

**TABLE A1.1 HOLLOW BEARING TREE SURVEY- TREES TO BE REMOVED**

CLIENT: Crighton Properties...REF NO....8065.... DATE.....17 August 2007.....ASSESSOR.....Paul Shelley.....SHEET NO.....3....of.....5.....

TREE LOCATIONS RECORDED ON MAP ☒ Y/N SITE SURVEY SHEET COMPLETED ☒ Y/N

| Tree Tag Number       |         | 18                 | 27                    | 35               | 36        | 38                 | 39                  | 40                  | 41                  |
|-----------------------|---------|--------------------|-----------------------|------------------|-----------|--------------------|---------------------|---------------------|---------------------|
| Species               |         | <i>E.pilularis</i> | <i>S. glomulifera</i> | <i>E.saligna</i> | Stag      | <i>E.pilularis</i> | <i>E. pilularis</i> | <i>E. pilularis</i> | <i>E. pilularis</i> |
| DBH (cm)              |         | 145                | 130                   | 40               | 60        | 140                | 95                  | 80                  | 100                 |
| Spread (m)            |         | 18                 | 15                    | 6                | 8         | 30                 | 15                  | 15                  | 20                  |
| Height (m)            |         | 25                 | 25                    | 18               | 20        | 35                 | 25                  | 20                  | 30                  |
| Position              |         | Mid slope          | Mid slope             | Low slope        | Low slope | Top slope          | Mid slope           | Top slope           | Top slope           |
| % Health              |         |                    | 80                    | 50               | 0         | 80                 | 70                  | 80                  | 70                  |
| Fauna Use             |         |                    |                       |                  |           |                    |                     |                     |                     |
| <b>HOLLOWS</b>        |         |                    |                       |                  |           |                    |                     |                     |                     |
| I Broken Trunk        | 0-10cm  |                    |                       |                  |           |                    |                     |                     |                     |
|                       | 10-15cm |                    |                       |                  |           |                    |                     |                     |                     |
|                       | 15-20cm |                    |                       |                  |           |                    |                     |                     |                     |
|                       | 20-25cm |                    |                       |                  |           |                    |                     |                     |                     |
|                       | 25-30cm |                    |                       |                  |           |                    |                     |                     |                     |
|                       | 30+     |                    |                       |                  |           |                    |                     |                     |                     |
| II Branch             | 0-10cm  |                    |                       |                  | 3         |                    |                     |                     |                     |
|                       | 10-15cm |                    |                       |                  | 3         |                    |                     |                     |                     |
|                       | 15-20cm |                    |                       |                  |           |                    |                     |                     |                     |
|                       | 20-25cm | 2                  |                       |                  |           |                    |                     | 1                   |                     |
|                       | 25-30cm | 1                  |                       |                  |           |                    |                     |                     |                     |
|                       | 30+     |                    |                       |                  |           |                    |                     |                     |                     |
| III Trunk             | 0-10cm  |                    |                       |                  |           |                    |                     |                     |                     |
|                       | 10-15cm |                    |                       |                  |           |                    |                     |                     |                     |
|                       | 15-20cm |                    |                       |                  |           |                    |                     |                     |                     |
|                       | 20-25cm |                    |                       | 1                |           |                    |                     |                     |                     |
|                       | 25-30cm |                    |                       |                  |           |                    |                     |                     | 1                   |
|                       | 30+     |                    |                       |                  |           |                    |                     |                     |                     |
| IV Splits             | 0-10cm  |                    |                       |                  |           |                    |                     |                     |                     |
|                       | 10-15cm |                    |                       |                  |           |                    |                     |                     |                     |
|                       | 15-20cm |                    |                       |                  |           |                    |                     |                     |                     |
|                       | 20-25cm |                    |                       |                  |           |                    |                     |                     |                     |
|                       | 25-30cm |                    |                       |                  |           |                    |                     |                     |                     |
|                       | 30+     |                    | 1                     |                  |           | 1                  | 1                   |                     |                     |
| V Cracked Bark        | 0-10cm  |                    |                       |                  |           |                    |                     |                     |                     |
|                       | 10-15cm |                    |                       |                  |           |                    |                     |                     |                     |
|                       | 15-20cm |                    |                       |                  |           |                    |                     |                     |                     |
|                       | 20-25cm |                    |                       |                  |           |                    |                     |                     |                     |
|                       | 25-30cm |                    |                       |                  |           |                    |                     |                     |                     |
|                       | 30+     |                    |                       |                  |           |                    |                     |                     |                     |
| Targeted fauna survey |         |                    |                       |                  |           |                    |                     |                     |                     |

**POSITIONS:** Topographical location - ridge, slope, gully etc **HEALTH:** Record % of healthy growth compared to dead limbs.

**FAUNA USE:** Record scats, scratches, feed scars, nests etc.

**TABLE- A1.1 HOLLOW BEARING TREE SURVEY- TREES TO BE REMOVED**

CLIENT: Crighton Properties...REF NO....8065.... DATE.....17 August 2007.....ASSESSOR.....Paul Shelley.....SHEET NO.....4....of.....5.....

TREE LOCATIONS RECORDED ON MAP ☒ Y/N SITE SURVEY SHEET COMPLETED ☒ Y/N

|                       |         |                     |                  |                  |  |  |  |  |  |
|-----------------------|---------|---------------------|------------------|------------------|--|--|--|--|--|
| Tree Tag Number       |         | 42                  | 47               | 48               |  |  |  |  |  |
| Species               |         | <i>E. pilularis</i> | <i>Syncarpia</i> | <i>Syncarpia</i> |  |  |  |  |  |
| DBH (cm)              |         | 110                 | 90               | 70               |  |  |  |  |  |
| Spread (m)            |         | 20                  | 15               | 15               |  |  |  |  |  |
| Height (m)            |         | 30                  | 18               | 20               |  |  |  |  |  |
| Position              |         | Top slope           | Mid slope        | Mid slope        |  |  |  |  |  |
| % Health              |         | 70                  | 60               | 70               |  |  |  |  |  |
| Fauna Use             |         |                     |                  |                  |  |  |  |  |  |
| HOLLOWS               |         |                     |                  |                  |  |  |  |  |  |
| I Broken Trunk        | 0-10cm  |                     |                  |                  |  |  |  |  |  |
|                       | 10-15cm |                     |                  |                  |  |  |  |  |  |
|                       | 15-20cm |                     |                  |                  |  |  |  |  |  |
|                       | 20-25cm |                     |                  |                  |  |  |  |  |  |
|                       | 25-30cm |                     |                  |                  |  |  |  |  |  |
|                       | 30+     |                     |                  |                  |  |  |  |  |  |
| II Branch             | 0-10cm  |                     |                  |                  |  |  |  |  |  |
|                       | 10-15cm |                     |                  |                  |  |  |  |  |  |
|                       | 15-20cm |                     |                  |                  |  |  |  |  |  |
|                       | 20-25cm | 1                   |                  |                  |  |  |  |  |  |
|                       | 25-30cm |                     |                  |                  |  |  |  |  |  |
|                       | 30+     |                     | 2                |                  |  |  |  |  |  |
| III Trunk             | 0-10cm  |                     |                  |                  |  |  |  |  |  |
|                       | 10-15cm |                     |                  |                  |  |  |  |  |  |
|                       | 15-20cm |                     |                  |                  |  |  |  |  |  |
|                       | 20-25cm |                     |                  |                  |  |  |  |  |  |
|                       | 25-30cm |                     |                  |                  |  |  |  |  |  |
|                       | 30+     |                     |                  |                  |  |  |  |  |  |
| IV Splits             | 0-10cm  |                     |                  |                  |  |  |  |  |  |
|                       | 10-15cm |                     |                  |                  |  |  |  |  |  |
|                       | 15-20cm |                     |                  |                  |  |  |  |  |  |
|                       | 20-25cm |                     |                  | 1                |  |  |  |  |  |
|                       | 25-30cm |                     |                  |                  |  |  |  |  |  |
|                       | 30+     |                     |                  |                  |  |  |  |  |  |
| V Cracked Bark        | 0-10cm  |                     |                  |                  |  |  |  |  |  |
|                       | 10-15cm |                     |                  |                  |  |  |  |  |  |
|                       | 15-20cm |                     |                  |                  |  |  |  |  |  |
|                       | 20-25cm |                     |                  |                  |  |  |  |  |  |
|                       | 25-30cm |                     |                  |                  |  |  |  |  |  |
|                       | 30+     | 1                   |                  |                  |  |  |  |  |  |
| Targeted fauna survey |         |                     |                  |                  |  |  |  |  |  |

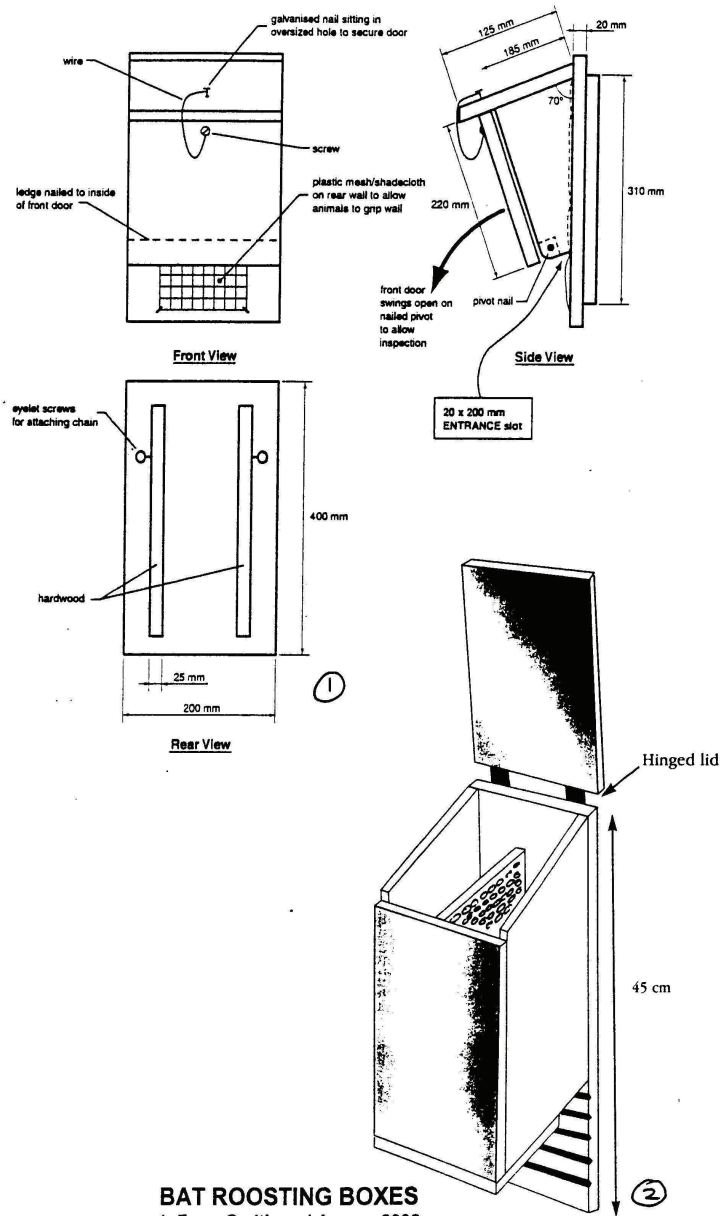
**POSITIONS:** Topographical location - ridge, slope, gully etc .

**HEALTH:** Record % of healthy growth compared to dead limbs.

**FAUNA USE:** Record scats, scratches, feed scars, nests etc.

**ATTACHMENT 2**  
**NEST BOX SPECIFICATIONS**

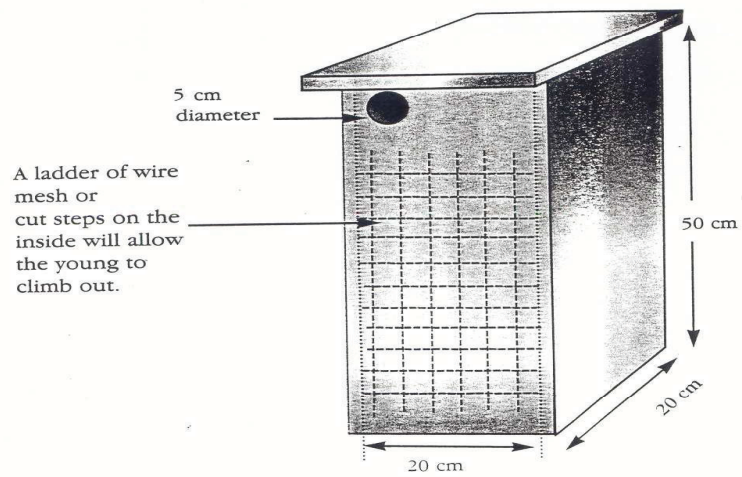
## NEST BOX SPECIFICATIONS



**BAT ROOSTING BOXES**  
 1. From Smith and Agnew 2002  
 2. From Gould League of Victoria 1997

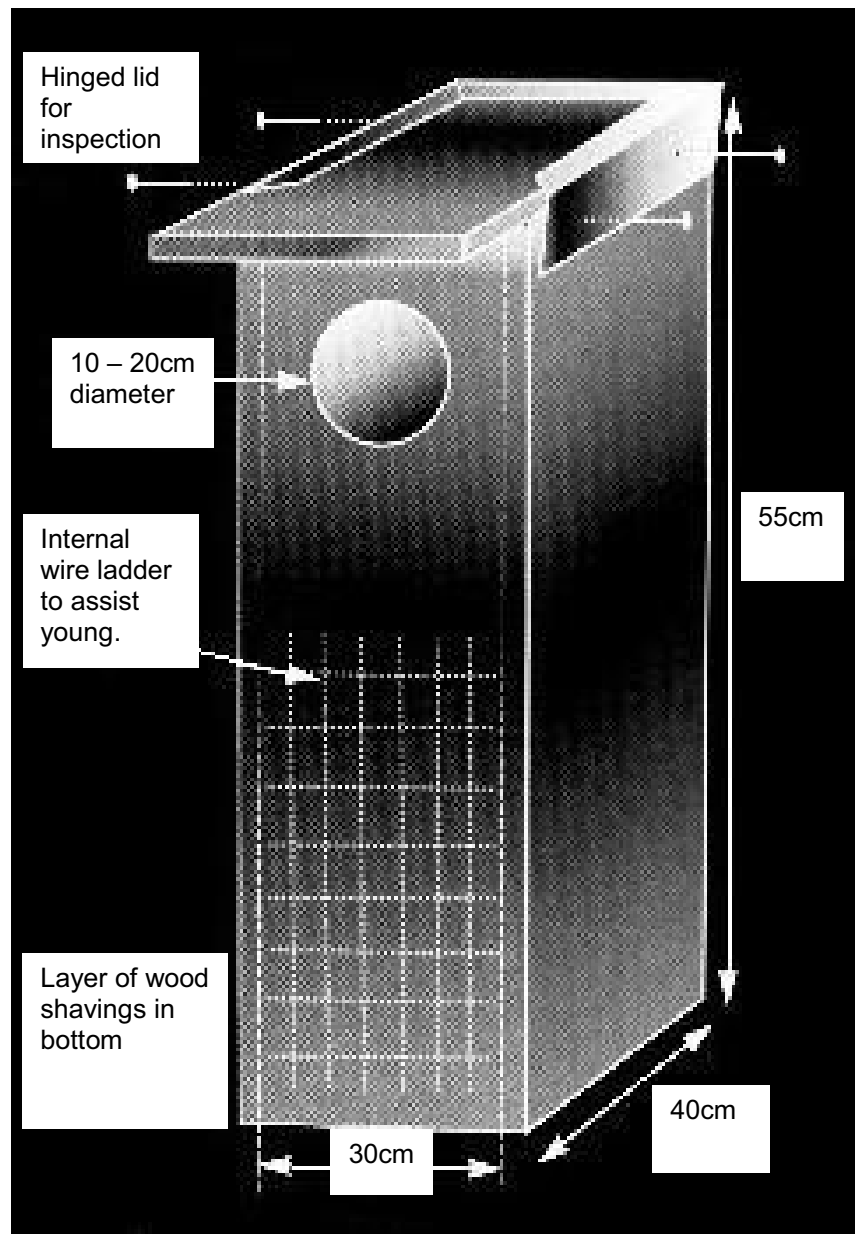
## NEST BOX TYPE A





**SQUIRREL GLIDER NEST BOX**

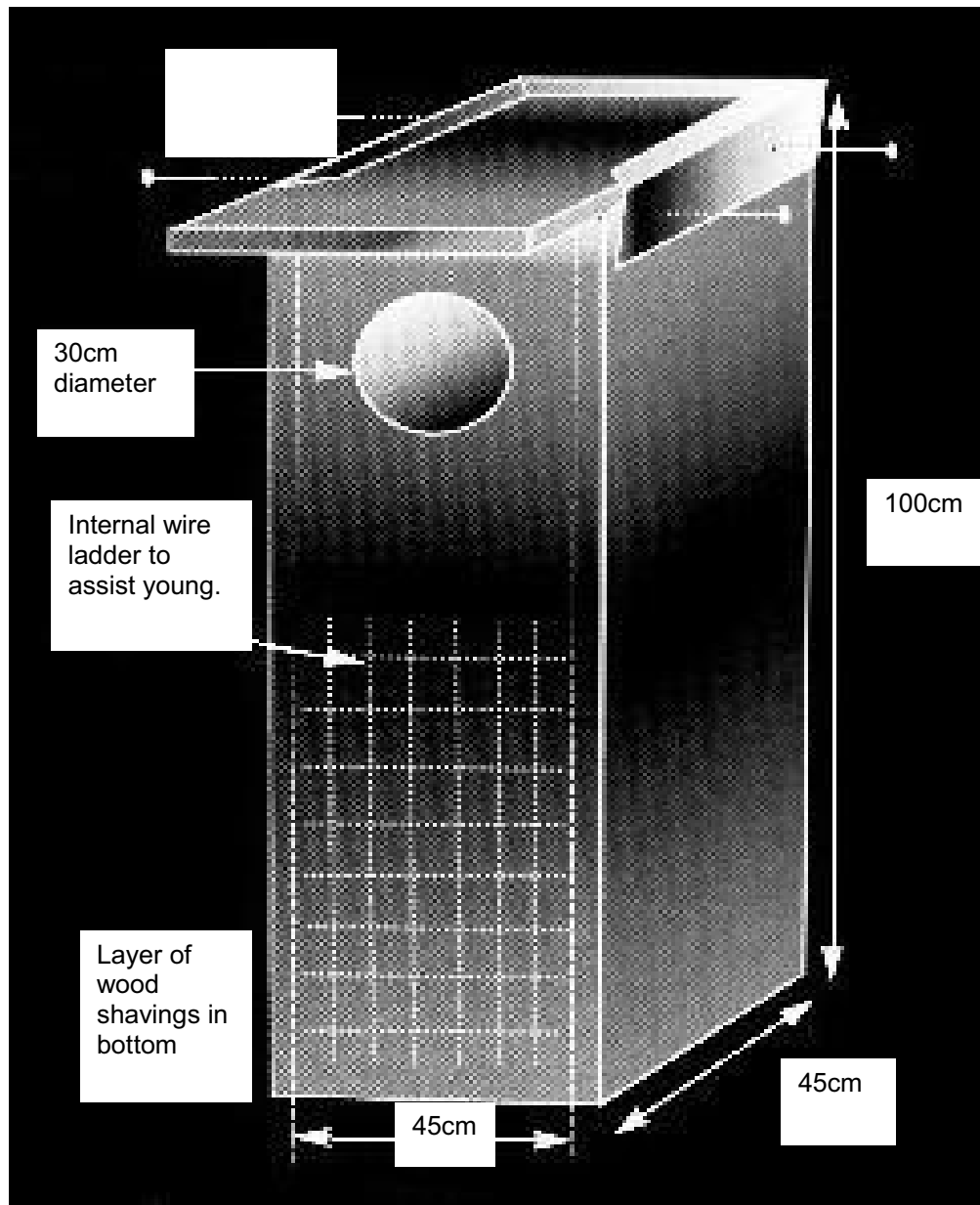
**NEST BOX TYPE B**



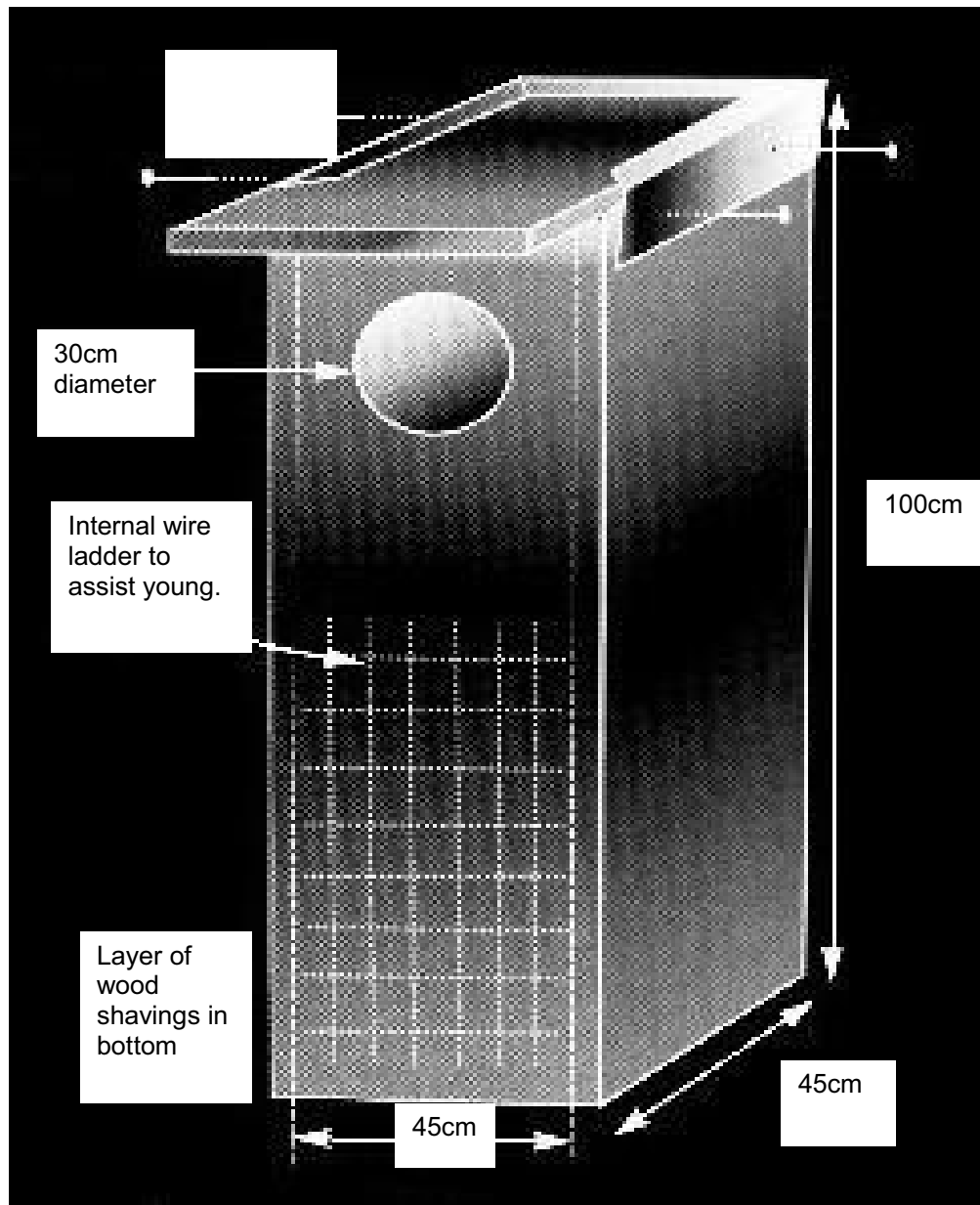
### **PARROT NEST BOX**

#### **NEST BOX TYPE C & D**

**The aperture to this box can be enlarged or reduced to accommodate both large and small parrot species**



**COMMON BRUSHTAIL POSSUM NEST BOX DETAIL**  
**NEST BOX TYPE E**



## FOREST OWL ROOSTING / NESTING BOX

### NEST BOX TYPE F

## **APPENDIX 5**

### **ENVIRONMENTAL PROTECTION AND BIODIVERSITY CONSERVATION ACT**



## INTRODUCTION

The *Environment Protection and Biodiversity Conservation Act*, (1999) requires that Commonwealth approval be obtained for certain actions. The Act provides an assessment and approvals system for actions that have a significant impact on matters of National Environment Significance (NES). The matters of national environmental significance are:

- Listed threatened species and ecological communities;
- Migratory species protected under international agreements;
- Ramsar wetlands of international importance;
- The Commonwealth marine environment;
- World Heritage properties;
- National Heritage places;
- Great Barrier Reef Marine Park; and
- Nuclear actions.

Actions are projects, developments, undertakings, activities, series of activities or alteration of any of these. An action that needs Commonwealth approval is known as a controlled action. A controlled action needs approval where the Commonwealth decides the action would have a significant effect on a matter of National Environmental Significance.

Where a proposed activity is located in an area identified to be of National Environmental Significance, or such that it is likely to significantly impact a matter of National Environmental Significance, the proposal needs to be referred to the Department of Sustainability, Environment, Water, Population and Communities (DSEWPC).

A Protected Matters search was undertaken within 10km of the subject site to determine the likely occurrence of Matters of National Environmental Significance. A printout of the Protected Matters search is provided as Attachment 1.

With regard to matters of National Environmental Significance, several criteria must be assessed to satisfy the requirements of the *EPBC Act* (1999). Criteria identified within the EPBC Act Policy Statement 1.1 *Significant Impact Guidelines* (DEWHA 2009), is required to determine whether the proposed development is likely to significantly impact on matter of National Environmental Significance and constitute a controlled action. The criteria for assessment are provided in **bold** print below.

### **1. Are there any Matters of National Environmental Significance located in the area of the proposed action?**

#### ***Nationally Listed Threatened Species***

Fifty six nationally listed threatened species have been recorded within 10km of the subject site on the EPBC Act Protected Matters Search Report (DSEWPC 2010).

One nationally listed threatened species, the Grey-headed Flying-fox (*Pteropus poliocephalus*) was observed within the subject site.

#### ***Nationally Listed Threatened Ecological Communities***

No threatened ecological communities listed within the EPBC Act (1999) were observed within the subject site or recorded within 10km of the subject site on the EPBC Act Protected Matters Search Report (DSEWPC 2010).

### ***Nationally Listed Migratory Species Protected Under International Agreements***

Fifty two migratory species protected under international agreements listed within the *EPBC Act* (1999) have been recorded within 10km of the subject site on the EPBC Act Protected Matters Search Report (DSEWPC 2010).

Two migratory species protected under international agreements, the Rufous Fantail (*Rhipidura rufifrons*) and the Cattle Egret (*Ardea alba*), listed within the *EPBC Act* (1999) have been recorded within the subject site.

### ***Ramsar Wetlands of International Importance***

No Ramsar wetlands of international importance as listed within the EPBC Act (1999) were observed within the subject site or recorded within 10km of the subject site on the EPBC Act Protected Matters Search Report (DSEWPC 2010).

### ***The Commonwealth Marine Environment***

No Commonwealth marine environments as listed within the EPBC Act (1999) were observed within the subject site or recorded within 10km of the subject site on the EPBC Act Protected Matters Search Report (DSEWPC 2010).

### ***Listed World Heritage Properties***

No world heritage properties as listed within the EPBC Act (1999) were observed within the subject site or recorded within 10km of the subject site on the EPBC Act Protected Matters Search Report (DSEWPC 2010).

### ***Listed National Heritage Places***

No national heritage places as listed within the EPBC Act (1999) were observed within the subject site or recorded within 10km of the subject site on the EPBC Act Protected Matters Search Report (DSEWPC 2010).

### ***The Great Barrier Reef Marine Park***

The subject site is not located within 10km of the Great Barrier Reef Marine Park.

### ***Nuclear Actions***

The proposal is not a type of development classed as a nuclear action and is not located within 10km of a nuclear action.

## **1.1 Considering the proposed action at its broadest scope, is there potential for impacts on Matters of National Environmental Significance?**

With regard to the proposed development, the following assessments are provided to determine the potential for the proposal to impact, at its broadest scope, on Matters of National Environmental Significance.



## **2.1 Assessment of significant impact on a vulnerable species**

### **2.1.1 Grey-headed Flying-fox**

#### **Vulnerable Species Important Population Criteria**

- **Whether the population has been identified within a recovery plan**

A draft recovery plan exists for this species at state level (DECCW 2009). A population of this species has not been identified as occurring within the subject site within any recovery plan.

- **Whether the population constitutes a key source population for breeding or dispersal**

The Grey-headed Flying-fox is common throughout its distribution, occurring within 200km of the east coast of Australia between Bundaberg and Melbourne in the Sydney Basin Bioregion (DECCW, 2009). They are a mobile species, flying long distances to forage (up to 50 km) and roost (DECCW, 2009). The subject site contains foraging habitat for the species, however is not critical to the species' survival. It is therefore considered that any Grey-headed Flying-fox population that may use the subject site does not constitute a key source population for breeding and dispersal for the species.

- **Whether the population constitutes a population necessary for maintaining genetic diversity**

The Grey-headed Flying-fox is common throughout its distribution along the southern east coast of Australia, and fly long distances to forage and roost (DECCW 2009). The subject site is suitable foraging grounds for the species, however is not critical to the species' survival. It is therefore considered that any Grey-headed Flying-fox population that may use the subject site does not constitute a population necessary for maintaining genetic diversity.

- **Whether the population is at the limit of its known distribution**

The Grey-headed Flying-fox is known to occupy the coastal lowlands and slopes of south-eastern Australia from Bundaberg to Geelong and are usually found at altitudes < 200 m. Areas of repeated occupation extend inland to the tablelands and western slopes in northern New South Wales and the tablelands in southern Queensland. Sightings in inland areas of southern New South Wales and Victoria are uncommon. There are rare records of individuals or small groups west to Adelaide, north to Gladstone and south to Flinders Island (DECCW 2009).

This species is therefore not at the limit of its distribution within the subject site.

From the above information and details it is considered that the Grey-headed Flying-fox observed within the subject site is not:

- Identified in a recovery plan for this species;
- A key source population for breeding or dispersal;
- A population necessary for maintaining genetic diversity;
- A population which is near this species range.

Therefore it is considered that the threatened species observed does not satisfy the criteria of an important population as identified by the DEWHA (2009).

Notwithstanding the above conclusions if the precautionary approach is adopted, further consideration as to whether the proposed action is likely to have a significant impact on this species needs to assess the significant impact criteria (DEWHA 2009) for a vulnerable species.

#### **Vulnerable Species Significant Impact Criteria**

- ***Lead to a long-term decrease in the size of an important population of a species;***

It is considered that the Grey-headed Flying-fox population utilising the subject site is not an “important population” necessary for the species long-term survival and recovery. The proposed development will require the removal or modification of approximately 17.38 ha of potential habitat for this species. The Grey-headed Flying-fox was observed foraging within the subject site, however no roosting camps were located within the subject site. It is therefore considered that the proposed action will not lead to a long-term decrease in the size of an important population of a species

- ***Reduce the area of occupancy of an important population;***

It is considered that the Grey-headed Flying-fox population utilising the subject site is not an “important population” necessary for the species long-term survival and recovery. The proposed development will require the removal or modification of approximately 17.38 ha of potential habitat for this species. The Grey-headed Flying-fox was observed foraging within the subject site, however no roosting camps were located within the subject site. It is therefore considered that the proposed action will not lead to a long-term decrease in the size of an important population of a species

- ***Fragment an existing important population into two or more populations;***

No important populations of the Grey-headed Flying-fox has been found within the subject site. The proposal is will still allow for movement of this species over and around the subject site. It is therefore considered unlikely the proposed action will fragment an existing important population into two or more populations.

- ***Adversely affect habitat critical to the survival of a species;***

There has currently been no critical habitat for this species declared under the *EPBC Act* (1999) or listed within a recovery plan for this species.

The study area is not considered to constitute habitat critical to the survival of the species. Similar vegetation communities and habitat types are represented in adjoining bushland within the locality. It is therefore considered unlikely the proposed action will adversely affect habitat critical to the survival of a species.

- ***Disrupt the breeding cycle of an important population;***

This species was observed flying over the subject site. No roost or camp sites utilised for breeding were observed within the subject site. The subject site provides only a relatively small area of potential foraging habitat for this species. There are larger areas of suitable foraging habitat that support this species within the local area including within conservation reserves such as Kincumba Mountain Reserve, Katandra Reserve and Wambina Nature Reserve.

It is therefore considered that the proposed action will not disrupt the breeding cycle of an important population of this species.

- ***Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that a species is likely to decline;***

The Grey-headed Flying-fox was observed foraging within and adjacent to the subject site. The loss of habitat associated with any future development is unlikely to contribute towards a decline in the local population of the species. Since there is a large availability of quality habitat located off-site, it is considered unlikely the proposed action will modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline.

- ***Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat;***

The subject site has already been affected by invasive species such as Lantana. It is considered that the high levels of weed invasion within some areas of the subject site may potentially impact upon this species. However, the proposed development incorporates a management plan for the removal of weed species within the proposed riparian zone. In addition it is expected that the proposed development will provide an opportunity to manage the whole of the site with respect to weed control. It is therefore considered unlikely the proposed action will result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species habitat.

- ***Introduce disease that may cause the species to decline; or***

The proposed development is not of a type that is likely to introduce disease that may cause this species to decline.

- ***Interferes substantially with recovery of the species.***

This species is not dependant on factors within the subject site for its recovery; therefore it is considered unlikely the proposed action will interfere substantially with the recovery of the species.

It is therefore considered that the proposed development is not likely to have a significant impact on a nationally listed threatened species.

## **2.2 Assessment of significant impact on a migratory species**

### **2.2.1 Rufous Fantail (*Rhipidura rufifrons*)**

#### **Migratory Species Important Habitat Criteria**

- **Habitat utilised by a migratory species occasionally or periodically within a region that supports an ecologically significant proportion of the population of the species; and/or**

Due to the presence of larger areas of suitable habitat within adjoining lands it is considered that the subject site does not support an ecologically significant proportion of the population of the species.

- **Habitat that is of critical importance to the species at particular life-cycle stages; and/or**

The subject site is considered to provide foraging and breeding habitat for this species. The subject site has not been registered as critical habitat for this species within the provisions of the *EPBC Act* (1999). Larger areas of suitable foraging habitat and breeding for this species are present within the adjoining areas and therefore the subject site is considered to not be habitat that is of critical importance to the species at particular life-cycle stages.

- **Habitat utilised by a migratory species which is at the limit of the species range;**

On the eastern coast of mainland Australia this species is widespread from Queensland to Victoria (Higgins *et al.* 2006). Therefore the subject site is considered to not contain habitat utilised by a migratory species which is at the limit of the species range.

- **Habitat within an area where the species is declining.**

The subject site has not been registered as critical habitat for this species within the provisions of the *EPBC Act* (1999). The population demographics for this species within the local area are not known. Further studies are required in order to ascertain whether the species is declining within the local area. These studies are beyond the scope of this assessment.

From the above information and details it is considered that the habitats for this species within the subject site are not:

- Habitat utilised by a migratory species occasionally or periodically within a region that supports an ecologically significant proportion of the population of the species; and/or
- Habitat that is of critical importance to the species at particular life-cycle stages; and/or
- Habitat utilised by a migratory species which is at the limit of the species range; or
- Habitat within an area where the species is declining.

Therefore it is considered that the habitat within the subject site for this migratory species does not satisfy the criteria of “*important habitat*” as identified by the DEWHA (2009).

Notwithstanding the above conclusions if the precautionary approach is adopted, further consideration as to whether the proposed action is likely to have a significant impact on this species needs to assess the significant impact criteria (DEWHA 2009) for a migratory species.

#### **Migratory Species Significant Impact Criteria**

The consideration as to whether the proposed action is likely to have a significant impact on a migratory species needs to assess the significant impact criteria (DEWHA 2009) for a migratory species.

An action is likely to have a significant impact on a migratory species if there is a real chance or possibility that it will:

- **Substantially modify (including by fragmenting, altering fire regimes, altering nutrient cycles or altering hydrological cycles), destroy or isolate an area of important habitat for a migratory species;**

Some areas of suitable habitat for this species within the subject site, including the Coastal Warm Temperate Rainforest vegetation community, will be retained.

Therefore it is considered that the proposed action is unlikely to substantially modify, destroy or isolate and area of important habitat for this species.

- **Result in an invasive species that is harmful to the migratory species becoming established in an area of important habitat for the migratory species; or**

The proposed action is not of a type of development that is likely to result in the establishment of an invasive species that is harmful to this species becoming established in an area of important habitat for this species.

- **Seriously disrupt the lifecycle (breeding, feeding, migration or resting behaviour) of an ecologically significant proportion of the population of a migratory species.**

Some areas of suitable habitat for this species within the subject site, including the Coastal Warm Temperate Rainforest vegetation community, will be retained.

It is therefore considered that the proposed development is not likely to seriously disrupt the lifecycle (breeding, feeding, migration or resting behaviour) of an ecologically significant proportion of the population of the migratory species.

It is therefore considered that the proposed development is not likely to have a significant impact this nationally listed migratory species.

### 2.2.2 Cattle Egret (*Ardea idis*)

With regard to the migratory species, the Cattle Egret (*Ardea ibis*), observed within the subject site, several criteria must be assessed to satisfy the requirements of the EPBC Act (1999). Criteria identified within the EPBC Act Policy Statement 1.1 *Significant Impact Guidelines* (DEWHA 2009), is required to determine whether there is a real chance or possibility, that the proposed action is likely to have a significant impact on a migratory species. The criteria for assessment are provided in **bold** print below.

#### Migratory Species Important Habitat Criteria

- **Habitat utilised by a migratory species occasionally or periodically within a region that supports an ecologically significant proportion of the population of the species; and/or**

Due to the presence of larger areas of suitable habitat within adjoining lands it is considered that the subject site does not support an ecologically significant proportion of the population of the species.

- **Habitat that is of critical importance to the species at particular life-cycle stages; and/or**

The subject site is considered to provide mainly foraging habitat for this species. The subject site has not been registered as critical habitat for this species within the provisions of the *EPBC Act* (1999). Larger areas of suitable foraging habitat for this species are present within the adjoining areas and therefore the subject site is considered to not be habitat that is of critical importance to the species at particular life-cycle stages.

- ***Habitat utilised by a migratory species which is at the limit of the species range;***

In Australia this species is widespread and common in north-eastern Western Australia across the Top End, Northern Territory, and in south-eastern Australia from Bundaberg, Queensland to Port Augusta, South Australia, including Tasmania. Therefore the subject site is considered to not contain habitat utilised by a migratory species which is at the limit of the species range.

- ***Habitat within an area where the species is declining.***

The subject site has not been registered as critical habitat for this species within the provisions of the *EPBC Act* (1999). The population demographics for this species within the local area are not known. Further studies are required in order to ascertain whether the species is declining within the local area. These studies are beyond the scope of this assessment.

From the above information and details it is considered that the habitats for this species within the subject site are not:

- Habitat utilised by a migratory species occasionally or periodically within a region that supports an ecologically significant proportion of the population of the species; and/or
- Habitat that is of critical importance to the species at particular life-cycle stages; and/or
- Habitat utilised by a migratory species which is at the limit of the species range; or
- Habitat within an area where the species is declining.

Therefore it is considered that the habitat within the subject site for this migratory species does not satisfy the criteria of “*important habitat*” as identified by the DEWHA (2009).

Notwithstanding the above conclusions if the precautionary approach is adopted, further consideration as to whether the proposed action is likely to have a significant impact on this species needs to assess the significant impact criteria (DEWHA 2009) for a migratory species.

### **Significant Impact Criteria**

The consideration as to whether the proposed action is likely to have a significant impact on a migratory species needs to assess the significant impact criteria (DEWHA 2009) for a migratory species.

An action is likely to have a significant impact on a migratory species if there is a real chance or possibility that it will:

- ***Substantially modify (including by fragmenting, altering fire regimes, altering nutrient cycles or altering hydrological cycles), destroy or isolate and area of important habitat for a migratory species;***

The subject site has already been substantially modified by land clearing and the establishment of pasture grasses. Therefore it is considered that the proposed action is unlikely to substantially modify, destroy or isolate and area of important habitat for this species.

- ***Result in an invasive species that is harmful to the migratory species becoming established in an area of important habitat for the migratory species; or***

The proposed action is not of a type of development that is likely to result in the establishment of an invasive species that is harmful to this species becoming established in an area of important habitat for this species.

- ***Seriously disrupt the lifecycle (breeding, feeding, migration or resting behaviour) of an ecologically significant proportion of the population of a migratory species.***

According to Marchant and Higgins (1990) this species is widespread and common according to migrations, movements and breeding localities between approximately Bundaberg in Queensland from the coast south-west to Port Augusta South Australia. The range of the Cattle Egret has expanded to include every continent except Antarctica and is widely distributed across Australia. Genetically birds within Australia have come from Asian origins. The Cattle Egret is a partial migrant which winters in Australia and New Zealand, and travels to breeding colonies in south-east Queensland and north-east New South Wales, with some birds staying within wintering areas to breed.

It is therefore considered that the proposed development not likely to seriously disrupt the lifecycle (breeding, feeding, migration or resting behaviour) of an ecologically significant proportion of the population of the migratory species.

It is therefore considered that the proposed development is not likely to have a significant impact on a nationally listed migratory species.

## **2. Are there any proposed measures to avoid or reduce impacts on Matters of National Environmental Significance?**

The proposed development is not likely to have a significant impact on a matter of NES. It is therefore considered that measures to avoid or reduce impacts on Matters of NES are not required. Notwithstanding this, proposed measures to avoid or reduce impacts are provided within the Maintain or Improve Assessment which is contained in documentation additional to this report.

## **3. Are any impacts of the proposed action on Matters of National Environmental Significance likely to be significant impacts?**

Assessments undertaken in accordance with the Criteria identified within the EPBC Act Policy Statement 1.1 *Significant Impact Guidelines* (DEWHA 2009), and contained within Section 2 of this Report have determined that the proposed development in not likely to have a significant impact on a matter of NES.

#### 4. Conclusion

It is considered that a referral of this project to the DSEWPC is not required as the proposal is not likely to significantly impact on matter of National Environmental Significance and therefore not likely to constitute a controlled action.

#### REFERENCES

- Department of Environment, Climate Change and Water NSW. 2009. Draft National Recovery Plan for the Grey-headed Flying-fox *Pteropus poliocephalus*. Prepared by Dr Peggy Eby. Department of Environment, Climate Change and Water NSW, Sydney.
- Department of the Environment Water Heritage and the Arts (2009). EPBC Act Policy Statement 1.1, Significant Impact Guidelines.
- Department of Sustainability, Environment, Water, Population and Communities (2010), Protected Matters Search Tool website: <http://www.environment.gov.au/erin/ert/epbc/>
- Environmental Protection and Biodiversity Conservation Act* (1999). Environment Australia. GHD (June 2009) Review of Environmental Factors for the Mardi-Mangrove Link Project.
- Higgins, P.J., J.M. Peter & S.J. Cowling. (Eds) 2006. *Handbook of Australian, New Zealand and Antarctic Birds. Volume 7: Boatbill to Starlings*. Oxford University Press, Melbourne.
- Marchant, S., & P.J. Higgins (Eds) (1990). *Handbook of Australian, New Zealand and Antarctic Birds. Volume 1 Ratite's to Ducks Part A Ratite's to Petrels* Oxford University Press, Melbourne.



**ATTACHMENT 1**

**EPBC PROTECTED MATTERS SEARCH RESULTS**

**Protected Matters Search Tool**You are here: [Environment Home](#) > [EPBC Act](#) > [Search](#)

6 December 2010 10:30

**EPBC Act Protected Matters Report**

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Information on the coverage of this report and qualifications on data supporting this report are contained in the [caveat](#) at the end of the report.

You may wish to print this report for reference before moving to other pages or websites.

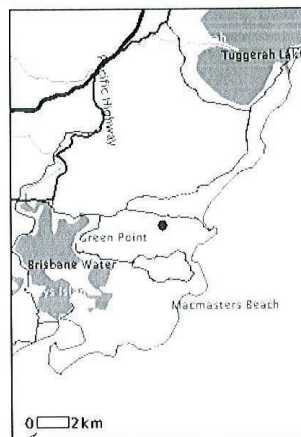
The Australian Natural Resources Atlas at <http://www.environment.gov.au/atlas> may provide further environmental information relevant to your selected area. Information about the EPBC Act including significance guidelines, forms and application process details can be found at <http://www.environment.gov.au/epbc/assessmentsapprovals/index.html>

**Search Type:** Point  
**Buffer:** 10 km  
**Coordinates:** -33.44444,151.4152



**Report Contents:** [Summary](#)  
[Details](#)  
• [Matters of NES](#)  
• [Other matters protected by the EPBC Act](#)  
• [Extra Information](#)

[Caveat](#)  
[Acknowledgments](#)



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**Summary****Matters of National Environmental Significance**

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance - see <http://www.environment.gov.au/epbc/assessmentsapprovals/guidelines/index.html>.

|                                                                   |      |
|-------------------------------------------------------------------|------|
| <b>World Heritage Properties:</b>                                 | None |
| <b>National Heritage Places:</b>                                  | None |
| <b>Wetlands of International Significance:<br/>(Ramsar Sites)</b> | None |
| <b>Commonwealth Marine Areas:</b>                                 | None |
| <b>Threatened Ecological Communities:</b>                         | None |

[http://www.environment.gov.au/cgi-bin/erin/ert/epbc/epbc\\_report.pl?searchtype=point;...](http://www.environment.gov.au/cgi-bin/erin/ert/epbc/epbc_report.pl?searchtype=point;...) 6/12/2010

|                            |    |
|----------------------------|----|
| <u>Threatened Species:</u> | 56 |
| <u>Migratory Species:</u>  | 52 |

### Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place and the heritage values of a place on the Register of the National Estate. Information on the new heritage laws can be found at <http://www.environment.gov.au/heritage/index.html>.

Please note that the current dataset on Commonwealth land is not complete. Further information on Commonwealth land would need to be obtained from relevant sources including Commonwealth agencies, local agencies, and land tenure maps.

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species. Information on EPBC Act permit requirements and application forms can be found at <http://www.environment.gov.au/epbc/permits/index.html>.

|                                      |      |
|--------------------------------------|------|
| <u>Commonwealth Lands:</u>           | 4    |
| <u>Commonwealth Heritage Places:</u> | None |
| <u>Places on the RNE:</u>            | 11   |
| <u>Listed Marine Species:</u>        | 68   |
| <u>Whales and Other Cetaceans:</u>   | 13   |
| <u>Critical Habitats:</u>            | None |
| <u>Commonwealth Reserves:</u>        | None |

### Extra Information

This part of the report provides information that may also be relevant to the area you have nominated.

|                                      |      |
|--------------------------------------|------|
| <u>State and Territory Reserves:</u> | 8    |
| <u>Other Commonwealth Reserves:</u>  | None |
| <u>Regional Forest Agreements:</u>   | 1    |

### Details

#### Matters of National Environmental Significance

| Threatened Species [ <a href="#">Dataset Information</a> ]           | Status     | Type of Presence                                       |
|----------------------------------------------------------------------|------------|--------------------------------------------------------|
| <b>Birds</b>                                                         |            |                                                        |
| <u><i>Anthochaera phrygia</i></u><br>Regent Honeyeater               | Endangered | Species or species habitat likely to occur within area |
| <u><i>Diomedea exulans (sensu lato)</i></u><br>Wandering Albatross   | Vulnerable | Species or species habitat may occur within area       |
| <u><i>Diomedea exulans amsterdamensis</i></u><br>Amsterdam Albatross | Endangered | Species or species habitat may occur within area       |
| <u><i>Diomedea exulans antipodensis</i></u><br>Antipodean Albatross  | Vulnerable | Species or species habitat may occur within area       |

[http://www.environment.gov.au/cgi-bin/erin/ert/epbc/epbc\\_report.pl?searchtype=point;...](http://www.environment.gov.au/cgi-bin/erin/ert/epbc/epbc_report.pl?searchtype=point;...) 6/12/2010

|                                                                                                                                                              |            |                                                              |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------------------------------------------------|
| <u><i>Diomedea exulans exulans</i></u><br>Tristan Albatross                                                                                                  | Endangered | Foraging, feeding or related behaviour may occur within area |
| <u><i>Diomedea exulans gibsoni</i></u><br>Gibson's Albatross                                                                                                 | Vulnerable | Species or species habitat may occur within area             |
| <u><i>Lathamus discolor</i></u><br>Swift Parrot                                                                                                              | Endangered | Species or species habitat likely to occur within area       |
| <u><i>Macronectes giganteus</i></u><br>Southern Giant-Petrel                                                                                                 | Endangered | Species or species habitat may occur within area             |
| <u><i>Macronectes halli</i></u><br>Northern Giant-Petrel                                                                                                     | Vulnerable | Species or species habitat may occur within area             |
| <u><i>Pterodroma leucoptera leucoptera</i></u><br>Gould's Petrel                                                                                             | Endangered | Species or species habitat may occur within area             |
| <u><i>Pterodroma neglecta neglecta</i></u><br>Kermadec Petrel (western)                                                                                      | Vulnerable | Species or species habitat may occur within area             |
| <u><i>Rostratula australis</i></u><br>Australian Painted Snipe                                                                                               | Vulnerable | Species or species habitat may occur within area             |
| <u><i>Thalassarche bulleri</i></u><br>Buller's Albatross                                                                                                     | Vulnerable | Species or species habitat may occur within area             |
| <u><i>Thalassarche cauta cauta</i></u><br>Shy Albatross, Tasmanian Shy Albatross                                                                             | Vulnerable | Species or species habitat may occur within area             |
| <u><i>Thalassarche cauta salvini</i></u><br>Salvin's Albatross                                                                                               | Vulnerable | Species or species habitat may occur within area             |
| <u><i>Thalassarche cauta steadi</i></u><br>White-capped Albatross                                                                                            | Vulnerable | Species or species habitat may occur within area             |
| <u><i>Thalassarche melanophris</i></u><br>Black-browed Albatross                                                                                             | Vulnerable | Species or species habitat may occur within area             |
| <u><i>Thalassarche melanophris impavida</i></u><br>Campbell Albatross                                                                                        | Vulnerable | Species or species habitat may occur within area             |
| <b>Frogs</b>                                                                                                                                                 |            |                                                              |
| <u><i>Heleioporus australiacus</i></u><br>Giant Burrowing Frog                                                                                               | Vulnerable | Species or species habitat likely to occur within area       |
| <u><i>Litoria aurea</i></u><br>Green and Golden Bell Frog                                                                                                    | Vulnerable | Species or species habitat known to occur within area        |
| <u><i>Litoria littlejohni</i></u><br>Littlejohn's Tree Frog, Heath Frog                                                                                      | Vulnerable | Species or species habitat may occur within area             |
| <u><i>Mixophyes balbus</i></u><br>Stuttering Frog, Southern Barred Frog (in Victoria)                                                                        | Vulnerable | Species or species habitat likely to occur within area       |
| <u><i>Mixophyes iteratus</i></u><br>Southern Barred Frog, Giant Barred Frog                                                                                  | Endangered | Species or species habitat likely to occur within area       |
| <b>Mammals</b>                                                                                                                                               |            |                                                              |
| <u><i>Balaenoptera musculus</i></u><br>Blue Whale                                                                                                            | Endangered | Species or species habitat may occur within area             |
| <u><i>Chalinolobus dwyeri</i></u><br>Large-eared Pied Bat, Large Pied Bat                                                                                    | Vulnerable | Species or species habitat may occur within area             |
| <u><i>Dasyurus maculatus maculatus</i> (SE mainland population)</u><br>Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) | Endangered | Species or species habitat may occur within area             |
| <u><i>Eubalaena australis</i></u><br>Southern Right Whale                                                                                                    | Endangered | Species or species habitat likely to occur within area       |
| <u><i>Megaptera novaeangliae</i></u><br>Humpback Whale                                                                                                       | Vulnerable | Species or species habitat known to occur within area        |
| <u><i>Potorous tridactylus tridactylus</i></u><br>Long-nosed Potoroo (SE mainland)                                                                           | Vulnerable | Species or species habitat may occur within area             |
| <u><i>Pseudomys novaehollandiae</i></u><br>New Holland Mouse                                                                                                 | Vulnerable | Species or species habitat known to occur within area        |

[http://www.environment.gov.au/cgi-bin/erin/ert/epbc/epbc\\_report.pl?searchtype=point;...](http://www.environment.gov.au/cgi-bin/erin/ert/epbc/epbc_report.pl?searchtype=point;...) 6/12/2010



|                                                                                                                                                    |                        |                                                        |
|----------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|--------------------------------------------------------|
| <u><i>Pteropus poliocephalus</i></u><br>Grey-headed Flying-fox                                                                                     | Vulnerable             | Roosting known to occur within area                    |
| <b>Ray-finned fishes</b>                                                                                                                           |                        |                                                        |
| <u><i>Macquaria australasica</i></u><br>Macquarie Perch                                                                                            | Endangered             | Species or species habitat may occur within area       |
| <u><i>Prototroctes maraena</i></u><br>Australian Grayling                                                                                          | Vulnerable             | Species or species habitat likely to occur within area |
| <b>Reptiles</b>                                                                                                                                    |                        |                                                        |
| <u><i>Caretta caretta</i></u><br>Loggerhead Turtle                                                                                                 | Endangered             | Species or species habitat known to occur within area  |
| <u><i>Chelonia mydas</i></u><br>Green Turtle                                                                                                       | Vulnerable             | Species or species habitat known to occur within area  |
| <u><i>Dermochelys coriacea</i></u><br>Leatherback Turtle, Leathery Turtle, Luth                                                                    | Endangered             | Species or species habitat likely to occur within area |
| <u><i>Eretmochelys imbricata</i></u><br>Hawksbill Turtle                                                                                           | Vulnerable             | Species or species habitat likely to occur within area |
| <u><i>Hoplocephalus bungaroides</i></u><br>Broad-headed Snake                                                                                      | Vulnerable             | Species or species habitat likely to occur within area |
| <u><i>Natator depressus</i></u><br>Flatback Turtle                                                                                                 | Vulnerable             | Species or species habitat known to occur within area  |
| <b>Sharks</b>                                                                                                                                      |                        |                                                        |
| <u><i>Carcharias taurus</i></u> (east coast population)<br>Grey Nurse Shark (east coast population)                                                | Critically Endangered  | Species or species habitat may occur within area       |
| <u><i>Carcharodon carcharias</i></u><br>Great White Shark                                                                                          | Vulnerable             | Species or species habitat may occur within area       |
| <u><i>Galeorhinus galeus</i></u><br>School Shark, Eastern School Shark, Snapper Shark, Tope, Soupfin Shark                                         | Conservation Dependent | Species or species habitat may occur within area       |
| <u><i>Pristis zijsron</i></u><br>Green Sawfish, Dindagubba, Narrowsnout Sawfish                                                                    | Vulnerable             | Species or species habitat may occur within area       |
| <u><i>Rhincodon typus</i></u><br>Whale Shark                                                                                                       | Vulnerable             | Species or species habitat may occur within area       |
| <b>Plants</b>                                                                                                                                      |                        |                                                        |
| <u><i>Acacia bynoeana</i></u><br>Bynoe's Wattle, Tiny Wattle                                                                                       | Vulnerable             | Species or species habitat likely to occur within area |
| <u><i>Caladenia tessellata</i></u><br>Thick-lipped Spider-orchid, Daddy Long-legs                                                                  | Vulnerable             | Species or species habitat likely to occur within area |
| <u><i>Cryptostylis hunteriana</i></u><br>Leafless Tongue-orchid                                                                                    | Vulnerable             | Species or species habitat may occur within area       |
| <u><i>Diuris bracteata</i></u>                                                                                                                     | Extinct                | Species or species habitat may occur within area       |
| <u><i>Eucalyptus camfieldii</i></u><br>Camfield's Stringybark                                                                                      | Vulnerable             | Species or species habitat likely to occur within area |
| <u><i>Melaleuca biconvexa</i></u><br>Biconvex Paperbark                                                                                            | Vulnerable             | Species or species habitat known to occur within area  |
| <u><i>Melaleuca deanei</i></u><br>Deane's Melaleuca                                                                                                | Vulnerable             | Species or species habitat may occur within area       |
| <u><i>Pimelea curviflora</i></u> var. <i>curviflora</i>                                                                                            | Vulnerable             | Species or species habitat may occur within area       |
| <u><i>Prostanthera askania</i></u><br>Tranquility Mintbush                                                                                         | Endangered             | Species or species habitat likely to occur within area |
| <u><i>Rhizanthella slateri</i></u><br>Eastern Underground Orchid                                                                                   | Endangered             | Species or species habitat may occur within area       |
| <u><i>Syzygium paniculatum</i></u><br>Magenta Lilly Pilly, Magenta Cherry, Pocket-less Brush Cherry, Scrub Cherry, Creek Lilly Pilly, Brush Cherry | Vulnerable             | Species or species habitat likely to occur within area |

[http://www.environment.gov.au/cgi-bin/erin/ert/epbc/epbc\\_report.pl?searchtype=point;...](http://www.environment.gov.au/cgi-bin/erin/ert/epbc/epbc_report.pl?searchtype=point;...) 6/12/2010

*Tetratheca glandulosa*  
Glandular Pink-bell

Migratory Species [ [Dataset Information](#) ]

#### Migratory Terrestrial Species

##### Birds

*Haliaeetus leucogaster*  
White-bellied Sea-Eagle

*Hirundapus caudacutus*  
White-throated Needletail

*Merops ornatus*  
Rainbow Bee-eater

*Monarcha melanopsis*  
Black-faced Monarch

*Myiagra cyanoleuca*  
Satin Flycatcher

*Rhipidura rufifrons*  
Rufous Fantail

*Xanthomyza phrygia*  
Regent Honeyeater

#### Migratory Wetland Species

##### Birds

*Ardea alba*  
Great Egret, White Egret

*Ardea ibis*  
Cattle Egret

*Charadrius bicinctus*  
Double-banded Plover

*Gallinago hardwickii*  
Latham's Snipe, Japanese Snipe

*Heteroscelus brevipes*  
Grey-tailed Tattler

*Limosa lapponica*  
Bar-tailed Godwit

*Numenius madagascariensis*  
Eastern Curlew

*Numenius minutus*  
Little Curlew, Little Whimbrel

*Numenius phaeopus*  
Whimbrel

*Pluvialis fulva*  
Pacific Golden Plover

*Rostratula benghalensis s. lat.*  
Painted Snipe

#### Migratory Marine Birds

*Apus pacificus*  
Fork-tailed Swift

*Ardea alba*  
Great Egret, White Egret

*Ardea ibis*  
Cattle Egret

*Calonectris leucomelas*  
Streaked Shearwater

*Diomedea amsterdamensis*  
Amsterdam Albatross

|            |                                                                   |
|------------|-------------------------------------------------------------------|
| Vulnerable | Species or species habitat likely to occur within area            |
| Status     | Type of Presence                                                  |
| Migratory  | Species or species habitat likely to occur within area            |
| Migratory  | Species or species habitat may occur within area                  |
| Migratory  | Species or species habitat may occur within area                  |
| Migratory  | Breeding may occur within area                                    |
| Migratory  | Breeding likely to occur within area                              |
| Migratory  | Breeding may occur within area                                    |
| Migratory  | Species or species habitat likely to occur within area            |
| Migratory  | Species or species habitat may occur within area                  |
| Migratory  | Species or species habitat may occur within area                  |
| Migratory  | Foraging, feeding or related behaviour known to occur within area |
| Migratory  | Foraging, feeding or related behaviour may occur within area      |
| Migratory  | Foraging, feeding or related behaviour known to occur within area |
| Migratory  | Foraging, feeding or related behaviour known to occur within area |
| Migratory  | Foraging, feeding or related behaviour known to occur within area |
| Migratory  | Foraging, feeding or related behaviour known to occur within area |
| Migratory  | Species or species habitat may occur within area                  |
| Migratory  | Species or species habitat may occur within area                  |
| Migratory  | Species or species habitat may occur within area                  |
| Migratory  | Species or species habitat may occur within area                  |
| Migratory  | Species or species habitat may occur within area                  |

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|                                                                                            |           |                                                              |
|--------------------------------------------------------------------------------------------|-----------|--------------------------------------------------------------|
| <u><i>Diomedea antipodensis</i></u><br>Antipodean Albatross                                | Migratory | Species or species habitat may occur within area             |
| <u><i>Diomedea dabbenena</i></u><br>Tristan Albatross                                      | Migratory | Foraging, feeding or related behaviour may occur within area |
| <u><i>Diomedea exulans (sensu lato)</i></u><br>Wandering Albatross                         | Migratory | Species or species habitat may occur within area             |
| <u><i>Diomedea gibsoni</i></u><br>Gibson's Albatross                                       | Migratory | Species or species habitat may occur within area             |
| <u><i>Macronectes giganteus</i></u><br>Southern Giant-Petrel                               | Migratory | Species or species habitat may occur within area             |
| <u><i>Macronectes halli</i></u><br>Northern Giant-Petrel                                   | Migratory | Species or species habitat may occur within area             |
| <u><i>Pterodroma leucoptera leucoptera</i></u><br>Gould's Petrel                           | Migratory | Species or species habitat may occur within area             |
| <u><i>Puffinus leucomelas</i></u><br>Streaked Shearwater                                   | Migratory | Species or species habitat may occur within area             |
| <u><i>Sterna albifrons</i></u><br>Little Tern                                              | Migratory | Species or species habitat may occur within area             |
| <u><i>Thalassarche bulleri</i></u><br>Buller's Albatross                                   | Migratory | Species or species habitat may occur within area             |
| <u><i>Thalassarche cauta (sensu stricto)</i></u><br>Shy Albatross, Tasmanian Shy Albatross | Migratory | Species or species habitat may occur within area             |
| <u><i>Thalassarche impavida</i></u><br>Campbell Albatross                                  | Migratory | Species or species habitat may occur within area             |
| <u><i>Thalassarche melanophrys</i></u><br>Black-browed Albatross                           | Migratory | Species or species habitat may occur within area             |
| <u><i>Thalassarche salvini</i></u><br>Salvin's Albatross                                   | Migratory | Species or species habitat may occur within area             |
| <u><i>Thalassarche steadi</i></u><br>White-capped Albatross                                | Migratory | Species or species habitat may occur within area             |
| <b>Migratory Marine Species</b>                                                            |           |                                                              |
| <b>Mammals</b>                                                                             |           |                                                              |
| <u><i>Balaenoptera edeni</i></u><br>Bryde's Whale                                          | Migratory | Species or species habitat may occur within area             |
| <u><i>Balaenoptera musculus</i></u><br>Blue Whale                                          | Migratory | Species or species habitat may occur within area             |
| <u><i>Caperea marginata</i></u><br>Pygmy Right Whale                                       | Migratory | Species or species habitat may occur within area             |
| <u><i>Eubalaena australis</i></u><br>Southern Right Whale                                  | Migratory | Species or species habitat likely to occur within area       |
| <u><i>Lagenorhynchus obscurus</i></u><br>Dusky Dolphin                                     | Migratory | Species or species habitat may occur within area             |
| <u><i>Megaptera novaeangliae</i></u><br>Humpback Whale                                     | Migratory | Species or species habitat known to occur within area        |
| <u><i>Orcinus orca</i></u><br>Killer Whale, Orca                                           | Migratory | Species or species habitat may occur within area             |
| <b>Reptiles</b>                                                                            |           |                                                              |
| <u><i>Caretta caretta</i></u><br>Loggerhead Turtle                                         | Migratory | Species or species habitat known to occur within area        |
| <u><i>Chelonia mydas</i></u><br>Green Turtle                                               | Migratory | Species or species habitat known to occur within area        |
| <u><i>Dermochelys coriacea</i></u><br>Leatherback Turtle, Leathery Turtle, Luth            | Migratory | Species or species habitat likely to occur within area       |
| <u><i>Eretmochelys imbricata</i></u><br>Hawksbill Turtle                                   | Migratory | Species or species habitat likely to occur within area       |

[http://www.environment.gov.au/cgi-bin/erin/ert/epbc/epbc\\_report.pl?searchtype=point;...](http://www.environment.gov.au/cgi-bin/erin/ert/epbc/epbc_report.pl?searchtype=point;...) 6/12/2010

Natator depressus

Flatback Turtle

Migratory

Species or species habitat known to occur within area

**Sharks**Carcharodon carcharias

Great White Shark

Migratory

Species or species habitat may occur within area

Rhinodon typus

Whale Shark

Migratory

Species or species habitat may occur within area

**Other Matters Protected by the EPBC Act**Listed Marine Species [ [Dataset Information](#) ]

Status

Type of Presence

**Birds**Apus pacificus

Fork-tailed Swift

Listed -  
overfly  
marine  
area

Species or species habitat may occur within area

Ardea alba

Great Egret, White Egret

Listed -  
overfly  
marine  
area

Species or species habitat may occur within area

Ardea ibis

Cattle Egret

Listed -  
overfly  
marine  
area

Species or species habitat may occur within area

Calonectris leucomelas

Streaked Shearwater

Listed

Species or species habitat may occur within area

Catharacta skua

Great Skua

Listed

Species or species habitat may occur within area

Charadrius bicinctus

Double-banded Plover

Listed -  
overfly  
marine  
area

Foraging, feeding or related behaviour known to occur within area

Diomedea amsterdamensis

Amsterdam Albatross

Listed

Species or species habitat may occur within area

Diomedea antipodensis

Antipodean Albatross

Listed

Species or species habitat may occur within area

Diomedea dabbenena

Tristan Albatross

Listed

Foraging, feeding or related behaviour may occur within area

Diomedea exulans (sensu lato)

Wandering Albatross

Listed

Species or species habitat may occur within area

Diomedea gibsoni

Gibson's Albatross

Listed

Species or species habitat may occur within area

Gallinago hardwickii

Latham's Snipe, Japanese Snipe

Listed -  
overfly  
marine  
area

Foraging, feeding or related behaviour may occur within area

Gallinago megala

Swinhoe's Snipe

Listed -  
overfly  
marine  
area

Foraging, feeding or related behaviour likely to occur within area

Gallinago stenura

Pin-tailed Snipe

Listed -  
overfly  
marine  
area

Foraging, feeding or related behaviour likely to occur within area

Haliaeetus leucogaster

White-bellied Sea-Eagle

Listed

Species or species habitat likely to occur within area

Heteroscelus brevipes

Grey-tailed Tattler

Listed

Foraging, feeding or related behaviour known to occur within area

Himantopus himantopus

Black-winged Stilt

Listed -  
overfly

Foraging, feeding or related behaviour known to occur within area

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|                                                                                            |                              |                                                                    |
|--------------------------------------------------------------------------------------------|------------------------------|--------------------------------------------------------------------|
|                                                                                            | marine area                  |                                                                    |
| <u><i>Hirundapus caudacutus</i></u><br>White-throated Needletail                           | Listed - overfly marine area | Species or species habitat may occur within area                   |
| <u><i>Lathamus discolor</i></u><br>Swift Parrot                                            | Listed - overfly marine area | Species or species habitat likely to occur within area             |
| <u><i>Limosa lapponica</i></u><br>Bar-tailed Godwit                                        | Listed                       | Foraging, feeding or related behaviour known to occur within area  |
| <u><i>Macronectes giganteus</i></u><br>Southern Giant-Petrel                               | Listed                       | Species or species habitat may occur within area                   |
| <u><i>Macronectes halli</i></u><br>Northern Giant-Petrel                                   | Listed                       | Species or species habitat may occur within area                   |
| <u><i>Merops ornatus</i></u><br>Rainbow Bee-eater                                          | Listed - overfly marine area | Species or species habitat may occur within area                   |
| <u><i>Monarcha melanopsis</i></u><br>Black-faced Monarch                                   | Listed - overfly marine area | Breeding may occur within area                                     |
| <u><i>Myiagra cyanoleuca</i></u><br>Satin Flycatcher                                       | Listed - overfly marine area | Breeding likely to occur within area                               |
| <u><i>Numenius madagascariensis</i></u><br>Eastern Curlew                                  | Listed                       | Foraging, feeding or related behaviour known to occur within area  |
| <u><i>Numenius minutus</i></u><br>Little Curlew, Little Whimbrel                           | Listed - overfly marine area | Foraging, feeding or related behaviour likely to occur within area |
| <u><i>Numenius phaeopus</i></u><br>Whimbrel                                                | Listed                       | Foraging, feeding or related behaviour known to occur within area  |
| <u><i>Pluvialis fulva</i></u><br>Pacific Golden Plover                                     | Listed                       | Foraging, feeding or related behaviour known to occur within area  |
| <u><i>Rhipidura rufifrons</i></u><br>Rufous Fantail                                        | Listed - overfly marine area | Breeding may occur within area                                     |
| <u><i>Rostratula benghalensis s. lat.</i></u><br>Painted Snipe                             | Listed - overfly marine area | Species or species habitat may occur within area                   |
| <u><i>Sterna albifrons</i></u><br>Little Tern                                              | Listed                       | Species or species habitat may occur within area                   |
| <u><i>Thalassarche bulleri</i></u><br>Buller's Albatross                                   | Listed                       | Species or species habitat may occur within area                   |
| <u><i>Thalassarche cauta (sensu stricto)</i></u><br>Shy Albatross, Tasmanian Shy Albatross | Listed                       | Species or species habitat may occur within area                   |
| <u><i>Thalassarche impavida</i></u><br>Campbell Albatross                                  | Listed                       | Species or species habitat may occur within area                   |
| <u><i>Thalassarche melanophrys</i></u><br>Black-browed Albatross                           | Listed                       | Species or species habitat may occur within area                   |
| <u><i>Thalassarche salvini</i></u><br>Salvin's Albatross                                   | Listed                       | Species or species habitat may occur within area                   |

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|                                                                                                               |        |                                                  |
|---------------------------------------------------------------------------------------------------------------|--------|--------------------------------------------------|
| <i>Thalassarche steadi</i><br>White-capped Albatross                                                          | Listed | Species or species habitat may occur within area |
| <b>Mammals</b>                                                                                                |        |                                                  |
| <i>Arctocephalus forsteri</i><br>New Zealand Fur-seal                                                         | Listed | Species or species habitat may occur within area |
| <i>Arctocephalus pusillus</i><br>Australian Fur-seal, Australo-African Fur-seal                               | Listed | Species or species habitat may occur within area |
| <b>Ray-finned fishes</b>                                                                                      |        |                                                  |
| <i>Acentronura tentaculata</i><br>Shortpouch Pygmy Pipehorse                                                  | Listed | Species or species habitat may occur within area |
| <i>Festuculex cinctus</i><br>Girdled Pipefish                                                                 | Listed | Species or species habitat may occur within area |
| <i>Filicampus tigris</i><br>Tiger Pipefish                                                                    | Listed | Species or species habitat may occur within area |
| <i>Heraldia nocturna</i><br>Upside-down Pipefish, Eastern Upside-down Pipefish, Eastern Upside-down Pipefish  | Listed | Species or species habitat may occur within area |
| <i>Hippichthys penicillus</i><br>Beady Pipefish, Steep-nosed Pipefish                                         | Listed | Species or species habitat may occur within area |
| <i>Hippocampus abdominalis</i><br>Bigbelly Seahorse, Eastern Potbelly Seahorse, New Zealand Potbelly Seahorse | Listed | Species or species habitat may occur within area |
| <i>Hippocampus whitei</i><br>White's Seahorse, Crowned Seahorse, Sydney Seahorse                              | Listed | Species or species habitat may occur within area |
| <i>Histiogamphelus briggsii</i><br>Crested Pipefish, Briggs' Crested Pipefish, Briggs' Pipefish               | Listed | Species or species habitat may occur within area |
| <i>Lissocampus runa</i><br>Javelin Pipefish                                                                   | Listed | Species or species habitat may occur within area |
| <i>Maroubra perserrata</i><br>Sawtooth Pipefish                                                               | Listed | Species or species habitat may occur within area |
| <i>Notiocampus ruber</i><br>Red Pipefish                                                                      | Listed | Species or species habitat may occur within area |
| <i>Phyllopteryx taeniolatus</i><br>Common Seadragon, Weedy Seadragon                                          | Listed | Species or species habitat may occur within area |
| <i>Solegnathus spinosissimus</i><br>Spiny Pipehorse, Australian Spiny Pipehorse                               | Listed | Species or species habitat may occur within area |
| <i>Solenostomus cyanopterus</i><br>Robust Ghostpipefish, Blue-finned Ghost Pipefish,                          | Listed | Species or species habitat may occur within area |
| <i>Solenostomus paeignius</i><br>Rough-snout Ghost Pipefish                                                   | Listed | Species or species habitat may occur within area |
| <i>Solenostomus paradoxus</i><br>Ornate Ghostpipefish, Harlequin Ghost Pipefish, Ornate Ghost Pipefish        | Listed | Species or species habitat may occur within area |
| <i>Stigmatopora argus</i><br>Spotted Pipefish, Gulf Pipefish                                                  | Listed | Species or species habitat may occur within area |
| <i>Stigmatopora nigra</i><br>Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish                          | Listed | Species or species habitat may occur within area |
| <i>Syngnathoides biaculeatus</i><br>Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish          | Listed | Species or species habitat may occur within area |
| <i>Trachyrhamphus bicoarctatus</i><br>Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish          | Listed | Species or species habitat may occur within area |
| <i>Urocampus carinirostris</i><br>Hairy Pipefish                                                              | Listed | Species or species habitat may occur within area |

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*Vanacampus margaritifer*

Mother-of-pearl Pipefish

Listed Species or species habitat may occur within area

**Reptiles***Caretta caretta*

Loggerhead Turtle

Listed Species or species habitat known to occur within area

*Chelonia mydas*

Green Turtle

Listed Species or species habitat known to occur within area

*Dermochelys coriacea*

Leatherback Turtle, Leathery Turtle, Luth

Listed Species or species habitat likely to occur within area

*Eretmochelys imbricata*

Hawksbill Turtle

Listed Species or species habitat likely to occur within area

*Natator depressus*

Flatback Turtle

Listed Species or species habitat known to occur within area

*Pelamis platurus*

Yellow-bellied Seasnake

Listed Species or species habitat may occur within area

Whales and Other Cetaceans [ [Dataset Information](#) ]

Status Type of Presence

*Balaenoptera acutorostrata*

Minke Whale

Cetacean Species or species habitat may occur within area

*Balaenoptera edeni*

Bryde's Whale

Cetacean Species or species habitat may occur within area

*Balaenoptera musculus*

Blue Whale

Cetacean Species or species habitat may occur within area

*Caperea marginata*

Pygmy Right Whale

Cetacean Species or species habitat may occur within area

*Delphinus delphis*

Common Dolphin, Short-beaked Common Dolphin

Cetacean Species or species habitat may occur within area

*Eubalaena australis*

Southern Right Whale

Cetacean Species or species habitat likely to occur within area

*Grampus griseus*

Risso's Dolphin, Grampus

Cetacean Species or species habitat may occur within area

*Lagenorhynchus obscurus*

Dusky Dolphin

Cetacean Species or species habitat may occur within area

*Megaptera novaeangliae*

Humpback Whale

Cetacean Species or species habitat known to occur within area

*Orcinus orca*

Killer Whale, Orca

Cetacean Species or species habitat may occur within area

*Stenella attenuata*

Spotted Dolphin, Pantropical Spotted Dolphin

Cetacean Species or species habitat may occur within area

*Tursiops aduncus*

Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin

Cetacean Species or species habitat likely to occur within area

*Tursiops truncatus s. str.*

Bottlenose Dolphin

Cetacean Species or species habitat may occur within area

Commonwealth Lands [ [Dataset Information](#) ]

Communications, Information Technology and the Arts - Australian Postal Corporation

Communications, Information Technology and the Arts - Telstra Corporation Limited

Defence

Defence - Defence Housing Authority

Places on the RNE [ [Dataset Information](#) ]

Note that not all Indigenous sites may be listed.

**Historic**Gosford Courthouse NSWHoly Cross Catholic Church and Graveyard NSW[http://www.environment.gov.au/cgi-bin/erin/ert/epbc/epbc\\_report.pl?searchtype=point;...](http://www.environment.gov.au/cgi-bin/erin/ert/epbc/epbc_report.pl?searchtype=point;...) 6/12/2010

[St Pauls Anglican Church NSW](#)

[The Grange NSW](#)

[Wyoming Cottage and Helys Grave NSW](#)

#### **Indigenous**

[Daleys Point Area NSW](#)

#### **Natural**

[Bouddi National Park \(1981 boundary\) NSW](#)

[Bouddi National Park Marine Section NSW](#)

[Brisbane Water National Park \(1981 boundary\) NSW](#)

[Rileys Island and Pelican Island Nature Reserves NSW](#)

[Wamberal Lagoon Nature Reserve NSW](#)

### **Extra Information**

State and Territory Reserves [ [Dataset Information](#) ]

Bouddi National Park, NSW

Brisbane Water National Park, NSW

Cockle Bay Nature Reserve, NSW

Pelican Island Nature Reserve, NSW

Rileys Island Nature Reserve, NSW

Wamberal Lagoon Nature Reserve, NSW

Wambina Nature Reserve, NSW

Wyrabalong National Park, NSW

Regional Forest Agreements [ [Dataset Information](#) ]

Note that all RFA areas including those still under consideration have been included.

North East NSW RFA, New South Wales

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### **Caveat**

The information presented in this report has been provided by a range of data sources as [acknowledged](#) at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the *Environment Protection and Biodiversity Conservation Act 1999*. It holds mapped locations of World Heritage and Register of National Estate properties, Wetlands of International Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

For species where the distributions are well known, maps are digitised from sources such as recovery plans and detailed habitat studies. Where appropriate, core breeding, foraging and roosting areas are indicated under "type of presence". For species whose distributions are less well known, point locations are collated from government wildlife authorities, museums, and non-government organisations; bioclimatic distribution models are generated and these validated by experts. In some cases, the distribution maps are based solely on expert knowledge.

Only selected species covered by the [migratory](#) and [marine](#) provisions of the Act have been mapped.

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as [extinct](#) or [considered as vagrants](#)

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- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- non-threatened seabirds which have only been mapped for recorded breeding sites;
- seals which have only been mapped for breeding sites near the Australian continent.

Such breeding sites may be important for the protection of the Commonwealth Marine environment.

## Acknowledgments

This database has been compiled from a range of data sources. The Department acknowledges the following custodians who have contributed valuable data and advice:

- New South Wales National Parks and Wildlife Service
- Department of Sustainability and Environment, Victoria
- Department of Primary Industries, Water and Environment, Tasmania
- Department of Environment and Heritage, South Australia Planning SA
- Parks and Wildlife Commission of the Northern Territory
- Environmental Protection Agency, Queensland
- Birds Australia
- Australian Bird and Bat Banding Scheme
- Australian National Wildlife Collection
- Natural history museums of Australia
- Queensland Herbarium
- National Herbarium of NSW
- Royal Botanic Gardens and National Herbarium of Victoria
- Tasmanian Herbarium
- State Herbarium of South Australia
- Northern Territory Herbarium
- Western Australian Herbarium
- Australian National Herbarium, Atherton and Canberra
- University of New England
- Other groups and individuals

ANUCiM Version 1.8, Centre for Resource and Environmental Studies, Australian National University was used extensively for the production of draft maps of species distribution. Environment Australia is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

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## **APPENDIX 6**

### **STATE ENVIRONMENTAL PLANNING POLICY No.19 BUSHLAND IN URBAN AREAS ASSESSMENT**

## STATE ENVIRONMENTAL PLANNING POLICY No.19 BUSHLAND IN URBAN AREAS

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This Assessment has been prepared in regard to the Draft Local Environmental Plan for the proposed rezoning of Lot 2 DP 155116, Lots 8 and 9 DP 876102, Lot 202 DP 831864, Lot 4 DP 37914 and Lot 1 DP 3811971 Kings Avenue Terrigal. It is proposed to subdivide the land to create residential building allotments with associated infrastructure such as access, electricity and water. An amount of clearing for bushfire protection may also be required. The proposed development will also provide for a Riparian Zone in the western creekline with retained vegetation that will be managed together with its associated 10 metre vegetated buffer on both sides with a further 10 metre wide bushfire asset protection zone outside the vegetation buffer zone. In addition, an area of bushland approximately 27.28 hectares in size located in the southern parts of the site and adjoining the existing Open Space areas will be retained as bushland and dedicated to Council.

The site is located approximately 3.25km west of Terrigal and 2km south-east of Erina Fair. The site is an irregular shaped land parcel that covers approximately 54 hectares. The subject site is bordered by Kings Avenue to the north with existing residential development further to the north, there is also existing residential development adjoining the site to the south-east and north-west and rural residential development to the south. The south-western boundary of the subject site adjoins the Kincumba Mountain Regional Reserve which forms part of Gosford Council's Coastal Open Space System (COSS). The north-eastern boundary of the site adjoins open space which contains a creekline. At present there is one dwelling on the site located off Belar Avenue adjoining the eastern boundary. Approximate MGA coordinates of the study area are 352500E 6298000N.

The property straddles a ridgeline and has southerly and northerly aspects with several sideslopes associated with two drainage lines on the northern aspect and one on the southern aspect. The elevations within the site range from approximately 20 to 70 metres AHD. Due to the presence of the Kincumba Mountain Regional Reserve which forms part of Gosford Council's Coastal Open Space System (COSS) adjoining the subject site an assessment is required under State Environmental Planning Policy 19 – Bushland in Urban Areas.

The southern 18 hectares of the subject site will be zoned for public open space and will then form part of the larger area of Open Space (COSS) to the west. This assessment has been undertaken due to the presence of the Open Space within and adjoining the subject site. In this regard Clause 9 of SEPP N° 19 States in part that...

*"the public authority shall not carry out that development or grant the approval or development consent unless it has taken into account:*

- (c) the need to retain any bushland on the land;*
- (d) the effect of the proposed development on bushland zoned or reserved for public open space purposes and, in particular, on the erosion of soils, the siltation of streams and waterways and the spread of weeds and exotic plants within the bushland, and*
- (e) any other matters which, in the opinion of the approving or consent authority, are relevant to the protection and preservation of bushland zoned or reserved for public open space purposes".*

SEPP 19 policy refers to natural bushland in urban areas. For an area to be classified as urban bushland, the site must satisfy Clause 4 points (i), (ii) and (iii) of Circular No. B13.

After detailed inspections of the subject site and the adjoining land zoned as Public Reserve, it was identified that the northern parts of the subject site (approximately 17.38 hectares) are to be developed while the north-western creekline (approximately 1.9 hectares), and the southern parts of the subject site (approximately 27.28 hectares) will be retained.

Approximately 15 hectares of land incorporating the north-western creek Core Riparian Zone (CRZ) and the associated 10 metre wide buffers each side of the CRZ as well as cleared or disturbed land at various locations within the 7(a) conservation zone area will be retained and rehabilitated via weed removal and regeneration.

The 27.28ha area of bushland in the southern parts of the site will be retained and dedicated to Council as part of the local Coastal Open Space System (COSS).

The Reserve adjoining the site is currently vegetated with natural vegetation and is in moderate to good condition. The Reserve is associated with the Kincumba Mountain Regional Reserve which forms part of Gosford Council's Coastal Open Space System (COSS). The vegetation is characterised by a mixed sclerophyllous open forest, which is dominated primarily by *Eucalyptus* species (*E. pilularis* and others) with a dense mid-storey and a variable shrub and groundcover understorey. Under the terms of the SEPP 19 Circular B13 this Public Reserve is considered to satisfy the bushland definition detailed under Clause 4 and is hence required to be assessed in terms of the potential impacts of the proposed adjoining development on this bushland remnant.

The assessment of this Public Reserve in terms of the potential impact of the proposed development is to be completed under consideration of the specific aims of this policy listed in Clause 2 (2) 'a to m'. This assessment is as follows:

**(a) to protect the remnants of plant communities which were once characteristic of land now within an urban area.**

The proposed development will result in the development of approximately 17.38 hectares of land adjoining the eastern boundary of the Public Reserve. The Open Space is currently vegetated with natural vegetation at all structural levels. The proposed development will dedicate approximately 27.28 hectares adjoining the eastern boundary of the COSS as a further area of Open Space thereby increasing the area occupied by the COSS and other conserved areas by approximately 27.28 hectares. It is considered that the proposed development is likely to result in the following broad impacts to varying levels:

- The increase of edge effects;
- A slight increase in stormwater runoff; and
- A reduction in the occurrence of natural processes such as fire.

At this stage the bushland remnant is in fair to good condition, and has already suffered from edge effects from adjoining residential land and a reduction in natural processes such as fire as a result of the degree of development in the local area. In addition the Open Space land has suffered from some localised incursions of exotic weeds such as *Lantana camara* (Lantana), *Ligustrum sinense* (Small-leaved Privet), *Ligustrum lucidum* (Large-leaved Privet) and *Ochna serrulata* (Mickey Mouse Plant). The proposed development will result in the development of an additional urban interface with this bushland remnant. This will increase the edge effect, however, as the southern extent of the proposed development is located on the upper north facing slopes, and the proposed development in the southern parts of the



development area will incorporate a perimeter road with a cycleway through a managed re-vegetated area. It is expected that this type of development will have a lesser impact than urban development and will provide the space and opportunity to manage the interface with respect to edge effects.

The proposed development will not significantly reduce the natural bushland within the local area as the future proposed dwellings will be located primarily within areas of previously disturbed vegetation. In addition, the areas of riparian vegetation in the north-west of the site will be expanded and rehabilitated to the required 30 metres in total width as required by the NSW Office of Water. Therefore it is considered that the proposed development will have no effect on the existing vegetation connectivity to any other areas of native vegetation.

**(b) to retain bushland in parcels of a size and configuration which will enable the existing plant and animal communities to survive in the long term.**

The adjoining Kincumba Mountain Regional Reserve occupies in excess of 445 hectares and is adjoined by other areas of native vegetation extending approximately 6km to the south-west to Yattalunga and Green Point. The addition of the southern 18 hectare portion of the subject site will consolidate the vegetated corridor and will add the linkage to the corridor which extends eastwards from the subject site to Terrigal and North Avoca approximately 2.5km away. The proposed development of the site will increase the size and connectivity of this Public Reserve and will enable the existing plant and animal communities to survive in the long term.

**(c) to protect rare and endangered flora and fauna species**

No threatened flora species were identified within the proposed development site. The following twelve threatened species as listed within the Schedules of the *Threatened Species Conservation Act (1995)* were observed on-site during surveys.

- Little Eagle
- Little Lorikeet
- Powerful Owl
- Sooty Owl
- Yellow-bellied Glider
- Grey-headed Flying-fox
- Eastern Bentwing-bat
- Eastern False Pipistrelle
- Greater Broad-nosed Bat
- Little Bentwing-bat
- Yellow-bellied Sheath-tail-bat
- Eastern Freetail-bat

No endangered populations were identified within the site. One Endangered Ecological Community, Lowland Rainforest, as listed in Schedule 3 of the *TSC Act (1995)*, is present on the subject site. As identified within the flora and fauna assessment report, it was identified that there is potential for a number of threatened fauna species to either forage and / or breed within the site and immediate local area.

It is considered that the potential impact of the proposed development on these threatened species can be minimised by the retention of as much tree canopy as possible, with an effort towards the retention of habitat trees within the site wherever possible. This can be achieved through the appropriate location of the proposed dwellings to minimise the loss of native trees. If the retention of tree hollows is an impractical goal, then it is suggested that these

habitat attributes be replaced by means of introducing suitable nesting boxes on-site or alternatively within the nearby Open Space.

**(d) to protect habitats for native flora and fauna**

As identified within the flora and fauna assessment report for the proposed development, it was identified that there is potential habitat for a number of threatened fauna species within and adjacent to the subject site including the bushland within the Public Reserve.

It is considered that the potential impact of the proposed development on these flora and fauna issues will be minimised by the retention of a large area of natural bushland and the retention and rehabilitation of the north-western creekline corridor / riparian zone. The protection of flora and fauna habitats can be supplemented through the appropriate location of dwellings and the replacement of hollow bearing trees lost to development in a suitable landscape design. If the habitat or hollow bearing trees require removal due to structural safety issues then it is considered appropriate to replace the hollows with nest boxes within the Open Space areas along the adjacent creekline vegetation corridor and in the adjoining Open Space areas.

Appropriate set backs from the bushland within the Public Reserve should be implemented thereby minimising the effects of the edge effects such as weed invasion, stormwater run-on and nutrient loading this can be achieved through the management of bushfire Asset Protection Zones to enable effective control of weeds. In this respect the separation of the proposed development area from the Open Space is achieved by the required riparian buffers and the additional space outside of the riparian buffers to be managed as bushfire Asset Protection Zones. Landscaping with locally indigenous species within the proposed development area will also aid in the maintenance of the natural flora and fauna values present within the Public Reserve and within the wider local area.

The retention of the southern (27.28ha) portion of the site as well as the managed and rehabilitated north-western creekline and corridor areas on site will assist in maintaining habitat values and will consolidate the connectivity for all native flora and fauna within the local area.

**(e) to protect wildlife corridors and vegetation links with other nearby bushland**

The adjoining Kincumba Mountain Regional Reserve occupies in excess of 445 hectares and is adjoined by other areas of native vegetation extending approximately 6km to the south-west to Yattalunga and Green Point. The addition of the southern 27.28 hectare portion of the subject site and management of adjacent corridor areas will consolidate the vegetated corridor and will add the linkage to the corridor which extends eastwards from the subject site to Terrigal and North Avoca approximately 2.5km away. The proposed development of the site will increase the size and connectivity of this Public Reserve and will enable the existing plant and animal communities to survive in the long term.

**(f) to protect bushland as a natural stabiliser of the soil surface**

The current condition of the subject site is reasonably good in relation to its values as a natural stabiliser of the soil surface. Vegetation at the shrub and groundcover strata is generally sufficient to protect the soils from mass movement through erosion.

The condition of the bushland within the Public Reserve is good in terms of its value for stabilising the soil surface. The stability of soils within the Public Reserve will not be altered as a result of the proposed residential subdivision. As the soils within the Public Reserve are upslope from the development area of the site, they will not be impacted by the proposed

development. In addition, the north-western creekline will be managed with respect to erosion control and will incorporate the minimum width vegetated riparian buffers on both sides of the Core Riparian Zone.

**(g) to protect bushland for its scenic values, and to retain the unique visual identity of the landscape**

The subject site is bordered by Kings Avenue to the north with existing residential development further to the north, there is also existing residential development adjoining the site to the south-east and north-west and rural residential development to the south. The south-western boundary of the subject site adjoins the Kincumba Mountain Regional Reserve which forms part of Gosford Council's Coastal Open Space System (COSS). The north-eastern boundary of the site adjoins open space which contains a creekline.

The proposed residential subdivision is expected to occupy the northern 17.38 hectares of the subject site. The retention of vegetation wherever possible within the site will act as a visual screen and will maintain the visual tree canopy as viewed from adjoining areas. Development will not be undertaken on the ridgetop within the subject site which will maintain the visual amenity of the naturally vegetated skyline.

The subject site and Public Reserve are currently characterised by a tree canopy cover of reasonable density (approximately 30-55% and 65-70% canopy cover respectively). The proposed development will result in the alteration of this canopy cover within the area proposed for development. Tree canopy cover within the Bushland Reserve will not be altered as a result of the proposed development.

**(h) to protect significant geological features**

The geology of the subject site is characterised by the Erina Soil Landscape. This landscape is underlain by the Terrigal Formation consisting of lithic and quartz sandstone, claystone, sedimentary breccia and conglomerate (Murphy 1992). Topography is undulating to rolling rises on low hills with moderately broad ridges and crests. Soils present within this formation include fine sandy loam, pedal clay loam, brown sandy clay and pedal clay (Murphy 1992).

The subject site and adjoining Public Reserve do not contain any geological features of local and / or regional significance. The geological characteristics of the site and Public Reserve are consistent with the predominant landform features of the local area. The proposed development will have no impact on any significant geological features within the local area.

**(i) to protect existing landforms, such as natural drainage lines, watercourses and foreshores**

The landforms of the site are consistent with the main topographical features of the local area including slight to moderately steep slopes with few rocky outcrops. Several natural drainage lines are situated within the Reserve. These drainage lines are dependant on the local aspects and mostly run north or southward. It is considered that the proposed development will have no significant influence on the existing landforms within the Public Reserve.

**(j) to protect archaeological relics**

The Aboriginal Site Survey Report did not identify any archaeological site on the subject site.

The proposed development area has undergone previous disturbances such as past tree, shrub and groundcover removal; regular slashing; grazing by livestock; and moderate to high

levels of weed invasion. It is considered that the presence of archaeological / aboriginal relics within the proposed development area is unlikely.

The Public Reserve and its bushland character will remain undeveloped and principally unaffected by the proposed development. It is considered that this issue does not require further consideration at this time.

**(k) to protect the recreational potential of the bushland**

The bushland within the Public Reserve is part of the Kincumba Mountain Regional Reserve which forms part of Gosford Council's Coastal Open Space System (COSS). This open space area permits a wide range of recreational activities. Due to the topography and nature of bushland within the Public Reserve, it is considered that the values of this Reserve for recreational activities are most suited to activities such as bushwalking and nature appreciation. It is considered that the proposed development will actually enhance the recreational potential of this Reserve for the public by the dedication of additional reserve areas and facilitate better public access.

**(l) to protect the education potential of the bushland**

The natural values of this Public Reserve for education purposes are moderately high given the representation of indigenous flora and fauna species and access potential for the public. The proposed development will not alter the potential of the Public Reserve for the purposes of education.

**(m) to maintain bushland in locations which are readily accessible to the community**

At this stage the Public Reserve adjoins a number of urban interfaces, the proposed development site is among them as it is immediately adjacent to the northern boundary of the Bushland Reserve. The proposed development will result in the creation of an additional urban interface along the northern boundary of the Bushland Reserve but this interface is expected to be of low impact as it is downslope from the bushland and will be comprised of large lots. Existing access to, from and within the Reserve will not be diminished by the proposed development instead it will be enhanced.

**(n) to promote the management of bushland in a manner which protects and enhances the quality of the bushland and facilitates public enjoyment of the bushland compatible with conservation**

The current management practice for the Public Reserve and its bushland values has resulted in the conservation of the quality of this Reserve and has facilitated the 'enjoyment' of the bushland in a manner 'compatible with conservation'. It is the view of *Conacher Environmental Group* that this status will not change in the advent of additional development within the subject site in close proximity to the northern boundary of this Reserve.

**Conclusion**

The proposed development will not compromise the values of the adjoining bushland areas in relation to the aims of SEPP No.19.