
Appendix 3 Threatened Species Assessment (Andrews Neil)

Port Stephens Council

THREATENED SPECIES ASSESSMENT

PART LOT 59 DP 831253
360 SOLDIERS POINT ROAD
SALAMANDER BAY

PORT STEPHENS COUNCIL

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PART LOT 59 DP 831253
360 SOLDIERS POINT ROAD
SALAMANDER BAY

OUR REF: WB/04107/050707RPT_FINAL

Issue	Date	Description	By
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1.0 INTRODUCTION

Andrews.Neil Pty Ltd was engaged by Port Stephens Council to prepare a threatened species assessment for land at Part Lot 59 DP 831253, 360 Soldiers Point Road Salamander Bay (the study area) which is subject to a proposed residential sub-division. Surveys were undertaken within stage 2 (the survey area) between 11 and 14 September 2006; stage 1 was surveyed previously by ERM (2005a). Results of ERM (2005a) are considered to be current and as such stage 1 was not included in surveys undertaken for this assessment.

The purpose of this report is to:

- Identify the extent and distribution of vegetation communities within the survey area,
- Assess the structural and floristic characteristics of each vegetation community,
- Undertake targeted surveys for birds, mammals, reptiles and amphibians within the survey area,
- Assess the extent and suitability of habitat resources within the study area for rare or threatened flora and fauna species,
- Identify the extent of Koala habitat within the study area according to the Port Stephens Comprehensive Koala Plan of Management and conduct Koala spot assessments to estimate the level of Koala activity,
- Identify and discuss the attributes of potential wildlife corridors,
- Assess the potential ecological impacts of the proposed development pursuant to section 5A of the NSW *Environmental Planning and Assessment Act, 1979* and the Commonwealth *Environmental Protection and Biodiversity Conservation Act, 1999*, and
- Provide recommendations relating to the management of the residential development that should be implemented to ameliorate any adverse ecological impacts.

1.1 Abbreviations and Definitions

The following abbreviations and definitions are used in this report:

Abbreviations:

- EP&A Act = NSW *Environmental Planning and Assessment Act, 1979*.
- EPBC Act = Commonwealth *Environmental Protection and Biodiversity Conservation Act, 1999*.
- NPW Act = NSW *National Parks and Wildlife Act, 1974*.
- NW Act = NSW *Noxious Weeds Act, 1993*.
- TSC Act = NSW *Threatened Species Conservation Act, 1995*.
- CAMBA = *China Australia Migratory Birds Agreement, 1988*.
- JAMBA = *Japan Australia Migratory Birds Agreement, 1981*.
- CKPoM = Port Stephens Comprehensive Koala Plan of Management (2001).
- DEC = NSW Department of Environment and Conservation.
- DEH = Commonwealth Department of Environment and Heritage.
- EEC = Endangered Ecological Community.
- ERM = Environmental Resource Management Australia Pty Ltd.
- GIS = Geographic Information System.
- KTP = Key Threatening Process.
- LGA = Local Government Area.
- LHCCREMS = Lower Hunter and Central Coast Regional Environmental Management Strategy.
- MKH = Marginal Koala Habitat.
- MNES = Matters of National Environmental Significance.
- PKH = Preferred Koala Habitat.
- PSC = Port Stephens Council.
- ROTAP = Rare or Threatened Australian Plants (Briggs and Leigh 1995).
- SEPP = NSW State Environmental Planning Policy.
- SKH = Supplementary Koala Habitat.

Definitions:

- Study Area = Part Lot 59 DP 831253, 360 Soldiers Point Road (Figure 1).
- Survey Area = Area in which surveys were undertaken by Andrews.Neil (2006) (Figure 1).
- Development Area = Area to be developed for residential purposes (Figure 1).
- Local Area = Area within a ten kilometre radius of the study area.
- Significant Species = species listed as threatened under the TSC Act, EPBC Act and migratory species listed under the international treaties CAMBA, JAMBA and the Bonn Convention, and regionally significant flora species listed on ROTAP.

1.2 Background

Previous flora and fauna surveys of the study area have been undertaken by:

- Conacher Travers (1998) "Flora and Fauna Assessment Report: Proposed Residential Development, Project Stage 16 and 17 – Lot 59 DP 831253 Kanimbla Drive, Salamander Bay"
- ERM (2005a) "Ecological Assessment: Salamander Waters Estate – Stage 1"
- ERM (2005b) "Ecological and Bushfire Review: Salamanders Waters Estate – Stage 2"

Table 1 identifies the threatened species and endangered ecological communities identified within the study area during previous surveys.

TABLE 1 – THREATENED SPECIES AND EEC'S PREVIOUSLY RECORDED IN STUDY AREA

Species	Legal Status*		Location Details	Conacher Travers (1998)	ERM (2005a)
	TSC Act	EPBC Act			
<i>Crinia tinnula</i> Wallum Froglet	V		Lepironia wetland within stage 1; swamp forest to the west of the study area.	✓	✓
<i>Petaurus norfolcensis</i> Squirrel Glider	V		Within the northern section of stage 2; swamp forest within stage 1.	✓	✓
<i>Miniopterus australis</i> Little Bent-wing Bat	V		Throughout stage 2.	✓	✓
<i>Mormopterus norfolkensis</i> Eastern Free-tail Bat	V		Throughout study area.	✓	
<i>Scoteanax rueppellii</i> Greater Broad-nosed Bat	V		Throughout study area.	✓	
<i>Myotis adversus</i> Large-footed Myotis	V		Over wetland adjacent to stage 2.		✓
<i>Pteropus poliocephalus</i> Grey-headed Flying Fox	V	V	Flying over study area	✓	
<i>Phascolarctos cinereus</i> Koala	V		Within swamp forest in study area; Swamp forest adjacent to study area.		✓
<i>Ninox strenua</i> Powerful Owl	V		1 to 2 kilometres due west of the study area.		✓
Sydney Freshwater Wetlands	EEC		Lepironia wetland.		✓

*V = Vulnerable; E = Endangered; EEC = Endangered Ecological Community.

Conacher Travers (1998) concluded that development of the study area would not have any potentially significant impacts on threatened species occurring within or surrounding the study area. This conclusion was based on the assumption that the habitats represented within the study area occurred within conservation reserves in the local area. Recommendations designed to ameliorate impacts of development were not provided.



LEGEND

 Study Area

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FIGURE 1: Study Area

PROJECT: Salamander Waters

CLIENT: Port Stephens Council

ERM (2005a; 2005b) identified a number of constraints to development of the study area which are summarised below:

- The Lepironia swamp within stage 1 was considered to represent the EEC “Sydney Freshwater Wetlands” while vegetation directly adjacent to the swamp was considered to represent Preferred Koala Habitat. As a result it was recommended that the swamp vegetation be retained with a buffer area of 30 metres which would result in the retention of Preferred Koala Habitat surrounding the swamp.
- For stage 2 it was recommended that development be confined to the eastern and northern section of the study area in the vicinity of Kanimbla Drive as this would enable:
 - Retention of hollow-bearing trees and foraging resources on the western slope within the Coastal Sand Apple/Blackbutt Forest,
 - An adequate ecological buffer to Preferred Koala Habitat within Swamp Mahogany – Paperbark Forest adjacent to Old Soldiers Point Road,
 - Maintenance of a corridor linking Preferred Koala Habitat in stage 1 and at the southern section of stage 2,
 - Maintenance of an east to west movement corridor across swamp forest in the southern section of the study area, and
 - Protection of the Lepironia swamp and drainage lines from potential water quality impacts.

Further recommendations included:

- Retention of hollow bearing trees within the APZ where possible,
- Retention of swamp forest vegetation in order to:
 - Maximise retention of Preferred Koala Habitat in order to satisfy the performance criteria of the CKPoM,
 - Maximise retention and minimise disturbance of a habitat linking area and Supplementary Koala Habitat in accordance with the performance criteria of the CKPoM,
 - Minimise impact on Koala and potential movement corridors,
 - Maximise retention of winter flowering resources for Squirrel Glider and migratory species such as Swift Parrot, and
 - Protect some of the habitat where Squirrel Glider was recorded.

Results and conclusions of this study are relatively consistent with ERM (2005a; 2005b). Anomalies exist in relation to the classification of the Lepironia swamp. This community is considered to represent the EEC “freshwater wetlands on coastal floodplains of the NSW North Coast, Sydney Basin and South East Corner Bioregions” rather than “Sydney freshwater wetlands of the Sydney Basin bioregion”. This is due largely to the fact that the Sydney freshwater wetlands only occurs within the Sydney Basin Bioregion whereas the study area is within the NSW North Coast Bioregion. ERM (2005a; 2005b) did not identify any other EEC’s however sections of the study area mapped as “swamp forest” or “Swamp Mahogany Paperbark Forest” is representative of “swamp sclerophyll forest on coastal floodplains of the NSW North Coast, Sydney Basin and South East Corner Bioregions”.

2.0 SITE DESCRIPTION

The study area is an irregular shaped parcel of land which is approximately 20 hectares in area. It is bounded by existing residential development to the east, Port Stephens Drive and Horizons Golf Course to the south, Old Soldiers Point Road and estuarine wetlands of Cromartys Bay to the west and sporting facilities to the north (Figure 1). The study area is zoned residential 2(a) in Port Stephens Local Environmental Plan (2000).

The study area currently supports native vegetation. The lower lying areas are characterised by swamp forest dominated by *Melaleuca quinquenervia* and *Eucalyptus robusta* while the higher areas are vegetated by open forest dominated by *Eucalyptus pilularis*, *Angophora costata* and *Corymbia gummifera*.

Murphy (1995) has mapped the study area as the Shoal Bay soil landscape unit. Soils within this landscape are characterised by well-drained Pleistocene Aeolian sandsheets to rolling very low dunes supporting *E. pilularis* (Blackbutt) and *A. costata* (Smooth-barked Apple) with *Banksia serrata* (Old Man Banksia) understorey.

3.0 PROPOSED DEVELOPMENT

The proposal is to subdivide the study area into 97 residential lots with associate services and infrastructure (Figure 2). A wildlife corridor is proposed along the western side of the study area varying in width from 90 metres to 120 metres. Within the corridor a 10 metre wide strip adjacent to the development area would be managed as Outer Protection Area for bushfire hazard management (refer to ABPP 2006).

4.0 METHODS

The main components of the ecological assessment include a desktop study and field survey. The desktop study collates all available information relevant to the study area and surrounding areas to determine issues relating to threatened species and endangered ecological communities. It also provides a local and regional perspective of the environmental issues that may affect the project.

The field surveys are undertaken to describe the ecological characteristics of the study area and to determine the presence and/or likelihood of occurrence of threatened species.

4.1 Desktop Studies

The following database and literature review(s) were undertaken;

- Review of the Atlas of NSW Wildlife (DEC 2006) within a 10 kilometre radius surrounding the study area for threatened flora and fauna listed pursuant to the TSC Act;
- Department of Environment and Heritage (DEH 2005) Protected Matters Search tool within a 10 kilometre radius surrounding the study area for threatened and migratory species listed pursuant to the EPBC Act;
- Review of vegetation mapping prepared as part of the Lower Hunter and Central Coast Regional Environmental Management Strategy (LHCCREMS) (House 2003) within a 1 kilometre radius of the study area;
- Relevant local, state and federal legislation and threatened species literature; and
- Previous consultancy reports relevant to the study area (Conacher Travers 1998; ERM 2005a; 2005b).

4.2 Field Surveys

Field surveys were designed to satisfy the LHCCREMS Flora and Fauna Guidelines LHCCREMS (Murray *et al.* 2002) and the Port Stephens CKPoM (PSC 2001).

Field surveys were conducted between 11 and 14 September 2006 by two ecologists.

4.2.1 Flora

Flora surveys were conducted on 12 and 13 September 2006 by 2 ecologists. Surveys consisted of Random Meander searches of the entire survey area following Cropper (1993) and Community Composition analysis within 9, 20 metre x 20 metre quadrats (Appendix 1; Figure 3).

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NOTE: All features are approximate only and subject to detailed survey.

LEGEND

Study Area

FIGURE 2: Proposed Development

PROJECT: Salamander Waters

CLIENT: Port Stephens Council



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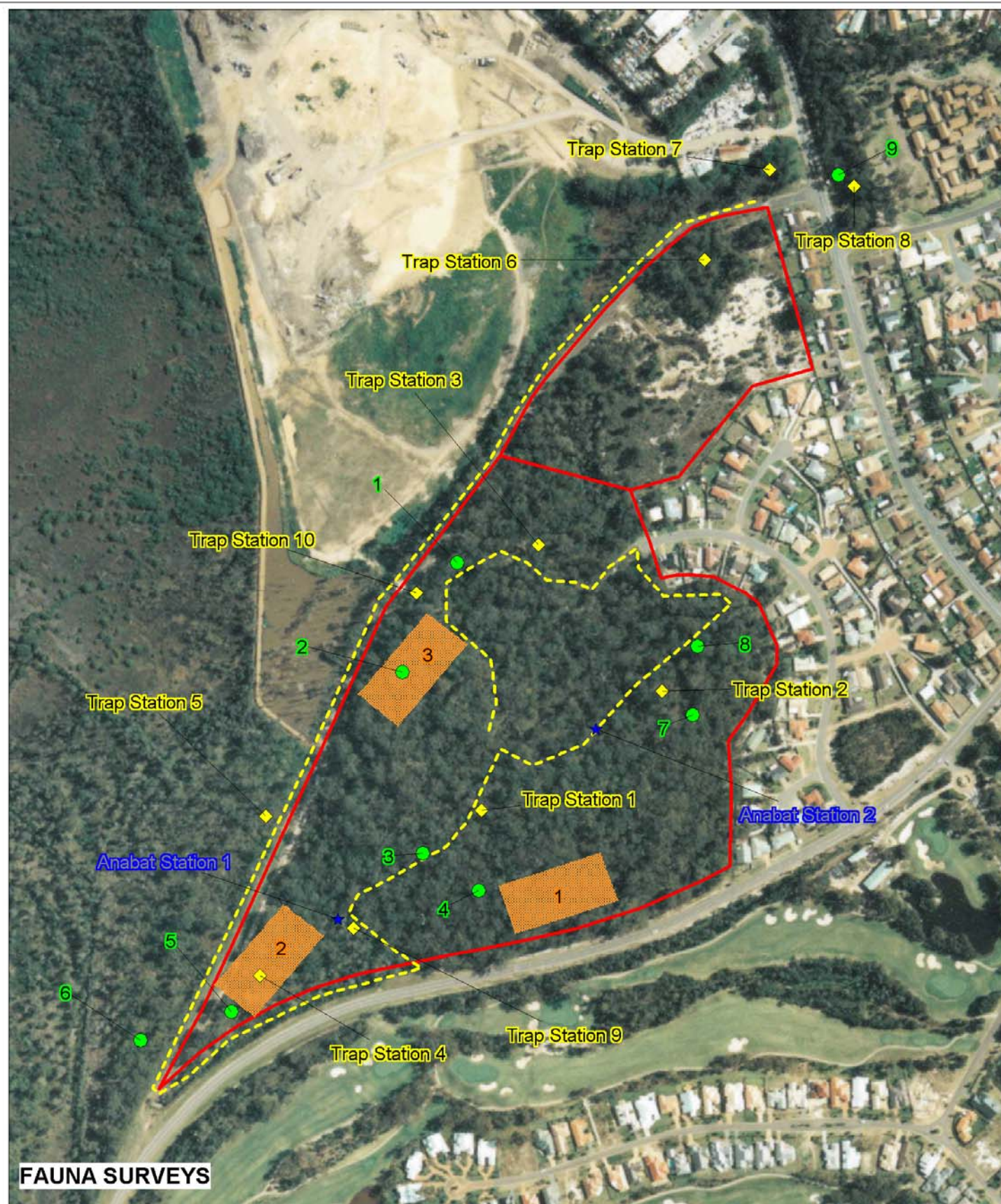
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FAUNA SURVEYS



FLORA SURVEYS

LEGEND

Study Area

Fauna Surveys

Anabat Station

Trap Station

Koala Spot Survey

Habitat Quadrat

Spotlight/Anabat Transect

Flora Surveys

Flora Quadrat

Random Meander

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FIGURE 3: Field Surveys

PROJECT: Salamander Waters

CLIENT: Port Stephens Council