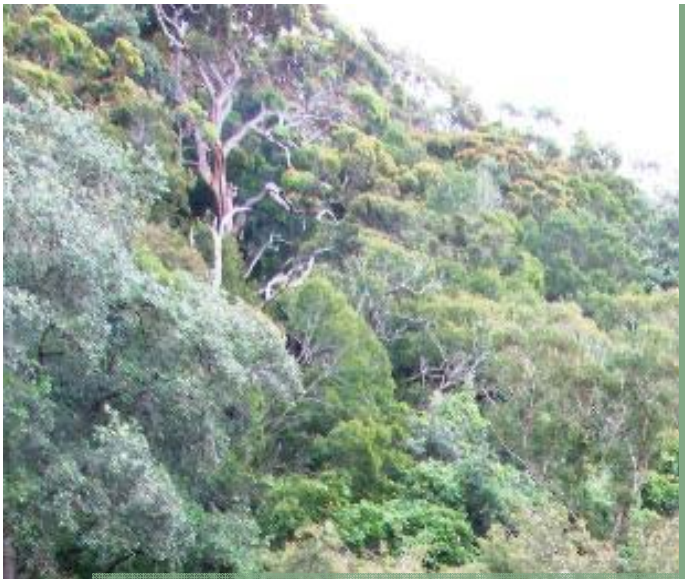

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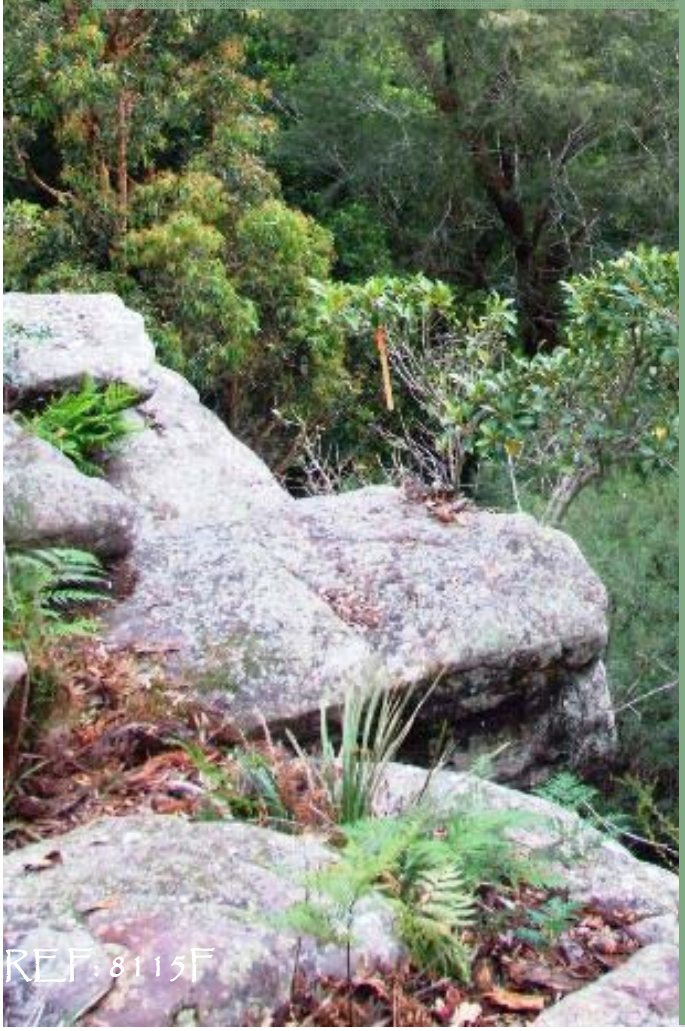
Flora and Fauna Assessment



ELANORA CONFERENCE CENTRE

ELANORA HEIGHTS

APRIL 2009

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FLORA AND FAUNA ASSESSMENT

ELANORA CONFERENCE CENTRE, ELANORA HEIGHTS

APRIL 2009

Report Authors:	Michael Sheather-Reid, Lindsay Holmes, Corey Mead & John Travers
Checked by:	
Date:	Monday, 20 April 2009
File:	8115F

Disclaimer:

This report has been prepared to provide advice to the client on matters pertaining to the particular and specific development proposal as advised by the client and / or their authorised representatives. This report can be used by the client only for its intended purpose and for that purpose only. Should any other use of the advice be made by any person including the client then this firm advises that the advice should not be relied upon. The report and its attachments should be read as a whole and no individual part of the report or its attachments should be relied upon as meaning it reflects any advice by this firm.

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EXECUTIVE SUMMARY

Travers environmental have been engaged by *Don Fox Planning* on behalf of Pittwater Council to carry out a preliminary flora and fauna assessment for a proposed subdivision of Lot 62 DP 30255, Lot 70 DP 32253 and Lot 2 DP 1093237, Elanora Heights (hereafter referred to as the subject site).

This report aims to establish the potential ecological constraints and to provide integrated habitat protection and bushfire management advice (Schedule 1 – Fuel Management Plan). It is a preliminary assessment for subdivision purposes only and any assessment accompanying application for further development will need to take the form of a more detailed ecological report.

The proposal to undertake a land swap between lands owned by the *Elanora Conference Centre* and Pittwater Council will ultimately retain remnant bushland in 7(a) zoned lands and add to the conserved lands of the Warriewood-Ingleside Escarpment.

In respect of matters required to be considered under Section 5A of the *Environmental Planning & Assessment Act* reveals that;

- No threatened flora species were recorded
- No threatened fauna species were recorded; and
- No endangered ecological communities were recorded.

The 7 part test of significance undertaken has concluded that the proposed subdivision and rezoning will not have a significant impact on any species, populations or endangered ecological communities. Therefore there will be no requirement for a Species Impact Statement as potentially required by the *Environmental Planning & Assessment Act*.

In respect of matters required to be considered under the federal government legislation *Environment Protection and Biodiversity Conservation Act* (1999);

- No threatened flora species were recorded during a site inspection
- No threatened fauna species was recorded; and
- No endangered ecological communities were recorded.

In respect of matters relative to the *Fisheries Management Act 1994*, no suitable habitat for marine/aquatic species was observed within the subject site and as there are no matters requiring further consideration under this Act.

Fuel management works for the purposes of asset protection will impact a total of 0.54 ha of existing native vegetation consisting of 0.16 ha of Inner Protection Area and 0.38 ha of Outer Protection Area. This area is largely already a bushfire asset protection zone by virtue of the weed managed zones that are insitu. Thus the areas will require only minimal works to bring them inline with PBP 2006 for asset protection zones. Certain trees may require removal and these are noted on Schedule 1.

Expert advice will be required to enable the initial conversion of the weed managed areas and some quassi APZ areas to an acceptable APZ equivalent area. This should occur by way of a fuel management plan to be prepared for the site and then staff to be trained in that plan.

Report prepared by:

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Michael Sheather-Reid B. Nat. Res. (Hons.) – Senior Ecologist
Lindsay Holmes B. Sc. (Biology) – Botanist
Corey Mead B. App. Sc. (Coastal Management) – Fauna Ecologist

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PRELIMINARY FLORA AND FAUNA ASSESSMENT
ELANORA CONFERENCE CENTRE
ELANORA HEIGHTS

Travers environmental have been engaged by *Don Fox Planning* on behalf of Pittwater Council to carry out a preliminary flora and fauna assessment for a proposed subdivision of Lot 62 DP 30255, Lot 70 DP 32253 and Lot 2 DP 1093237, Elanora Heights (hereafter referred to as the subject site).

This report aims to establish the potential ecological constraints and to provide integrated habitat protection and bushfire management advice (Schedule 2 – Fuel Management Plan). It is a preliminary assessment for subdivision purposes only and any assessment accompanying application for further development will need to take the form of a more detailed ecological report.

1 – AIMS OF THE ASSESSMENT

The aims of the flora & fauna assessment are to:

- Carry out a preliminary botanical survey to describe the vegetation communities and their condition;
- Carry out a preliminary fauna habitat assessment to determine potential for threatened species and to describe the habitat values;
- Prepare a preliminary threatened flora and fauna impact assessment in association with surveys undertaken.

2 – INFORMATION COLLATION

A review of the relevant information pertinent to the subject site was undertaken prior to the initiation of field surveys as background to the study. Information sources reviewed include the following:

Client documents including:-

- Briefs from *Pittwater Council* and *Don Fox Planning*

Standard Technical Resources

- Aerial photographs (scale 1:25,000) and Topographical maps (scale 1:25,000)
- *Atlas of NSW Wildlife* (DECC, 2008) 1:100,000 scale map sheet
- The schedules of the *Threatened Species Conservation Act, 1995*
- The schedules of the *Fisheries Management Act, 1994*
- Lists of threatened species and communities in the *Environmental Protection and Biodiversity Act 1999*
- Rare or Threatened Australian Plants (ROTAP)

3 – SITE DESCRIPTION

The planning and cadastral details of the subject site are provided in Table 1.1 while Table 1.2 summarises the geographical characteristics of the site.

Table 1 - Site Details

Location	Lot 62 DP 30255, Lot 70 DP 32253 and Lot 2 DP 1093237, Elanora Heights
Description of Location	The Former Heydon Estate within the northern portion of the subject site has access off the eastern side of Ingleside Road. The access into the Conference Centre runs north off Wesley St.
Area	Approximately 35ha
Topographic Map	Mona Vale 1:25000
Grid Reference	340600E and 6270800N
Local Government Area	Pittwater
Existing Land Use	Forest and Conference Centre
Proposed Development	No new development – rezoning and subdivision application

Table 2 - Site Characteristics

Elevation	Approximately 5-100m AHD
Topography	Gentle slopes around the Conference Centre and steep slopes between 20-35 degrees on the Mullet Creek embankment with drop offs
Aspect	Various
Geology and Soils	There are a number of different soil types within the subject site. Lambert and Gymea soils make up part of the western and southern section, characterised by some sandstone outcropping on slight to moderate slopes. Watagan soils make up the creek line area and embankments on steeper topography, characterised by occasional sandstone boulders and benches with taller open forest with closed forest in some sheltered positions. The Warriewood soils are located on the eastern edge of the subject site or immediately east, almost on flat ground where soils are deep on high water tables. The Geology of the subject site is sandstone.
Catchment	Narrabeen Lakes
Drainage	Mullet Creek into Narrabeen Lakes to the Pacific Ocean
Vegetation	Generally an Open Forest structure tending to a higher shrub content adjacent to existing drainage lines.

The subject site has been affected by the following impacts:

Table 3 – Site Disturbance

Clearing	Parts of the southern portion of the subject site have been cleared for the Elanora Conference Centre for dwellings, recreational activities, asset protection and weeding.
Agriculture / Pastoral	Nil
Earthworks	Some cut and fill for roadworks.
Introduced Weeds	Moderate to high incursion along Mullet Creek, part of which is currently undergoing weed control operations. Bushland areas outside of riparian zone are generally low in weed abundance. There is a number of landscaping plants utilised within the grounds used by the Conference Centre.
Feral, Introduced or Domestic fauna	Native fauna within the subject site is likely to have been impacted upon by predation from European Red Fox (*Vulpes vulpes*), Cats (*Felis catus*) and Dogs (*Canis familiaris*) and competition by introduced rodents close to disturbed areas.

4 – PROPOSAL

The subdivision of the lots is to enable a land swap between council and the land owner (Uniting Church) of the Elanora Conference Centre. The proposed subdivision & rezoning will specifically involve:-

- Area 2 currently zoned 7a Environmental Protection to be rezoned to allow its use by the Uniting Church.
- Areas 1, 3 & 4 are to be rezoned from Special Uses 5(a) to 7(a) Environmental Protection. Areas 1, 3 & 4 will allow the conservation of environmentally sensitive bushland to the Warriewood – Ingleside escarpment
- Under the terms of the proposed land transfer agreement, Area 3 will be leased back to the Uniting Church (on a 99 year lease). There is the potential for some low impact outdoor activities to be established on Area 3.

The proposed subdivision will create separate lots for the parcel of land identified as Areas 1, 3 and 4. Area 2 is to be consolidated into the existing Elanora Conference Centre.

There are no new buildings proposed at this stage within the Elanora Conference Centre land.

5 – SURVEY EFFORT

Table 4 provides the flora and fauna survey effort undertaken for the subject site.

Table 4 –Survey Effort and Dates

Survey	Method	Dates
Vegetation Structure and Flora Habitat Assessment	Random Meander around escarpment edge towards Mullet Creek in the vicinity of the Elanora Conference Centre. The northern portion containing the former Heydon Estate was not surveyed as there would be no change to the ecology after the proposal has taken place.	26/11/08
Fauna Habitat	Habitat assessment by random meander around escarpment edge towards Mullet Creek in the vicinity of the Elanora Conference Centre, including GPS survey of potentially affected hollow bearing trees within the asset protection zone.	10/12/08

6 – VEGETATION COMMUNITIES

The vegetation communities have been derived from the Pittwater Council vegetation mapping on the Council's website. Three (3) vegetation types cover the subject site:

- Sandstone Crests;
- Shale Slopes; and
- Lowlands (within Council Lands north-east of the Uniting Church lands).

Sandstone Crests occupy much of the western portion of the subject site at the higher elevations. Shale Slopes occupy the central portion and part of the eastern portion on low-mid slopes.

Due to the nature of the proposal, it was deemed unnecessary to undertaken an intensive flora and fauna survey of the site. However, a number of common flora species were recorded along the perimeter of the asset protection zone of the Elanora Conference Centre towards Mullet Creek. Common species include the following:-

Trees;
Angophora costata, Allocasuarina littoralis, Allocasuarina torulosa, Syncarpia glomulifera, Acacia elata, Eucalyptus piperita, Eucalyptus oblonga, Exocarpus cuppressiformis, Eucalyptus punctata, Erythrina X sykesii, Glochidion ferdinandi, Elaeocarpus reticulatus, Pittosporum undulatum, Ficus sp., Tristaniopsis laurina* and *Banksia serrata.*

Shrubs;
Dodonaea triquetra, Xanthorhhoea arborea, Lantana camara, Cyathea cooperi, Leionema dentatum, Leptospermum polygalifolium, Acacia ulicifolia, Acacia oxycedrus, Eriostemon australasius, Allocasuarina distylla* and *Acacia longifolia.*

Groundcovers / Vines;
Lomandra longifolia, Pteridium esculentum, Pimelea linifolia subsp. *linifolia, Lepidosperma laterale, Entolasia marginata, Entolasia stricta, Microlaena stipoides, Asplenium australasicum, Calochlaena dubia,* and *Imperata cylindrica.*

* indicates weedy or exotic species

7 – ENDANGERED ECOLOGICAL COMMUNITIES

A desktop analysis was undertaken to determine if Duffys Forest has the potential to occur on the subject site.

The nearest remnant of Duffys Forest mapped by *Smith and Smith (2000)* was located some 2km to the west north-west of the subject site in the vicinity of the Baha'i Temple along Mona Vale Road. This sub category of Duffys Forest (EEC) vegetation was described as Silvertop Ash – Brown Stringybark Forest. Given that there was no dominance of Silvertop Ash or Brown Stringybark within the plateau or upper slope areas surveyed, there is no site evidence to suggest that this EEC occurs on the subject site.

8 – FAUNA HABITAT

The fauna habitats present throughout the site include:

- Vegetated areas of forest
- Nectar producing tree species, principally *Eucalyptus, Corymbia, Acacia* and *Banksia*
- Sparse to dense shrublayers
- Sparse to moderate density of ground cover
- Large, medium and small hollows of varying quality
- Fallen logs, hollow sections and branches
- Loose soil suitable for foraging
- Perennial creek with moderate to dense vegetation along the margins
- Sparse to dense litter layers
- Exfoliated bark on trunks and piles at the base of smooth-barked *Eucalyptus* species
- Artificial debris & refuse

For the purpose of imposing a bushfire asset protection zone, a brief fauna habitat assessment was undertaken around the northern perimeter of the *Elanora Conference Centre* to assess the presence of hollow-bearing trees. The hollow-bearing trees were surveyed using *Trimble GPS* to ensure accuracy of location. An preliminary assessment of the hollow bearing tree characteristics within the fuel management zone are shown in Table 5. HT0009 had evidence of white wash and several other trees have evidence of fauna usage. These hollow-bearing trees should be retained post implementation of recommended asset protection zones.

Table 5 – Hollow-bearing Tree Characteristics

Tree	Scientific Name	Common Name	DBH (cm)	Spread (m)	Height (m)	Health (%)	Additional Comments	<5cm	5-10cm	10-15cm	15-20cm	20-25cm	25-30cm	30+ cm
HT0001	Euc. resinifera	Red Mahogany	60	12	16	70	trunk base, all good quality hollows, rubble pile at base		1		1			
HT0002	Ang. costata	Smooth-barked Apple	65	16	17	70	good quality hollows, scratches			1	1			
HT0003	stag	stag	80	5	8	0	termite nest hollowed at base	1				1		
HT0004	stag	stag	50/50	11	12	0		1						
HT0005	Ang. costata	Smooth-barked Apple	140	17	20	70	good 15 – 20cm hollows, scratches, bees			2	2	1	1	
HT0006	Ang. costata	Smooth-barked Apple	35/35/10	6	16	65				1				
HT0007	Ang. costata	Smooth-barked Apple	85	15	22	60		1		2	2			
HT0008	Ang. costata	Smooth-barked Apple	50	10	12	65		1	1	1				
HT0009	Ang. costata	Smooth-barked Apple	140	21	22	70	whitewash			1		1		2
HT0010	Euc. resinifera	Red Mahogany	70	12	19	20		2	3					
HT0011	Ang. costata	Smooth-barked Apple	60	11	18	65		2	1					
HT0012	stag	stag	65	6	9	0			1	1				1
HT0013	Euc. punctata	Grey Gum	90	14	16	65	base hollow, numerous scratches, regular use tree							1
HT0014	Cory. citriodora	Lemon-scented	45	12	18	90	numerous scratches -							

Table 5 – Hollow-bearing Tree Characteristics

Tree	Scientific Name	Common Name	DBH (cm)	Spread (m)	Height (m)	Health (%)	Additional Comments	<5cm	5-10cm	10-15cm	15-20cm	20-25cm	25-30cm	30+ cm
		Gum					regular use tree							
HT0015	Cory. citriodora	Lemon-scented Gum	65	13	20	90	numerous scratches							
HT0016	Euc. punctata	Grey Gum	40	9	17	60	scratches		1					

HT0014 and HT0015 were not hollow-bearing trees but were singled out due to prominent scratch marks indicating fauna usage.

9 – THREATENED FLORA AND FAUNA

A search of the Atlas of NSW Wildlife (DECC 2008 for flora & 2009 for fauna) and the EPBC Act Protected Matters Search Tool was undertaken to identify records of threatened flora and fauna species located within 10km of the subject site. This enabled the preparation of a list of threatened flora and fauna species that could possibly occur within the habitats found within the subject site.

Tables 6 and 7 below provides details on these threatened flora and fauna species as listed in Schedules 1 and 2 of the *Threatened Species Conservation Act* (1995) and in the *Environment Protection and Biodiversity Conservation Act* (1999). Tables 6 and 7 also provide an assessment of species habitat likely to occur within the subject site.

Table 6 - Threatened Flora Habitat Assessment

Scientific name	Growth Form and Habitat Requirements	Conservation Status	Comments	TSC Act	EPBC Act
Acacia bynoeana DECC	Erect or spreading shrub to 0.3 m high growing in heath and dry sclerophyll open forest on sandy soils. Often associated with disturbed areas such as roadsides. Distribution limits N-Newcastle S-Berrima.	Blue Mountains NP, Royal NP, Castlereagh NR, Agnes Banks NR, Lake Macquarie SRA, Dharawal NR, Marramarra NP, Parr SRA	One record within 10km of the subject site and from 1911. No potential habitat present. Not recorded during survey.	E1	V
Caladenia tessellata EPBC	Terrestrial orchid. Clay-loam or sandy soils. Distribution limits N-Swansea S- south of Eden.	Munmorah SRA, Popran NP, Wyrrabalong NP	No potential habitat. Not recorded during survey.	E1	V
Chamaesyce psammogeton DECC	Prostrate herb. Coastal dunes. Distribution limits N- Tweed Heads S-Jervis Bay	Wamberal Lagoon NR Myall Lakes NP Booti Booti NP	No potential habitat present. Not recorded during survey.	E1	-
Cryptostylis hunteriana DECC EPBC	Saprophytic orchid. Grows in swamp heath on sandy soils. Distribution limits N-Gibraltar Range S- south of Eden.	Gibraltar Range NP, Ku-ring-gai Chase NP, Ben Boyd NP	No potential habitat present. Not recorded during survey.	V	V

Table 6 - Threatened Flora Habitat Assessment

Scientific name	Growth Form and Habitat Requirements	Conservation Status	Comments	TSC Act	EPBC Act
Diuris bracteata DECC	A terrestrial donkey orchid flowering in September. Grows in dry sclerophyll woodland. This species was considered extinct until specimens were recorded again in 1998. Distribution limits N – Wyong S – Sydney.	Not currently known from any conservation reserves.	No potential habitat present. Not recorded during survey.	E1	Ext.
Epacris purpurascens var. purpurascens DECC	Erect shrub to 1.5m high growing in sclerophyll forest and scrub and near creeks and swamps on Sandstone. Distribution limits N- Gosford S- Blue Mountains.	Ku-ring-gai Chase NP Muogamarra NR Brisbane Water NP Berowra Valley RP Bents Basin SRA	Marginal habitat present. Habitat reduced because of dense pockets of weedy understorey and steepness. Not recorded during survey.	V	-
Eucalyptus camfieldii DECC EPBC	Stringybark to 10 m high. Grows on coastal shrub heath and woodlands on sandy soils derived from alluviums and Hawkesbury sandstone. Distribution limits N - Norah Head S - Royal NP.	Brisbane Water NP, Ku-ring-gai Chase NP, Royal NP, Sydney Harbour NP, Awabakal NR, Popran NP, Berowra Valley RP	No potential habitat present. Not recorded during survey.	V	V
Eucalyptus nicholii DECC	A medium-sized tree that grows in dry grassy woodland, on shallow and infertile soils, mainly on granite. Confined to the New England Tablelands. Distributed between Tenterfield and Nundle	Not currently known from conservation reserves.	No potential habitat present. Not recorded during survey.	V	V
Eucalyptus scoparia DECC	Smooth-barked tree only known from vicinity of Bald Rock.	Bald Rock NP	No potential habitat present. Not recorded during survey.	E1	V
Genoplesium baueri DECC	A terrestrial orchid that grows in sparse sclerophyll forest and moss gardens over sandstone. Distribution limits N – Hunter Valley S - Nowra	Not currently known from conservation reserves.	No potential habitat present. Not recorded during survey.	E1	-

Table 6 - Threatened Flora Habitat Assessment

Scientific name	Growth Form and Habitat Requirements	Conservation Status	Comments	TSC Act	EPBC Act
Grevillea caleyi DECC EPBC	Shrub mostly 1-3 metres high. Grows in laterite. Distribution limits Terry Hills-Belrose area.	Garigal NP, Ku-ring-gai Chase NP	Marginal habitat present on western margin of subject site. Not recorded during survey.	E1	E
Haloragodendron lucasii EPBC	Straggling shrub to 1.5 m high. Grows in open forest on sheltered slopes near creeks. Distribution limits Ku-ring-gai Plateau & Mt Wilson	Wollemi NP	Not recorded within 10km of the subject site. No potential habitat present. Not recorded during survey.	E1	E
Kunzea rupestris DECC EPBC	Shrub to 1.5 m high. Grows in cracks and fissures on Hawkesbury sandstone rock platforms. Distribution limits N - Maroota S - Glenorie.	Ku-ring-gai Chase NP, Marramarra NP	Rock platforms do not contain very heath-like vegetation. No potential habitat present. Not recorded during survey.	V	V
Leptospermum deanei DECC EPBC	Shrub to 5 m high. Grows on forested slopes. Distribution limits Near watershed of Lane Cove River.	Garigal NP, Berowra Valley RP	No potential habitat present. Not recorded during survey.	V	V
Melaleuca deanei DECC EPBC	Shrub to 3 m high. Grows in heath on sandstone. Distribution limits N - Gosford S - Nowra.	Berowra Valley Regional Park, Brisbane Water NP, Ku-ring-gai Chase NP, Garigal NP, Lane Cove NP, Royal NP, Heathcote NP	No potential habitat present. Not recorded during survey.	V	V
Microtis angusii DECC EPBC	Terrestrial orchid which is known from two populations, Mona Vale and Sunny Corner.	Not recorded from any conservation reserve	No potential habitat present. Not recorded during survey.	E1	E
Persoonia hirsuta DECC	Erect to decumbent shrub. Grows in dry sclerophyll forest and woodland on Hawkesbury sandstone with infrequent fire histories. Distribution limits N - Glen Davis S - Hill Top.	Blue Mountains NP, Wollemi NP, Dharug NP, Ku-ring-gai Chase NP, Marramarra NP, Royal NP, Sydney Harbour NP	No potential habitat present. Not recorded during survey.	E1	E

Table 6 - Threatened Flora Habitat Assessment

Scientific name	Growth Form and Habitat Requirements	Conservation Status	Comments	TSC Act	EPBC Act
Pimelea curviflora var. curviflora DECC EPBC	Woody herb or sub-shrub to 0.2-1.2 m high. Grows on Hawkesbury sandstone near shale outcrops. Distribution Sydney.	Not currently known from conservation reserves.	No potential habitat present. Not recorded during survey.	V	V
Syzygium paniculatum DECC	Small tree. Subtropical and littoral rainforest on sandy soil. Distribution limits N - Forster S - Jervis Bay.	Booti Booti NP, Myall Lakes NP, Wamberal Lagoon NR, Wyrrabalong NP, Captain Cooks Landing Place HS, Jervis Bay NP, Munmorah SRA, Glenrock SRA	Marginal habitat present, not recorded during survey.	V	V
Tetratheca glandulosa DECC EPBC	Spreading shrub to 0.2 m high. Sandy or rocky heath or scrub. Distribution limits N - Mangrove Mountain S – Port Jackson.	Berowra Valley RP, Dharug NP, Garigal NP, Ku-ring-gai Chase NP, Popran NP, Parr SRA, Cattai NP, Brisbane Water NP, Yengo NP, Cattai NP, Marramarra NP, Muogamarra NR, Wollemi NP	Potential habitat present nearer western portion of site or closer to plateau areas. Not recorded during survey.	V	V

DECC	- Denotes species listed within 10km of the subject site on the Atlas of NSW Wildlife database
EPBC	- Denotes species listed within 10km of the subject site in the EPBC Act habitat search

Table 7 - Threatened Fauna Habitat Assessment

COMMON NAME *Scientific Name*	PREFERRED HABITAT	COMMENTS	TSC Act	EPBC Act
Giant Burrowing Frog *Heleioporus australiacus* DECC EPBC	Inhabits open forests and riparian forests along non-perennial streams, digging burrows into sandy creek banks. Distribution Limit- N-Near Singleton. S-South of Eden.	Sub-optimal habitat present. Not recorded during diurnal survey.	V	V
Green and Golden Bell Frog *Litoria aurea* DECC EPBC	Prefers the edges of permanent water, streams, swamps, creeks, lagoons, farm dams and ornamental ponds. Often found under debris. Distribution Limit - N-Byron Bay. S-South of Eden.	No potential habitat present.	E	V
Littlejohn's Tree Frog *Litoria littlejohnii* EPBC	Found in wet and dry sclerophyll forest associated with sandstone outcrops at altitudes 280-1000m on eastern slopes of Great Dividing Range. Prefers flowing rocky streams. Distribution Limit – N-Hunter River. S-Eden.	No potential habitat present.	V	V
Stuttering Frog *Mixophyes balbus* EPBC	Terrestrial inhabitant of rainforest and wet sclerophyll forests. Distribution Limit - N-Near Tenterfield. S-South of Bombala.	No potential habitat present.	E	V
Red-crowned Toadlet *Pseudophryne australis* DECC	Prefers sandstone areas, breeds in grass and debris beside non-perennial creeks or gutters. Individuals can also be found under logs and rocks in non breeding periods. Distribution Limit- N-Pokolbin S-Near Wollongong.	Potential habitat present. Not recorded during diurnal survey.	V	-
Broad-headed Snake *Hoplocephalus bungaroides* DECC EPBC	Sandstone outcrops, exfoliated rock slabs and tree hollows in coastal and near coastal areas. Distribution Limit - N-Mudgee Park. S-Nowra.	Potential habitat present. Not recorded during diurnal survey.	E	E
Rosenberg's Goanna *Varanus rosenbergi* DECC	Hawkesbury sandstone outcrop specialist. Inhabits woodlands, dry open forests and heathland sheltering in burrows, hollow logs, rock crevices and outcrops. Distribution Limit- N-Nr Broke S-Nowra Located in scattered patches near Sydney, Nowra and Goulburn.	Potential habitat present. Not recorded during diurnal survey.	V	-

Table 7 - Threatened Fauna Habitat Assessment

COMMON NAME *Scientific Name*	PREFERRED HABITAT	COMMENTS	TSC Act	EPBC Act
Osprey *Pandion haliaetus* DECC	Utilises waterbodies including coastal waters, inlets, lakes, estuaries and offshore islands with a dead tree for perching and feeding. Distribution Limit - N-Tweed Heads. S-South of Eden.	No potential habitat present.	V	-
Sanderling *Calidris alba* DECC	Frequents broad ocean beaches of firm sand 'where waves ebb and flow', often near river mouths, inlets, tidal mudflats, coastal lagoons. Distribution Limit - N-Tweed Heads. S-South of Eden.	No potential habitat present.	V	-
Great Knot *Calidris tenuirostris* DECC	Summer migrant to Australian coastal regions. Forages on tidal mudflats, and sandy ocean shores. Distribution N - Tweed Heads S - South of Eden.	No potential habitat present.	V	-
Kermadec Petrel *Pterodroma neglecta* EPBC	Breeds across the south Pacific and disperses throughout the warmer Pacific waters, occasionally visits the east coast of Australia.	No potential habitat present.	V	V
Black-browed Albatross *Diomedea melanophris* DECC EPBC	Inhabits the southern oceans and adjacent coastal areas. Distribution Limit - N-Tweed Heads. S-South of Eden.	No potential habitat present.	V	-
Gould's Petrel *Pterodroma leucoptera leucoptera* DECC EPBC	A migratory bird inhabiting coastal areas and tropical and subtropical oceans. Nests in shallow burrows, crevices between boulders and under tangles of fallen palm fronds. Distribution Limit - N-Tweed Heads. S-South of Eden.	No potential habitat present.	E	E
Flesh-footed Shearwater *Puffinus carneipes* DECC	A migratory bird that inhabits temperate and subtropical seas. Nests on level sites close to the sea. Distribution Limit - N-Tweed Heads. S-South of Eden.	No potential habitat present.	V	-
Little Tern *Sterna albifrons* DECC	An almost exclusively coastal species inhabiting open beaches, sheltered inlets, estuaries and occasionally lakes. Distribution Limit- N-North of Tweed Heads. S-South of Eden.	No potential habitat present.	E	-

Table 7 - Threatened Fauna Habitat Assessment

COMMON NAME *Scientific Name*	PREFERRED HABITAT	COMMENTS	TSC Act	EPBC Act
Sooty Tern *Sterna fuscata* DECC	An almost exclusively aerial species found along the coast and oceanic islands. Distribution Limit - N-Tweed Heads. S-South of Eden.	No potential habitat present.	V	-
Lesser Sand-plover *Charadrius mongolus* DECC	A migratory coastal species found along coastal beaches, mangroves and mudflats. Distribution Limit - N-Tweed Heads. S-South of Eden.	No potential habitat present.	V	-
Greater Sand-plover *Charadrius leschenaultia* DECC	An almost exclusively coastal species favouring extensive mudflats and marshes. Distribution Limit - N-Tweed Heads. S-South of Eden.	No potential habitat present.	V	-
Sooty Oystercatcher *Haematopus fuliginosus* DECC	Exclusively coastal in distribution foraging along rocky coastlines and estuaries. Distribution Limit- N-Tweed Heads S-South of Eden.	No potential habitat present.	V	-
Pied Oystercatcher *Haematopus longirostris* DECC	Inhabits coastal beaches and estuarine flats. Distribution Limit N-Tweed Heads S-South of Eden.	No potential habitat present.	V	-
Australasian Bittern *Botaurus poiciloptilus* DECC	Inhabits shallow freshwater or brackish wetlands with tall dense beds of reeds, sedges or rush species and swamp edges. Distribution Limit - N-North of Lismore. S- Eden.	No potential habitat present.	V	-
Black Bittern *Ixobrychus flavicollis* DECC	Freshwater & brackish streams & ponds. Distribution Limit - N-Tweed Heads. S-South of Eden.	No potential habitat present.	V	-
Painted Snipe *Rostratula benghalensis* EPBC	Most numerous within the Murray-Darling basin and inland Australia within marshes and freshwater wetlands with swampy vegetation. Distribution Limit- N-Tweed Heads S-South of Eden.	No potential habitat present.	V	-
Beach Stone-curlew *Esacus neglectus* DECC	Inhabits remote and secluded beaches, coral reefs and cays, mangrove fringes and estuarine mudflats. Distribution Limit - N-Tweed Heads. S-Shoalhaven River.	No potential habitat present.	E	-

Table 7 - Threatened Fauna Habitat Assessment

COMMON NAME ***Scientific Name***	PREFERRED HABITAT	COMMENTS	TSC Act	EPBC Act
Bush Stone-curlew *Burhinus grallarius* DECC	Utilises open forests and savannah woodlands, sometimes dune scrub and mangrove fringes. Distribution Limit- N-Border Ranges National Park S-Near Nowra.	No potential habitat present.	E	-
Wompoo Fruit-dove *Ptilinopus magnificus* DECC	Inhabits large undisturbed patches of lowland and adjacent highland rainforest and moist eucalypt forests where it feeds on fruit. Distribution Limit - N-Tweed Heads. S-Sydney.	No potential habitat present.	V	-
Superb Fruit-dove *Ptilinopus superbus* DECC	Rainforests, adjacent mangroves, eucalypt forests, scrubland with native fruits. Distribution Limit - N-Border Ranges National Park. S-Bateman's Bay.	No potential habitat present.	V	-
Glossy Black-Cockatoo *Calyptorhynchus lathami* DECC	Open forests with *Allocasuarina* species and hollows for nesting. Distribution Limit - N-Tweed Heads. S-South of Eden.	Potential habitat present. Not recorded during diurnal survey.	V	-
Gang-gang Cockatoo *Callocephalon fimbriatum* DECC	Prefers wetter forests and woodlands from sea level to > 2000m on Divide, timbered foothills and valleys, timbered watercourses, coastal scrubs, farmlands and suburban gardens. Distribution Limit – mid north coast of NSW to western Victoria.	Potential habitat present. Not recorded during surveys.	V	-
Swift Parrot *Lathamus discolour* DECC EPBC	Inhabits eucalypt forests and woodlands with winter flowering eucalypts. Distribution Limit - N-Border Ranges National Park. S-South of Eden.	Marginal habitat present. Not recorded during diurnal survey.	E	E
Turquoise Parrot *Neophema pulchella* DECC	Inhabits coastal scrubland, open forest and timbered grassland, especially ecotones between dry hardwood forests and grasslands. Distribution Limit - N-Near Tenterfield. S-South of Eden.	No potential habitat present.	V	-
Regent Honeyeater *Xanthomyza Phrygia* DECC EPBC	Found in temperate eucalypt woodland and open forest including forest edges, wooded farmland and urban areas with mature eucalypts. Distribution Limit - N-Urbanville. S-Eden.	Marginal habitat present. Not recorded during diurnal survey.	E	E

Table 7 - Threatened Fauna Habitat Assessment

COMMON NAME *Scientific Name*	PREFERRED HABITAT	COMMENTS	TSC Act	EPBC Act
Barking Owl *Ninox connivens* DECC	Inhabits principally woodlands but also open forests and partially cleared land and utilises hollows for nesting. Distribution Limits- N-Border Ranges National Park S-Eden	Potential habitat present. Not recorded during diurnal survey.	V	-
Powerful Owl *Ninox strenua* DECC	Forests containing mature trees for shelter or breeding & densely vegetated gullies for roosting. Distribution Limits - N-Border Ranges National Park. S-Eden	Potential habitat present. Not recorded during diurnal survey.	V	-
Masked Owl *Tyto novaehollandiae* DECC	Open forest & woodlands with cleared areas for hunting and hollow trees or dense vegetation for roosting. Distribution Limit - N-Border Ranges National Park. S-Eden	Potential habitat present. Not recorded during diurnal survey.	V	-
Black-chinned Honeyeater *Melithreptus gularis gularis* DECC	Found in woodlands containing box-ironbark associations and River Red Gums, also drier coastal woodlands of the Cumberland Plain and Hunter Richmond and Clarence. Distribution Limit. N – Cape York pen. Qld. S – Victor H. Mt Lofty Ra & Flinders Ra. SA	No potential habitat present.	V	-
Spotted-tailed Quoll *Dasyurus maculates* DECC EPBC	Dry and moist open forests containing rock caves, hollow logs or trees. Distribution Limit- N-Mt Warning National Park S-South of Eden.	Potential habitat present. Not recorded during diurnal survey.	V	V
Southern Brown Bandicoot *Isoodon obesulus* DECC EPBC	Utilises a range of habitats containing thick ground cover - open forest, woodland, heath, cleared land, urbanised areas and regenerating bushland. Distribution Limit - N-Kempsey. S-South of Eden.	Sub-optimal habitat present. Not recorded during diurnal survey.	E	E
Long-nosed Potoroo *Potorous tridactylus* EPBC	Coastal heath and dry and wet sclerophyll forests with a dense understorey. Distribution Limit - N-Mt Warning National Park. S-South of Eden.	Potential habitat present. Not previously recorded within 10km. Not recorded during diurnal survey.	V	V
Koala *Phascolarctos cinereus* DECC	Inhabits both wet & dry eucalypt forest on high nutrient soils containing preferred feed trees. Distribution Limit - N-Tweed Heads. S-South of Eden	Potential transient habitat present. Not recorded during diurnal survey.	V	-

Table 7 - Threatened Fauna Habitat Assessment

COMMON NAME ***Scientific Name***	**PREFERRED HABITAT**	**COMMENTS**	**TSC Act**	**EPBC Act**
Squirrel Glider *Petaurus norfolcensis* DECC	Mixed aged stands of eucalypt forest & woodlands including gum barked & high nectar producing species & hollow bearing trees. Distribution Limit - N- Tweed Heads S-Albury	Marginal habitat present. Not recorded during diurnal survey.	V	-
Eastern Pygmy Possum *Cercatetus nanus* DECC	Found in a variety of habitats from rainforest through open forest to heath. Feeds on insects but also gathers pollen from banksias, eucalypts and bottlebrushes. Nests in banksias and myrtaceous shrubs. Distribution Limit – N – Tweed Heads S - Eden	Potential habitat present. Not recorded during diurnal survey.	V	-
Grey-headed Flying-fox *Pteropus poliocephalus* DECC EPBC	Found in a variety of habitats including rainforest, mangroves, paperbark swamp, wet and dry open forest and cultivated areas. Forms camps commonly found in gullies and in vegetation with a dense canopy. Distribution Limit – N – Tweed Heads S - Eden	Potential foraging habitat present. Not recorded during diurnal survey.	V	V
Large-footed Myotis *Myotis adversus* DECC	Roosts in caves, mines, tunnels, buildings, tree hollows and under bridges. Forages over open water. Distribution limits - N - Border Ranges National Park, S - South of Eden.	Potential habitat present. Not recorded during diurnal survey.	V	-
Eastern Bentwing-bat *Miniopterus schreibersii oceansis* DECC	Prefers areas where there are caves, old mines, old buildings, stormwater drains & well timbered areas. Distribution Limit - N-Border Ranges National Park. S-South of Eden.	Potential foraging habitat present. Not recorded during diurnal survey.	V	-
Greater Broad-nosed Bat *Scoteanax rueppellii* DECC	Inhabits areas containing moist river & creek systems especially tree lined creeks. Distribution Limit - N-Border Ranges National Park. S-Pambula.	Marginal habitat present. Not recorded during diurnal survey.	V	-
Eastern Freetail-bat *Mormopterus norfolkensis* DECC	Inhabits open forests and woodlands foraging above the canopy and along the edge of forests. Roosts in tree hollows, under bark and buildings. Distribution Limit - N- Woodenbong. S-Pambula.	Marginal habitat present. Not recorded during diurnal survey.	V	-

Table 7 - Threatened Fauna Habitat Assessment

COMMON NAME *Scientific Name*	PREFERRED HABITAT	COMMENTS	TSC Act	EPBC Act
Large-eared Pied Bat *Chalinolobus dwyeri* EPBC	Warm-temperate to subtropical dry sclerophyll forest and woodland. Roosts in caves, tunnels and tree hollows in colonies of up to 30 animals. Distribution Limit - N-Border Ranges Nation Park. S-Wollongong.	Potential habitat present. Not recorded within 10km. Not recorded during diurnal survey.	V	V
Macquarie Perch *Macquaria australasica* EPBC	Occurs in south east Australia at moderate to high altitudes in rivers and reservoirs. Historical records show the species was widespread and abundant in the upper reaches of the Lachlan, Murrumbidgee and Murray Rivers and their tributaries. Allen (1989) states that introduced populations are present in Nepean River and water supply dams in the Sydney area. Occurs in lakes and flowing streams, usually in deep holes.	No potential habitat present. Not recorded during diurnal survey.	V	E
Australian Grayling *Prototroctes maraena* EPBC	Clear, moderate to fast flowing water in the upper reaches of rivers (sometimes to altitudes above 1000m). Typically found in gravel bottom pools. Often forming aggregations below barriers to upstream movement (eg weirs, waterfalls).	No potential habitat present. Not recorded during diurnal survey.	Part 2, Section 19 – Protected Fish	V

DECC	- Denotes species listed within 10km of the subject site on the Atlas of NSW Wildlife database
EPBC	- Denotes species listed within 10km of the subject site in the EPBC Act habitat search

10 – ASSET PROTECTION ZONES

Busfire asset protection zones are required to protect the existing built environment however the specifictaoons required by the RFS for a special fire protection purpose facility would require zone in excess of 80 metres on all qaspects of the existing buildings. It is the case that gfiven the ecological impact of removing mass biomass from an area and also given the likely environmental impacts from increased soil erosion and the like any tree removal or more than moderate vegetation removal would lean towards a significant impact on the escarpment landscape environmental qualities.

The bushfire advice eprovided by this firm under separate cover advised the following;

'The proposed asset protection zone (Schedule 1 – Fuel Management Plan) has been identified based on the extent of manageable slopes immediately adjacent to the existing buildings. In some instances slopes of greater than 18 degrees has been incorporated into fuel managed area if safe access was considered feasible for hand fuel reduction.

The slopes surrounding the existing buildings vary from between 0-15 degrees in the first instance and then 15–37 degrees in the second instance (apart from the south west where they are generally level). The slopes off Mullet creek range from 24-33 degrees. Many aspects contain several inaccessible cliff faces and ledges which are not practical to manage. Existing creeks also limit the extent of feasible asset protection zones in the south western aspects of the subdivision area.

The current asset protection boundary has been identified on the basis of a practical management edge which roughly equates to the area current managed by the Uniting Church. The asset protection however can be extended as on Outer Protection Area into proposed Area 2 providing an additional 20–30 metres fuel reduced area – see Schedule 1.

Existing vegetation has largely been managed to proposed asset protection zones and several attempts have been made by the Uniting Church to manage vegetation on steeper slopes. Further expansion of asset protection zones beyond that depicted in Schedule 1 would impact on visually significant vegetation, riparian buffers or potential create unstable soil / rock conditions.

The proposed asset protection zones on the attached plan (Schedule 1) identifies a feasible fuel management area which can be practically implemented. At a minimum understorey management will be required to remove or modify remnant clumps of native vegetation between the surrounding escarpment and the current buildings. It is unlikely that trees will be able to be removed however it is likely that tree limbs may be removed to assist bushfire protection.

It is noted however that due to the close proximity of unmanageable slopes, the removal of certain trees may not significantly enhance protection of the existing buildings due to the severity of the potential bushfire threat. Increased construction standards should be adopted to reduce the level of bushfire risk and radiant heat exposure as a primary response to the sites exposed conditions.

Pittwater Council have also requested the retention of ecologically significant trees, however the retention of any trees between the threat and the proposed buildings are a potential flame pathway and retention should be based on a site specific performance based assessment that considers bushfire, geotechnical, visual and ecological issues.

Thus it would be better for a bushfire specialist to review each tree individually and then apply that assessment in line with a properly considered bushfire 'fuel management plan' and 'evacuation plan' for the site.

As Council are aware their obligations under the Section 63 of the Rural Fires Act require them to manage their lands to prevent the build up of

> combustible fuel. It is recommended that a joint approach be taken in regards to fuel management between Pittwater Council and the Church to ensure the protection of people within the church and residents within the adjoining lands to the west and south. Councils Bushland Management Plan and any other relevant documents for the Warriewood–Ingleside escarpment may require upgrading including the addition of any new land and proposed hazard reduction works over this land.'

The above opinion reflects the sites limitations and the non compliance with PBP 2006 for the required APZ distances onsite. For the most part APZ's extend over existing cleared areas and Schedule 1 attached depicts the edge of the currently maintained area and the additional area that should be managed to reduce fuel loads based upon the topography at the very least.

In summary, the proposed fuel management plan depicts areas where understorey can be managed and further consideration could be given to potential tree removal or limb removal if building protection measures are not undertaken to protect the existing facilities.

The intention for fuel management will be to retain hollow all bearing trees and trees of significance to the threatened species Glossy Black-Cockatoo. The southern most top of the riparian zone to the western aspect of the existing accommodation buildings will potentially be affected by fuel management works – see Schedule 1 . Works within this area as noted in the fuel management plan will need to be in accordance with the advice of a bushfire / ecological specialist.

Additional vegetation management would need to be implemented to comply with the recommended fuel management works. However vegetation management works would be limited due to the steep slopes. Consequently the proposed fuel management works are unlikely to be significant.

Fuel management works for the purposes of bushfire asset protection will impact a total of 0.54 ha of existing vegetation consisting of 0.16 ha of Inner Protection Area (green shading) and 0.38 ha of Outer Protection Area (blue shading) – see Schedule 1 attached.

Therefore should fuel management works be undertaken it is likely that only minor additional loss of vegetation will occur. It is the case that topographical constraints limit fuel management to the natural escarpment edge as defined by the outer edge of the blue and green shading as depicted on Schedule 1. External to this edge the steep slopes deny fuel management capability in any practical form.

It is the case that the eastern fringe of the facility has significant weed management occurring and this acts as a bushfire fuel managed area by default. For this to become an APZ zone only the tidying up of the existing works would be necessary in the form of the removal of the residue weed growth and maybe some shrub (size) reduction.

In terms of the northern and western fringes there would also require limited fuel management and subsequent ecological impact. The existing rock strata limits substantial tree growth in this zone and the existing walking trails create fuel managed areas already. Impacts would be restricted to approximately 50% shrub removal. This is displayed over the blue a zone in Schedule 1.

Specific expert advice is to be sought in undertaking fuel management to ensure adequate vegetation removal is undertaken to meet the vegetation management requirements of asset protection zones whilst also protecting key hollow dependent fauna habitat.

It is not expected that any of the identified hollow trees would be affected by fuel management works.

11 – SEVEN PART TEST OF SIGNIFICANCE (SECTION 5A EPA ACT 1979)

Council is required to consider the impact upon threatened species, populations and or endangered ecological communities from any development or activity via the process of a 7 part test of significance. The significance of the assessment is then used to determine the need for a more detailed Species Impact Statement (SIS).

The following 7-part test of significance relies on existing data from preliminary surveys and threatened species habitat assessment only.

The '7 part test of significance' is as follows.

a) In the case of a threatened species, whether the action proposed is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction

Preliminary habitat investigations of the subject site have resulted in the identification of potential habitat for a variety of threatened species. An assessment of these species is as follows:

Threatened Flora

- *Epacris purpurascens* var. *purpurascens*
- *Grevillea caleyi*
- *Syzygium paniculatum*
- *Tetratheca glandulosa*

Endangered Ecological Communities and Populations

- Koala in the Pittwater LGA
- Squirrel Glider on Barrenjoey Peninsula

Threatened Fauna

- Giant Burrowing Frog
- Red-crowned Toadlet
- Broad-headed Snake
- Rosenberg's Goanna
- Glossy Black-Cockatoo
- Gang-gang Cockatoo
- Swift Parrot
- Powerful Owl
- Masked Owl
- Barking Owl
- Regent Honeyeater
- Spotted-tailed Quoll
- Koala
- Squirrel Glider
- Eastern Pigmy Possum
- Southern Brown Bandicoot
- Long-nosed Potoroo
- Grey-headed Flying-fox
- Large-footed Myotis
- Large-eared Pied Bat
- Eastern Free-tail Bat
- Greater Broad-nosed Bat
- Eastern Bentwing-bat

Whilst the on site assessment was brief, an in depth survey is not warranted for the subject site based on the current proposal. The land swap between Council and the Uniting Church (NSW) Property Trust will not see any reduction to the vegetation mass within the subject

site nor the degradation of remnant vegetation. As such, the proposal should have no adverse effect on the life cycle of these species such that a viable local population is likely to be placed at risk of extinction.

b) In the case of an endangered population, whether the action proposed is likely to have an adverse effect on the life cycle of the species that constitutes the endangered population such that a viable local population of the species is likely to be placed at risk of extinction

There are two (2) endangered fauna populations within the Pittwater LGA, they are:

- Koala in the Pittwater LGA
- Squirrel Glider on Barrenjoey Peninsula

The subject site falls within the recorded distributional range of the endangered Koala population in Pittwater LGA. The nearest record from this population is 900m to the east recorded in 1949. The most recent record from this population within 5km is 4.7km to the north-east in 1982. Only one record from this population exists within 10km since 2000, which was 7km to the north-east in 2006. From this it is considered that this population is not utilising habitat within close proximity to the subject site in recent times.

The subject site contains one Koala feed tree Grey Gum (*Eucalyptus punctata)* as listed on Schedule 2 of State Environmental Planning Policy No. 44 - Koala Habitat Protection. These trees comprised of less than 15 % of the total number of trees observed within 50m of existing buildings and therefore the subject site is not considered to comprise Potential Koala Habitat as defined under SEPP 44.

Furthermore, no primary food tree species, one secondary food tree species (Grey Gum) and no supplementary food trees as listed in Appendix 1 of the Recovery Plan for the Koala (*Phascolarctos cinereus*) were recorded present. Secondary tree species may support Koala habitat at a lower carrying capacity if well represented. Grey Gums are not well represented within the subject site area enough to support habitat for a Koala population.

Therefore the minimal removal of trees present on site will not disrupt any suitable Koala habitat.

The subject site does not fall within the identified distribution boundaries of the Squirrel Glider endangered population on Barrenjoey Peninsula.

There are no flora populations located within the Pittwater LGA.

Therefore it is considered that the action proposed is not likely to have an adverse effect on the life cycle of these species that constitute the endangered populations such that a viable local population of these species is likely to be placed at risk of extinction.

c) In the case of a critically endangered or endangered ecological community, whether the action proposed:

i. Is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or

There is no likelihood of any endangered ecological community being present within the subject site, therefore not applicable.

ii. Is likely to substantially and adversely modify the composition such that its local occurrence is likely to be placed at risk of extinction,

Not applicable.

d) In relation to the habitat of threatened species, populations or ecological community:

i. The extent to which habitat is likely to be removed or modified as a result of the action proposed, and

It is considered that the habitat attributes of the subject site provide known or potential habitat for *Epacris purpurascens* var. *purpurascens, Grevillea caleyi, Syzygium paniculatum, Tetratheca glandulosa,* Giant Burrowing Frog, Red-crowned Toadlet, Broad-headed Snake, Rosenberg's Goanna, Glossy Black-Cockatoo, Gang-gang Cockatoo, Swift Parrot, Powerful Owl, Masked Owl, Barking Owl, Regent Honeyeater, Spotted-tailed Quoll, Koala, Squirrel Glider, Eastern Pigmy Possum, Southern Brown Bandicoot, Long-nosed Potoroo, Grey-headed Flying-fox, Large-footed Myotis, Large-eared Pied Bat, Eastern Free-tail Bat, Greater Broad-nosed Bat and Eastern Bentwing-bat

Due to the nature of the proposal, there will be no loss of any good quality habitat or vegetation within the subject site. The existing disturbed areas surrounding the Elanora Conference Centre will continue to be maintained for asset protection purposes.

ii. Whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed action, and

The proposal will not fragment or isolate currently connected areas of habitat because there will be no cumulative loss of habitat or vegetation within the subject site.

iii. The importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species, population or ecological community in the locality

Not applicable as no habitat or vegetation will be removed.

e) Whether the action proposed is likely to have an adverse effect on critical habitat (either directly or indirectly)

The site has not been identified as critical habitat within the provisions of the TSC Act (1995). Therefore this matter does not require any further consideration at this time.

f) Whether the action proposed is consistent with the objectives or actions of a recovery plan or threat abatement plan

Draft recovery plans have been prepared for the following threatened species with potential habitat within the subject site:

- Barking Owl *(Ninox connivens).* (DECC, 2003)
- Koala *(Phascolarctos cinereus) (*DECC, 2003)

Approved recovery plans have been prepared for the following threatened species with potential habitat within the subject site:

- *Grevillea caleyi* (DECC 2004)

- Large Forest Owls (Powerful Owl (*Ninox strenua*), Sooty Owl (*Tyto tenebricosa*) and Masked Owl (*Tyto novaehollandiae*), (DECC 2006).
- Southern Brown Bandicoot (*Isoodon obesulus*), (DECC 2006)

It is considered that the proposed development is generally consistent with the objectives or actions of the above mentioned draft and approved recovery plans as the proposal is non invasive.

g) Whether the action proposed constitutes or is part of a key threatening process or is likely to result in the operation of, or increase the impact of, a key threatening process.

Given the nature of the proposal, it is very unlikely that there will be any cumulative impact upon any key threatening process as listed under Schedule 3 of the *TSC* Act (1995).

11 – CONCLUSIONS

The proposal to undertake a land swap between lands owned by the *Elanora Conference Centre* and Pittwater Council will ultimately retain remnant bushland in 7(a) zoned lands and add to the conserved lands of the Warriewood-Ingleside Escarpment.

In respect of matters required to be considered under Section 5A of the *Environmental Planning & Assessment Act* reveals that;

- No threatened flora species were recorded
- No threatened fauna species were recorded; and
- No endangered ecological communities were recorded.

The 7 part test of significance undertaken has concluded that the proposed subdivision and rezoning will not have a significant impact on any species, populations or endangered ecological communities. Therefore there will be no requirement for a Species Impact Statement as potentially required by the *Environmental Planning & Assessment Act*.

In respect of matters required to be considered under the federal government legislation *Environment Protection and Biodiversity Conservation Act* (1999);

- No threatened flora species were recorded during a site inspection
- No threatened fauna species was recorded; and
- No endangered ecological communities were recorded.

In respect of matters relative to the *Fisheries Management Act 1994*, no suitable habitat for marine/aquatic species was observed within the subject site and as there are no matters requiring further consideration under this Act.

Fuel management works for the purposes of asset protection will impact a total of 0.54 ha of existing native vegetation consisting of 0.16 ha of Inner Protection Area and 0.38 ha of Outer Protection Area. This area is largely already a bushfire asset protection zone by virtue of the weed managed zones that are insitu. Thus the areas will require only minimal works to bring them inline with PBP 2006 for asset protection zones. Certain trees may require removal and these are noted on Schedule 1.

Expert advice will be required to enable the initial conversion of the weed managed areas and some quassi APZ areas to an acceptable APZ equivalent area. This should occur by

way of a fuel management plan to be prepared for the site and then staff to be trained in that plan.

Licences – Individual staff members are licensed under Clause 20 of the *National Parks and Wildlife (Land Management) Regulation 1995* and Section 120 & 131 of the *National Parks and Wildlife Act, 1974* to conduct flora and fauna surveys within service and non-service areas. NPWS Scientific Licence Numbers: S10359 & S10618. The staff of *Travers environmental Pty Ltd* are licensed under an Animal Research Authority issued by the Department of Agriculture. This authority allows *Travers environmental* staff to conduct various fauna surveys of native and introduced fauna for the purposes of environmental consulting throughout New South Wales.