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PRELIMINARY ECOLOGICAL SITE ASSESSMENT

LOCATION

Lot 517 DP 729286, Tweed Coast Road, Cabarita

PREPARED FOR

*Tweed Coast Holiday Parks Reserve Trust
c/o
Darryl Anderson Consulting Pty Ltd*

DATE

19/04/2011

REF NO

669



**Boyds Bay
Environmental Services**

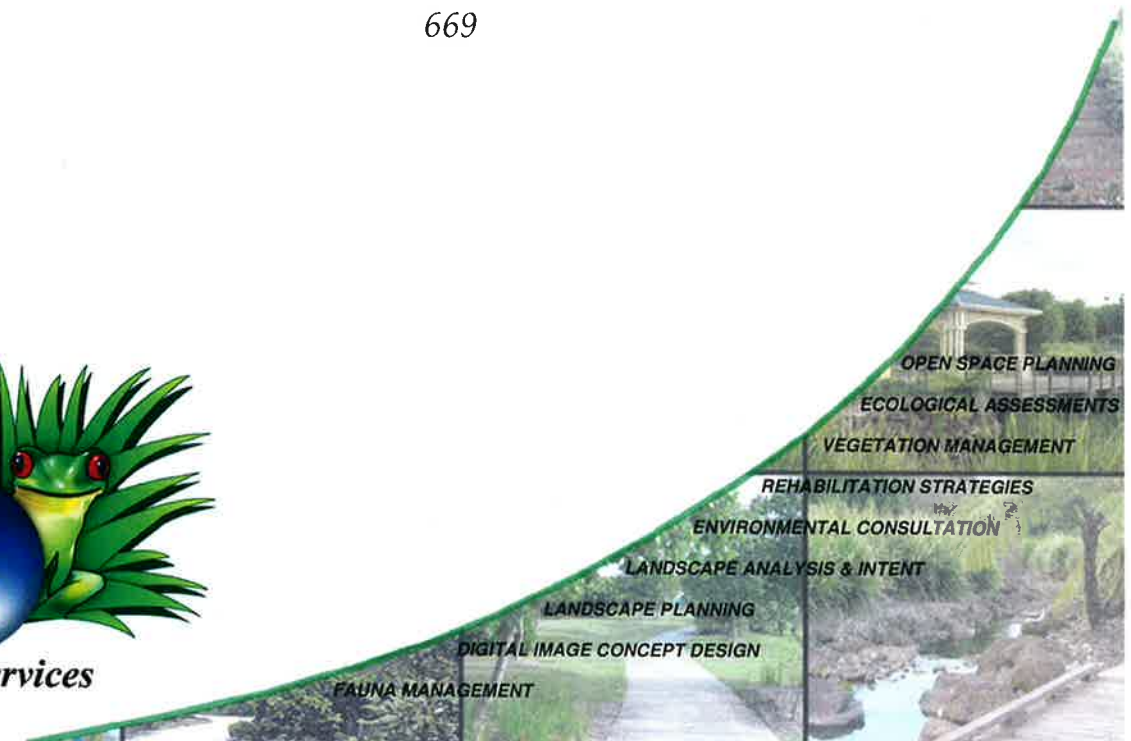


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PRELIMINARY ECOLOGICAL SITE ASSESSMENT

1.0 INTRODUCTION

Boyd's Bay Environmental Services Pty.Ltd. has been commissioned to provide a preliminary ecological site assessment of the subject site located at Lot 517 DP 729286, Tweed Coast Road, Cabarita . This assessment has been conducted by John Bruun (B.Env.Mng + Dip.Hort), and Alisha Ousby (B.E.Sci.Ecol.Cons.Biol. + Dip Hort.) Micheal Dickinson (Wildlife Manager)

This assessment has examined the relevant criteria to enable a preliminary understanding of what flora, fauna, and ecological interactions are present on site. This information has been used in order to, assess ecological impacts and develop environmental management strategies that will assist in planning, site layout, rehabilitation strategies and future landscaping of the site. The information contained within this report will assist in guiding the proposed works in an environmentally considerate direction in relation to the proposed development. This report identifies a preliminary range of assessment details, involving the analysis of the following ecological components:

- Botanical surveys
- Vegetation types present
- Condition of vegetation
- Vegetation mapping
- Habitat analysis
- Habitat corridor value
- Fauna surveys
- Presence of fauna species
- Ecological significant areas
- Impact analysis of the proposed actions



- 0.045ha VC 1 - Coastal Cypress Pine Forest in the NSW North Coast Bioregion(EEC)
- 0.72ha VC 2 - Banksia Dry Sclerophyll Open Forest with sub dominant littoral rainforest species
- 1.75ha VC 3 - Banksia Dry Sclerophyll Open Forest with distubed shrub and groundlayer.
- 4.98ha VC 4 - Banksia integrifolia regrowth with Leptospermum laevigatum dominant shrub layer Heavily weed invaded and distubred by fire, past landuse, track formation and weed invasion
- 0.85ha VC 5 - Exposed sand, grassland & mixed exotic weeds

1.1 Proposed Land use

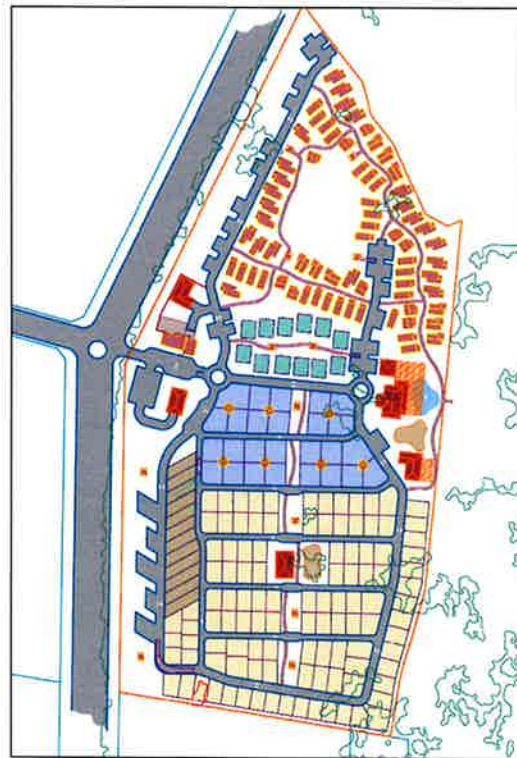


Figure 1: Proposed action

2.0 VEGETATION DESKTOP ANALYSIS

2.1 Methodology

Provisions of the desktop analysis:

- National Parks and Wildlife Service Atlas related maps and past studies
- Tweed Vegetation Management Strategy
- Tweed Shire Council Local Environment Plan and overlay maps
- Tweed Shire Tree Preservation Orders
- Literature Reviews

2.2 Database Analysis & Literature Review

Overlay maps and data sources available for the site through the Tweed Shire Council, National Parks and Wildlife Service Atlas and Department of Environment and Climate Change have been reviewed to provide current and historic records of vegetation on the subject site.

2.2.1 Overlay Maps

2.2.2 Local Environment Plan



Figure 2: Tweed Local Environment Plan '2000'

The site is mapped as 'Open Space' in the Tweed Local Environment Plan (Open Space 7f)

2.2.3 Tree Preservation Order



Figure 3: TSC Tree Preservation Order (2010)

The site is not mapped under the TSC Tree Preservation Order.

2.2.4 Broad Vegetation Communities

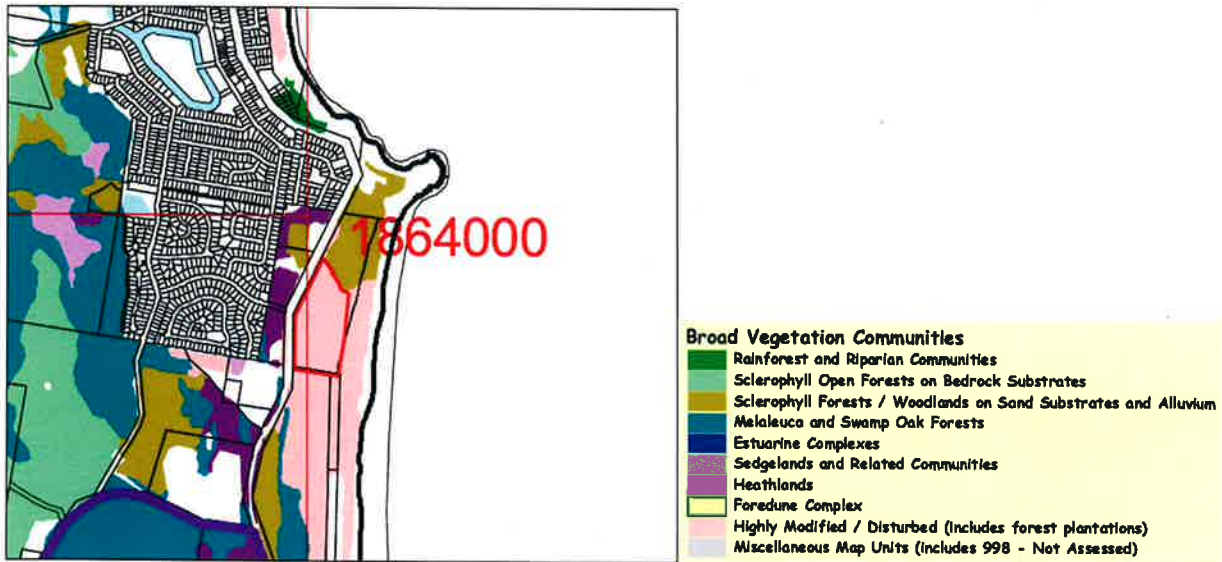


Figure 4: Tweed Vegetation Management Strategy (2004)

The 'Broad Vegetation Community' description is listed in the TSC Vegetation Management Strategy as Highly Modified / Disturbed

2.2.5 Vegetation Type

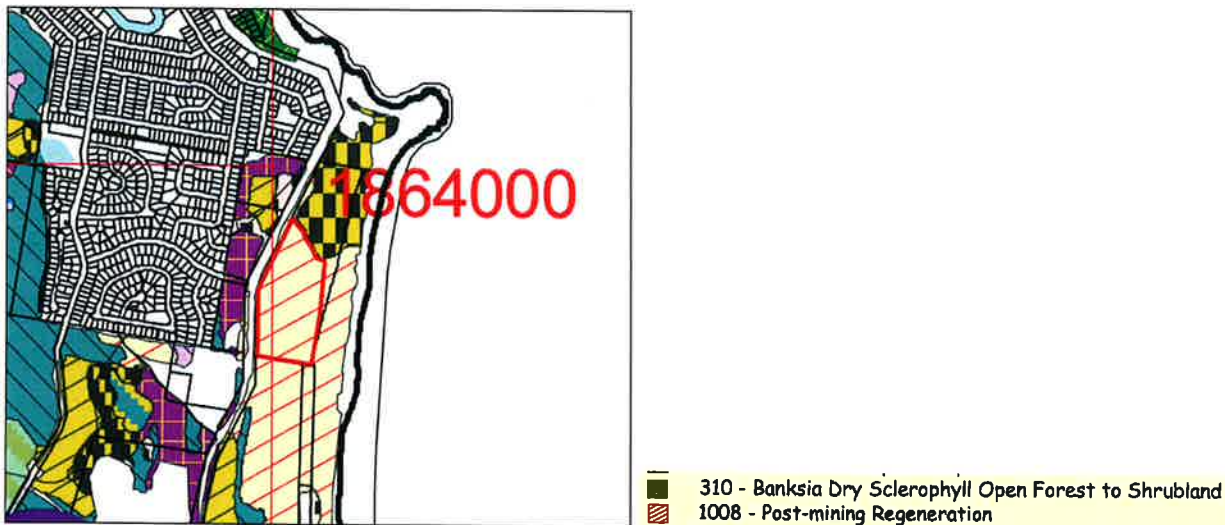


Figure 5: Tweed Vegetation Management Strategy (2004)

The 'Vegetation Type' description is listed in the TSC Vegetation Management Strategy as Post-mining Regeneration

2.2.6 Surrounding Reserves



Figure 6: Surrounding nature reserves and environmental parks

2.2.7 National Parks and Wildlife Service Atlas of NSW Wildlife

The NPWS Atlas identifies records of 1103 flora species and 362 fauna species known within a 20 square kilometre area centred on the subject site.

3.0 SITE ASSESSMENT - VEGETATION

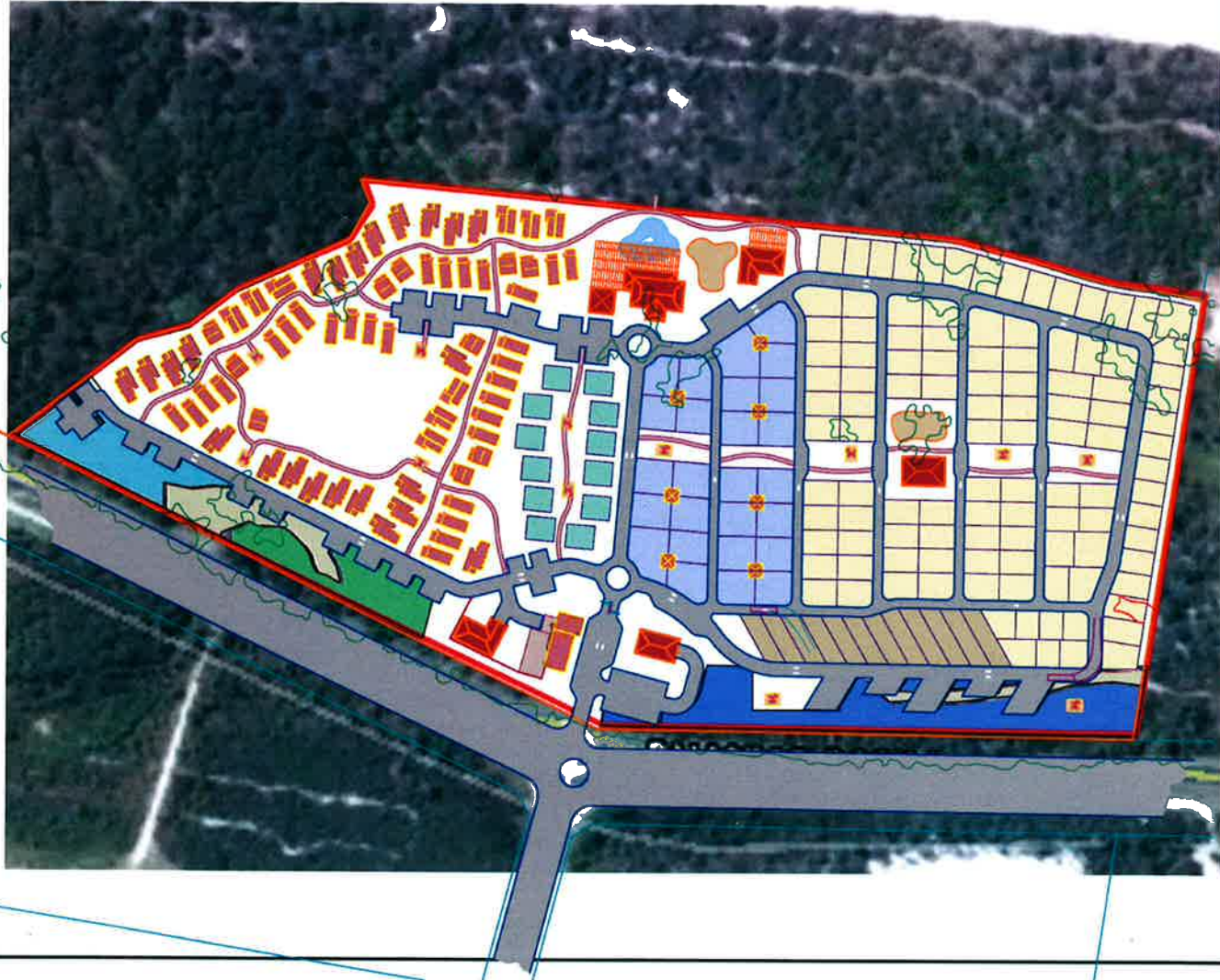
3.1 Vegetation Survey Methodology

The survey areas were selected by considering environmental factors that influence vegetation growth and development; which include:

- Landscape location - Ridgeline / Gully;
- Creek systems;
- Hill face aspect - N.E.S.W;
- Elevation;
- Aerial photography - Community Distribution.

A Reference Site Field Survey Form, scaled site plans, a GPS data recorder and camera were used to record data that is relevant to the ecological assessment. This included plant identification, structural analysis and diversity characterization, which enable establishment of:

- Vegetation Communities
- Height Estimates
- Percentage Foliage Cover
- Canopy cover
- Canopy age estimation
- Weed invasion
- Diversity assessment
- Disturbance / Impacts
- Conservation assessment



VEGETATION TYPE	VEGETATION COMMUNITY	SITE COVERAGE (Ha)	AREA REMOVED (Ha)	AREA CONSERVED (Ha)	PERCENTAGE REMOVED	PERCENTAGE PLANNING ALLOCATION
Coastal Cypress Pine Forest in the NSW North Coast Bioregion (EEC)	VC1	0.045	0.045	0	100%	1%
Banksia Dry Sclerophyll Open Forest with sub dominant littoral rainforest species	VC2	0.72	0.575	0.145	80%	8%
Banksia Dry Sclerophyll Open Forest with disturbed shrub and groundlayer. Banksia integrifolia regrowth with Leptospermum laevigatum dominant shrub layer	VC3	1.75	1.61	0.14	92%	21%
Heavily weed invaded and disturbed by fire, past landuse, track formation and weed invasion	VC4	4.98	4.65	0.33	93%	61%
Exposed sand, grasses and mixed exotic groundlayer weeds	VC5	0.85	0.73	0.12	86%	10%
TOTAL		8.345	7.61	0.735	91%	100%

- VC 1 - Coastal Cypress Pine Forest in the NSW North Coast Bioregion (EEC)
- VC 2 - Banksia Dry Sclerophyll Open Forest with sub dominant littoral rainforest species
- VC 3 - Banksia Dry Sclerophyll Open Forest with disturbed shrub and groundlayer.
- VC 4 - Banksia integrifolia regrowth with Leptospermum laevigatum dominant shrub layer Heavily weed invaded and disturbed by fire, past landuse, track formation and weed invasion
- VC 5 - Exposed sand, grassland & mixed exotic weeds



3.2 Proposed Development Impact Assessment

VEGETATION TYPE	VEGETATION COMMUNITY	SITE COVERAGE (Ha)	AREA REMOVED (Ha)	AREA CONSERVED (Ha)	PERCENTAGE REMOVED	PLANNING ALLOCATION
Coastal Cypress Pine Forest in the NSW North Coast Bioregion (EEC)	VC1	0.045	0.045	0	100%	1%
Banksia Dry Sclerophyll Open Forest with sub dominant littoral rainforest species. Emerging (EEC)	VC2	0.72	0.575	0.145	80%	8%
Banksia Dry Sclerophyll Open Forest with disturbed shrub and groundlayer.	VC3	1.75	1.61	0.14	92%	21%
Banksia integrifolia regrowth with Leptospermum laevigatum dominant shrub layer Heavily weed invaded and disturbed by fire, past land use, track formation and weed invasion	VC4	4.98	4.65	0.33	93%	61%
Exposed sand, grasses and mixed exotic groundlayer weeds	VC5	0.85	0.73	0.12	86%	10%
	TOTAL	8.345	7.61	0.735	91%	100%

3.2.1 Proposed Development Layout - Impact Analysis

Summary of table

Approximately (61%) of the development foot print will occur on *Banksia integrifolia* regrowth with *Leptospermum laevigatum* dominant shrub layer heavily weed invaded and disturbed by fire, past land use, track formation and weed invasion. The proposed action will remove 4.65 hectares of this vegetation type.

Approximately (21%) of the development foot print will occur on Banksia Dry Sclerophyll Open Forest with disturbed shrub and ground layer. The proposed action will remove 1.61 hectares of this vegetation type.

Approximately (10%) of the development foot print will occur on exposed sand, grasses and exotic ground layer weeds. The proposed action will remove 0.73 hectares of this vegetation type.

Approximately (8%) of the development foot print will occur on Banksia Dry Sclerophyll Open Forest with sub dominant littoral rainforest species. The proposed action will remove 0.575 hectares of this vegetation type.

From the purpose of this preliminary study the findings have determined that vegetation community 2 is in the secondary to tertiary stages of vegetation succession towards a littoral rainforest community. This process is also being assisted by the ecosystem regeneration practices of the local community groups.

Approximately (1%) of the development foot print will occur on Coastal Cypress Pine Forest in the NSW North Coast Bioregion (EEC). The proposed action will remove 0.045 hectares of this vegetation type.

Approximately 91% of the sites existing vegetation will be removed by the development proposal.

The current proposal provides 9% of the site for potential rehabilitation and habitat enhancement opportunities for the long term.

The current proposal will remove a small polygon (0.045ha) of a listed Endangered Ecological Community

The current proposal will remove a (0.72ha) of an emerging Endangered Ecological Community.

The botanical surveys did not discover any TSC Act listed Flora species.

The site has been identified to provide minor ranging and feeding opportunities to listed threatened species.

The site does not provide core or essential habitat functions for these listed threatened species.

The majority of vegetation type to be removed is well represented in the local area within the Cudgen nature reserve and Hasting Point environmental parks.

The management intents of the EPBC Act, TSC Act, FM Act, threatened species recovery strategies and threat abatement plans may be compromised by the current proposed actions for this site. Referral to the relevant assessment agencies of the proposal in its current form will be required.

The surveys have not identified any essential Koala feed trees evident in or adjacent to the site.

Environmental and Vegetation offset packages will be required to support the proposal.

The proposal will reduce the habitat connectivity functions of the site and surrounding systems.