to occur elsewhere on Kooragang Island. Systematic flora sampling surveys were not undertaken due to the highly disturbed nature of the study area.

2.2 Literature Review

A review of relevant and available literature was undertaken. The literature review aimed to develop a list of threatened species, populations and EECs previously recorded on Kooragang Island, that have the potential to occur within the study area. The key documents reviewed were:

- *Environmental Assessment Kooragang Coal Terminal: Proposed Increase to Throughput Capacity* (Umwelt 2006); and
- *Environmental Assessment Newcastle Coal Infrastructure Group Coal Export Terminal* (Newcastle Coal Infrastructure Group 2006).

In addition, searches of relevant ecological databases were undertaken. This consisted of:

- a 10 kilometre radius search from the centre of the Study Area of the Department of Environment and Conservation (DEC) Atlas of NSW Wildlife Port Stephens 1:100,000 Map Sheet (February 2007);

Source: Aerial Photo: Port Waratah Coal Services

0 0.25 0.5 1.0km

1:25 000

Legend

Greenleaf Road Terminal

FIGURE 1

Locality Plan

- a 10 kilometre radius search from the centre of the Study Area of the DEC Atlas of NSW Wildlife Newcastle 1:100,000 Map Sheet (February 2007);

- a 10 kilometre radius search from the centre of the Study Area of the DEC Atlas of NSW Wildlife Lake Macquarie 1:100,000 Map Sheet (February 2007); and

- a 10 kilometre radius search from the centre of the Study Area of the Department of Environment and Water Resources (DEWR) Protected Matters Search Tool for (7 February 2007).

The DEWR Protected Matters Database provided a list of threatened species with the potential to occur within the study area based on DEWR habitat modelling.

Records from the database searches and literature review were combined to form a table of potentially occurring threatened flora and fauna species, (**Tables 4.1** and **4.2** respectively), endangered populations and EECs.

3.0 Results

The site inspection identified the study area as a highly modified environment, with a history of industrial use. The study area has been filled with imported material and the remaining vegetation is highly modified, largely comprising introduced species. The floristic diversity of the study area is very low, with only 17 flora species recorded during the site inspection, including 11 introduced species. Appendix A contains the flora list for the site.

The fauna habitats of the study area are also highly disturbed and very limited. No bird species were observed within the study area during the site inspection. Six bird species were recorded in similar habitats nearby, including the Australian Pelican (*Pelicanus conspicillatus*), masked lapwing (*Vanellus miles*), crested pigeon (*Ocyphaps lophotes*) and magpie lark (*Grallina cyanoleuca*). Two introduced birds were recorded: the feral pigeon (*Columba livia*) and common mynah (*Acridotheres tristis*). These bird species would potentially forage within the study area.

There are many important habitat areas for migratory waders located on Kooragang Island and elsewhere in the Hunter Estuary, however the study area does not provide foraging or roosting opportunities for these birds. The height of the proposed diesel/biodiesel facility will be approximately 24 metres, which is 8 metres higher than the storage tanks currently within the study area. This height is not likely to interfere with the flyway routes of any migratory bird species.

The earthen bund surrounding the two large storage tanks within the study area were investigated for potential amphibian habitat, as it was thought that there may be water ponding behind the bund. Inspection within the bunded area found no ponded water, despite recent moderate rainfall (33mm on 12 February 2007 and 36mm 13 February 2007, recorded at the Bureau of Meteorology Newcastle Nobbys Signal Station AWS (Station No 061055). No other areas of the study area have potential for sufficient water ponding to support amphibian species. Consequently, the study area does not support habitat for the threatened amphibian species, green and golden bell frog (*Litoria aurea*).

4.0 Threatened Species

No threatened species, endangered populations or EECs were recorded or have been previously recorded within the study area. A search of ecological databases (**Section 2.2**) and relevant literature found eight threatened flora species, two EECs (**Table 4.1**) and 45 threatened fauna species (**Table 4.2**, excluding marine and pelagic species) previously recorded (or with potential to occur based on DEWR modelling) within a 10 kilometre radius of the study area.

4.1 Threatened Flora Species

The threatened flora species and EECs recorded from the database searches, literature review and expert knowledge are listed in **Table 4.1**. This table also indicates their potential to occur within the study area. The assessment of species' potential to occur was determined based on a comparison between the habitats present within the study area and the known requirements of each species.

Table 4.1 - Threatened Flora Species Recorded within a 10 Kilometre Radius of the Study Area

Common Name ***Scientific Name***	**Legal Status**	**Record Source**	**Potential to Occur**
Zannichellia palustris	E (TSC)	DEC Wildlife Atlas Newcastle Coal Infrastructure Group (2006) (Recorded)	No potential
heath wrinklewort *Rutidosis heterogama*	V (EPBC) V (TSC)	DEC Wildlife Atlas	No potential
heart-leaved stringybark *Eucalyptus camfieldii*	V (EPBC) V (TSC)	DEC Wildlife Atlas DEWR Protected Matters Search*	No potential
Parramatta red gum *Eucalyptus parramattensis* subsp. *decadens*	V (EPBC) V (TSC)	DEC Wildlife Atlas DEWR Protected Matters Search*	No potential
magenta lillypilly *Syzygium paniculatum*	V (EPBC) V (TSC)	DEC Wildlife Atlas	No potential
Newcastle doubletail *Diuris praecox*	V (EPBC) V (TSC)	DEC Wildlife Atlas DEWR Protected Matters Search*	No potential
black-eyed Susan *Tetratheca juncea*	V (EPBC) V (TSC)	DEC Wildlife Atlas DEWR Protected Matters Search*	No potential
leafless tongue orchid *Cryptostylis hunteriana*	V (EPBC) V (TSC)	DEWR Protected Matters Search*	No potential
Coastal Saltmarsh on NSW north coast, Sydney basin and south-east corner bioregions	EEC (TSC)	Newcastle Coal Infrastructure Group (2006) (Recorded)	No potential
Freshwater Wetlands on Coastal Floodplains of the NSW north coast, Sydney basin and south-east corner bioregions	EEC (TSC)	Newcastle Coal Infrastructure Group (2006) (Recorded)	No potential

Notes
V = Vulnerable
E = Endangered
EEC = Endangered Ecological Community
TSC = *Threatened Species Conservation Act* 1995
EPBC = *Environment Protection and Biodiversity Conservation Act* 1999
DEC = Department of Environment and Conservation
DEWR = Department of Environment and Water Resources
* = records from the DEWR protected matters search are not actual records, but species with potential to occur based on DEWR habitat modelling.

No threatened flora species or EECs were found to have potential to occur within the study area. While the threatened flora species *Zannichellia palustris* is known to occur elsewhere on Kooragang Island, no suitable habitat for this species occurs within the study area. It is possible that the EEC *Coastal Saltmarsh* once occupied the study area (prior to it being filled), however no evidence of this EEC currently occurs on site, and it is unlikely that regeneration of this EEC would occur.

4.2 Threatened Fauna Species

Table 4.2 lists the 45 threatened fauna species (excluding marine and pelagic species) recorded in (or with the potential to occur based on DEWR modelling) within a 10 kilometre radius of the study area. The potential for each of these species to occur within the study area is indicated, based on a comparison between the habitats present within the study area and the known requirements of each species.

Table 4.2 - Threatened Fauna Species Recorded within a 10 Kilometre Radius of the Study Area

Common Name ***Scientific Name***	**Legal Status**	**Source of Record**	**Potential to Occur**
green and golden bell frog *Litoria aurea*	E (TSC) V (TSC)	DEC Wildlife Atlas Newcastle Coal Infrastructure Group (2006) (Recorded)	No potential
Littlejohns treefrog *Litoria littlejohni*	V (EPBC) V (TSC)	DEWR Protected Matters Search*	No potential
broad-headed snake *Hoplocephalus bungaroides*	V (EPBC) E (TSC)	DEWR Protected Matters Search*	No potential
painted snipe *Rostratula benghalensis australis*	E (TSC) V (EPBC)	DEWR Protected Matters Search	No potential
magpie goose *Anseranas semipalmata*	V (TSC)	DEC Wildlife Atlas DEWR Protected Matters Search*	No potential
black-necked stork *Ephippiorhynchus asiaticus*	E (TSC)	DEC Wildlife Atlas	No potential
bush stone-curlew *Burhinus grallarius*	E (TSC)	DEC Wildlife Atlas	No potential
swift parrot *Lathamus discolor*	E (TSC) E (EPBC)	DEC Wildlife Atlas DEWR Protected Matters Search*	No potential
regent honeyeater *Xanthomyza phrygia*	E (EPBC) E (TSC)	DEC Wildlife Atlas DEWR Protected Matters Search*	No potential

Table 4.2 - Threatened Fauna Species Recorded within a 10 Kilometre Radius of the Study Area (cont)

Common Name ***Scientific Name***	**Legal Status**	**Source of Record**	**Potential to Occur**
blue-billed duck *Oxyura australis*	V (TSC)	DEC Wildlife Atlas Newcastle Coal Infrastructure Group (2006) (Recorded)	No potential
freckled duck *Stictonetta naevosa*	V (TSC)	DEC Wildlife Atlas Newcastle Coal Infrastructure Group (2006) (Recorded)	No potential
black bittern *Ixobrychus flavicollis*	V (TSC)	DEC Wildlife Atlas	No potential
Australasian bittern *Botaurus poiciloptilus*	V (TSC)	DEC Wildlife Atlas Newcastle Coal Infrastructure Group (2006) (Recorded)	No potential
square-tailed kite *Lophoictinia isura*	V (TSC)	DEC Wildlife Atlas	No potential
osprey *Pandion haliaetus*	V (TSC)	DEC Wildlife Atlas	No potential
great knot *Calidris tenuirostris*	V (TSC)	DEC Wildlife Atlas	No potential
broad-billed sandpiper *Limicola falcinellus*	V (TSC)	DEC Wildlife Atlas	No potential
black-tailed godwit *Limosa limosa*	V (TSC)	DEC Wildlife Atlas Newcastle Coal Infrastructure Group (2006) (Recorded)	No potential
terek sandpiper *Xenus cinereus*	V (TSC)	DEC Wildlife Atlas	No potential
comb-crested jacana *Irediparra gallinacea*	V (TSC)	DEC Wildlife Atlas	No potential
pied oystercatcher *Haematopus longirostris*	V (TSC)	DEC Wildlife Atlas	No potential
sooty oystercatcher *Haematopus fuliginosus*	V (TSC)	DEC Wildlife Atlas	No potential
greater sand-plover *Charadrius leschenaulti*	V (TSC)	DEC Wildlife Atlas	No potential
wompoo fruit-dove *Ptilinopus magnificus*	V (TSC)	DEC Wildlife Atlas	No potential
rose-crowned fruit-dove *Ptilinopus regina*	V (TSC)	DEC Wildlife Atlas	No potential
superb fruit-dove *Ptilinopus superbus*	V (TSC)	DEC Wildlife Atlas	No potential
glossy black-cockatoo *Calyptorhynchus lathami*	V (TSC)	DEC Wildlife Atlas	No potential
turquoise parrot *Neophema pulchella*	V (TSC)	DEC Wildlife Atlas	No potential

Table 4.2 - Threatened Fauna Species Recorded within a 10 Kilometre Radius of the Study Area (cont)

Common Name ***Scientific Name***	**Legal Status**	**Source of Record**	**Potential to Occur**
barking owl *Ninox connivens*	V (TSC)	DEC Wildlife Atlas	No potential
powerful owl *Ninox strenua*	V (TSC)	DEC Wildlife Atlas	No potential
sooty owl *Tyto tenebricosa*	V (TSC)	DEC Wildlife Atlas	No potential
masked owl *Tyto novaehollandiae*	V (TSC)	DEC Wildlife Atlas	No potential
brush-tailed phascogale (southern subsp.) *Phascogale tapoatafa tapoatafa*	V (TSC)	DEC Wildlife Atlas	No potential
koala *Phascolarctos cinereus*	V (TSC)	DEC Wildlife Atlas	No potential
squirrel glider *Petaurus norfolcensis*	V (TSC)	DEC Wildlife Atlas	No potential
long-nosed potoroo *Potorous tridactylus*	V (TSC) V (EPBC)	DEWR Protected Matters Search*	No potential
spotted-tailed quoll *Dasyurus maculatus maculatus*	E (EPBC) V (TSC)	DEWR Protected Matters Search*	No potential
grey-headed flying-fox *Pteropus poliocephalus*	V (TSC) V (EPBC)	DEC Wildlife Atlas DEWR Protected Matters Search* Newcastle Coal Infrastructure Group (2006) (Recorded)	No potential
yellow-bellied sheathtail bat *Saccolaimus flaviventris*	V (TSC)	DEC Wildlife Atlas	No potential
eastern freetail-bat *Mormopterus norfolkensis*	V (TSC)	DEC Wildlife Atlas	No potential
little Bentwing-bat *Miniopterus australis*	V (TSC)	DEC Wildlife Atlas Newcastle Coal Infrastructure Group (2006) (Recorded)	No potential
eastern bentwing-bat *Miniopterus schreibersii oceanensis*	V (TSC)	DEC Wildlife Atlas	No potential
large-footed myotis *Myotis adversus*	V (TSC)	DEC Wildlife Atlas	No potential
greater broad-nosed bat *Scoteanax rueppellii*	V (TSC)	DEC Wildlife Atlas	No potential
large-eared pied bat *Chalinolobus dwyeri*	V (TSC) V (EPBC)	DEWR Protected Matters Search*	No potential

Notes
V = vulnerable
E = endangered
TSC = *Threatened Species Conservation Act* 1995
EPBC = *Environment Protection and Biodiversity Conservation Act* 1999
DEC = Department of Environment and Conservation
DEWR = Department of Environment and Water Resources
* = records from the DEWR protected matters search are not actual records, but species with potential to occur based on DEWR habitat modelling.

No threatened fauna species were found to have potential to occur within the study area. While the green and golden bell frog (*Litoria aurea*) is known to occur elsewhere on Kooragang Island, no suitable habitat for this species occurs within the study area (**Section 3.0**).

The grey-headed flying fox (*Pteropus poliocephalus*) and several of the threatened micro-bats may fly over the study area when traveling between habitats, however there are no suitable foraging resources for such species within the study area.

5.0 EPBC Act Matters of National Significance

If the actions of a proposed development trigger the EPBC Act, approval from the Commonwealth Minister for Environment and Water Resources must be sought, in addition to any state or local government approvals. The EPBC Act is triggered if the proposed development is likely to have a significant impact on any Matters of National Environmental Significance (MNES), as listed under the EPBC Act i.e. a 'controlled action'. These seven MNES are listed in **Table 5.1**, which also provides a discussion of the potential for the proposed development to have a significant impact on any of these MNES.

Table 5.1 - Relevance of any EPBC Act MNES to the Proposed Development

Matters of National Environmental Significance	Potential to Occur within the Study Area	Potential for Significant Impact
The World Heritage values of declared World Heritage properties.	There are no World Heritage sites within the study area.	No World Heritage Sites will be impacted upon as a result of the proposed development.
The national heritage values of places on the National Heritage List.	There are no National Heritage places within the study area.	No National Heritage places will be impacted upon as a result of the proposed development.
The ecological character of declared Ramsar wetlands.	The Hunter Estuary Wetlands Ramsar Wetland site is located approximately 1.2 kilometres from the study area. This Ramsar site comprises Kooragang Nature Reserve and Shortland Wetlands.	The proposed development will not have a significant impact on the Hunter Estuary Wetlands Ramsar site.
Threatened species (other than extinct and conservation dependent species) and ecological communities (other than vulnerable ecological communities) listed under the EPBC Act.	There are no EPBC Act listed threatened species or ecological communities occurring within or with potential to occur within the study area.	The proposed development will not have a significant impact on any EPBC Act listed threatened species or ecological communities.

Table 5.1 - Relevance of any EPBC Act MNES to the Proposed Development (cont)

Matters of National Environmental Significance	Potential to Occur within the Study Area	Potential for Significant Impact
Migratory species listed under the EPBC Act.	A search of the EPBC Act Protected Matters Database identified 55 migratory species with potential to occur within a 10km radius of the study area (**Appendix B**). Due to the highly modified environment of the study area, and the lack of native vegetation, there is no potential foraging or nesting habitat for any EPBC Act listed migratory species. The proposed development will not interfere with the flyway routes of any migratory bird species.	The proposed development will not have a significant impact on any EPBC Act listed migratory species.
Nuclear actions that are likely to have a significant impact on the environment.	The proposed development does not involve any nuclear actions.	The proposed development does not involve any nuclear actions that may have a significant impact on the environment.
The Commonwealth marine environment.	The loading and unloading of goods between the storage facility and marine vessels is not likely to significantly impact on the Commonwealth marine environment. Detailed risk assessment and extensive control measures are in place to ensure that no spillage or other adverse impact will occur on the marine environment as a result of the proposed development.	The proposed development will not have a significant impact on any areas of the Commonwealth marine environment.

In summary from **Table 5.1**, the proposed development will not have a significant direct or indirect impact on any matters of national environmental significance, and therefore the project does not trigger the controlled action definition.

6.0 Impacts of Proposed Development

The proposed development will involve the construction of infrastructure across the majority of the study area. A transfer pipeline will be constructed between the terminal and the Kooragang No.2 and No.3 wharves and the Wallarah berth. The pipeline will be located within the road reserves of Greenleaf and Heron roads. Movement of goods between the wharves and the facility will utilise existing access roads. Due to the study area comprising a highly modified environment, with limited native flora and fauna diversity, there will be no impacts on any threatened species, endangered populations, EECs or their habitats as a result of this proposed development.

7.0 Conclusion

There are no threatened species, endangered populations or EECs recorded or with potential to occur within the study area. The vegetation and habitats of the study area are highly degraded, comprising significantly modified vegetation, and very limited fauna habitat values. The proposed development will not have a significant direct or indirect impact on any matters of national environmental significance, and therefore does not trigger the controlled action definition under the EPBC Act. There are no ecological constraints to the proposed development.

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APPENDIX A

Flora Species List

Appendix A – Flora Species List

The following list was developed from surveys of the study area detailed in **Section 1** of the main report. It includes all species of vascular plants observed on the study area during fieldwork. Not all species are readily detected at any one time of the year, therefore the list will not necessarily include all plant species likely to occur in the study area. Many species flower only during restricted periods of the year, and some flower only once in several years. In the absence of flowering material, many of these species cannot be identified, or even detected.

Names of classes and families follow a modified Cronquist (1981) System.

Any species that could not be identified to the lowest taxonomic level are denoted in the following manner:

sp.	specimens that are identified to genus level only;
?	specimens for which identification was uncertain;
prob.	specimens for which identification was considered highly likely but not definite;
poss.	specimens for which identification was considered likely but not definite;

The following abbreviations or symbols are used in the list:

asterisk (*)	denotes species not indigenous to the study area;
subsp.	subspecies;
var.	variety;
f.	forma; and
X	hybrid.

All vascular plants recorded or collected were identified using keys and nomenclature in Harden (1992, 1993, 2000 & 2002) and Wheeler et al. (2002). Where known, changes to nomenclature and classification have been incorporated into the results, as derived from *PlantNET* (Botanic Gardens Trust 2006), the on-line plant name database maintained by the National Herbarium of New South Wales. Names revised since Harden (1992, 1993, 2000 & 2002) are listed in **Table 1** below.

Common names used follow Harden (1992, 1993, 2000 & 2002) where available, and draw on other sources such as local names where these references do not provide a common name.

Table 1 Flora Species List

Family	Scientific Name	Common Name
Magnoliopsida (Liliidae - monocots)		
Commelinaceae	**Tradescantia fluminensis*	wandering Jew
Cyperaceae	**Cyperus dubius*	
Cyperaceae	**Cyperus eragrostis*	umbrella sedge
Poaceae	**Panicum maximum*	guinea grass
Poaceae	*Cynodon dactylon*	common couch
Poaceae	*Festuca* sp.	
Poaceae	*Paspalum* sp.	
Magnoliopsida (Magnoliidae - dicots)		
Aizoaceae	**Galenia pubescens* var. *pubescens*	galenia
Amaranthaceae	**Alternanthera pungens*	khaki weed
Asteraceae	**Chrysanthemoides monilifera* subsp. *rotundata*	bitou bush
Asteraceae	**Taraxacum officinale*	dandelion
Asteraceae	*Ambrosia* sp.	lacy ragweed
Avicenniaceae	*Avicennia marina*	grey mangrove
Brassicaceae	**Lepidium bonariense*	
Malvaceae	**Sida rhombifolia*	Paddys lucerne
Plantaginaceae	**Plantago lanceolata*	lamb's tongues
Portulacaceae	*Portulaca oleracea*	pigweed

APPENDIX B

Migratory Species

Appendix B – Listed Migratory Species

Below is a list of migratory species and marine bird species listed under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) which have the potential to occur within a 10 kilometre radius of the study area. These records were obtained from a search of the Department of Environment and Water Resources (DEWR) Protected Matters Search Tool.

Species	**Status**
white-bellied sea-eagle *Haliaeetus leucogaster*	Migratory – terrestrial Marine
white-throated needletail *Hirundapus caudacutus*	Migratory – terrestrial Marine
rainbow bee-eater *Merops ornatus*	Migratory – terrestrial Marine
black-faced monarch *Monarcha melanopsis*	Migratory – terrestrial Marine
satin flycatcher *Myiagra cyanoleuca*	Migratory - terrestrial
rufous fantail *Rhipidura ruffifrons*	Migratory – terrestrial Marine
regent honeyeater *Xanthomyza phrygia*	Migratory - terrestrial
Amsterdam albatross *Diomedea amsterdamensis*	Migratory – wetland Marine
antipodean albatross *Diomedea antipodensis*	Migratory –wetland Marine
Tristan albatross *Diomedea dabbenena*	Migratory – wetland Marine
wandering albatross *Diomodea exulans*	Migratory – wetland Marine
Gibsons albatross *Diomodea gibsoni*	Migratory – wetland Marine
southern giant-petrel *Macronectes giganteus*	Migratory – wetland Marine
northern giant-petrel *Macronectes hallii*	Migratory – wetland Marine
Goulds petrel *Pterodroma leucoptera leucoptera*	Migratory - wetland
streaked shearwater *Puffinus leucomelas*	Migratory - wetland
Bullers albatross *Thalassarche bulleri*	Migratory – wetland Marine
shy albatross *Thalassarche cauta*	Migratory – wetland Marine
Campbell albatross *Thalassarche impavida*	Migratory – wetland Marine

Species	Status
black-browed albatross *Thalassarche melanophris*	Migratory – wetland Marine
Salvins albatross *Thalassarche salvini*	Migratory – wetland Marine
white-capped albatross *Thalassarche steadi*	Migratory – wetland Marine
Brydes whale *Balaenoptera edeni*	Migratory - marine
blue whale *Balaenoptera musculus*	Migratory - marine
pygmy right whale *Caperea marginata*	Migratory - marine
southern right whale *Eubalaena marginata*	Migratory - marine
dusky dolphin *Lagenorhynchus obscurus*	Migratory - marine
humpback whale *Megaptera novaeangliae*	Migratory - marine
killer whale *Orcinus orca*	Migratory - marine
green turtle *Chelonia mydas*	Migratory - marine
leathery turtle *Dermochelys coriacea*	Migratory - marine
great white shark *Carcharodon carcharias*	Migratory - marine
whale shark *Rhincodon typus*	Migratory - marine
fork-tailed swift *Apus pacificus*	Marine
great egret *Ardea alba*	Marine
cattle egret *Ardea ibis*	Marine
ruddy turnstone *Arenaria interpres*	Marine
curlew sandpiper *Calidris ferruginea*	Marine
streaked shearwater *Calonectris leucomelas*	Marine
great skua *Catharacta skua*	Marine
lesser sand plover *Charadrius monoglus*	Marine

Species	Status
Lathams snipe *Gallinago hardwickii*	Marine
swift parrot *Lathamus discolor*	Marine
broad-billed sandpiper *Limicola falcinellus*	Marine
bar-tailed godwit *Limosa lapponica*	Marine
black-tailed godwit *Limosa limosa*	Marine
eastern curlew *Numenius madagascariensis*	Marine
whimbrel *Numenius phaeops*	Marine
Pacific golden plover *Pluvialis fulva*	Marine
painted snipe *Rostratula benhalensis*	Marine
little tern *Sterna albifrons*	Marine
yellow-nosed albatross *Thalassarche chlororhynchos*	Marine
common greenshank *Tringa nebularia*	Marine
marsh sandpiper *Tringa stagnatilis*	Marine
terek sandpiper *Xenus cinereus*	Marine