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1.0 INTRODUCTION

1.1 SCOPE OF THE ASSESSMENT

This firm has been requested by Luke and Co. Pty Ltd (on behalf of St Vincents Foundation Pty Ltd) to undertake an ecological survey, impact assessment and EPBCA – *Matters of National Environmental Significance* assessment of the land identified as Part Lot 123 DP 1106943 and Lot 5 DP 25886, Ocean Drive, Lake Cathie. This survey and assessment forms part of an Environmental Assessment for two development applications under Part 3A of the *Environmental Planning and Assessment Act 1979* to the Dept of Planning (DoP), NSW, as follows:

MP 06_0085	Rainbow Beach Concept Plan
MP 07_0001	Open Space Corridor and Constructed Wetland, Rainbow Beach

The assessment has been undertaken according to:

- *Draft Guidelines for Assessment of Impacts on Threatened Species Under Part 3A* (Dept of Planning 2005).
- *Draft Threatened Species Survey and Assessment – Guidelines for Developments and Activities* (DEC 2004).
- *Ecological Consultants Association of NSW – Code of Ethics* (2002), available at www.ecansw.org.au.

1.2 SCOPE OF THE SUBJECT PART 3A APPLICATIONS

The first application ("*Concept Plan*") seeks consent for (see figure 2):

- The delineation of the limits of the residential subdivision
- The location of the three intersections with Ocean Drive
- The delineation of the extent of the future school sites
- The general location of the Greater Lake Cathie/Bonny Hills Village Centre
- The delineation of the site for future eco-tourist development
- The delineation of the extent of the Open Space, Drainage and Wildlife Habitat Corridor

The second application ("*Project Application – Open Space Corridor and Constructed Wetland*") seeks consent for the following elements:

- Open Space, Drainage and Wildlife Habitat Corridors
- Earthworks required for Constructed Wetlands and to create filled reclaimed areas
- Storm Water Treatment and Management, and
- District Sporting Fields and Facilities

Consent for the two Part 3A applications identified above and completion of the physical works subject of those consents, will advance the project to the point where:

- The layout (concept plan form) of the development site, consistent with Port Macquarie-Hastings Council's strategic planning objectives, is approved and established;
- Future urban and residential development areas are reclaimed and appropriately protected and vegetated.

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- The open space, habitat and drainage corridor areas of the site are rehabilitated with typical indigenous coastal habitats appropriate to the location and readied for the future incorporation of passive recreational facilities (eg pathways, cycleways, park seating, children's playgrounds and picnic areas).

Urban and residential development will then be completed in a series of stages, each of which will be the subject of future applications.

1.3 DGR'S ADDRESSED IN THIS REPORT

The Director has issued Director General's Requirements (DGR's) for the Concept Plan Application (CPA) and the Project Application (PA).

The following Concept Plan Application DGR's are addressed in this report:

CP 7.3: Outline measures for the conservation of flora and fauna and their habitats within the meaning of the Threatened Species Conservation Act 1995.	**Recommendations**: Sections 6.1. 6.2 and 6.3
CP 7.4: Outline measures for the conservation or enhancement of existing wildlife corridors and/ or the connective importance of any vegetation on the subject land.	**Recommendations**: Section 6.1 and 6.3

The following Project Application DGR's are addressed in this report:

PA 4.1: Outline potential impacts on flora and fauna and their habitats (within the meaning of the Threatened Species Conservation Act 1995 across the site and where relevant provide conservation measures.	**Impacts**: Section 5.0 **Recommendations**: Sections 6.1, 6.2 and 6.3.

1.4 OTHER STATUTORY PROVISIONS

The relevant provisions of the Commonwealth *Environment Protection and Biodiversity Conservation (EPBCA) Act 1999 - Matters of National Environmental Significance* are also addressed in this document.

2.0 BACKGROUND INFORMATION

2.1 LOCATION AND ACCESS

The subject land is located off Ocean Drive, <1km south of the centre of Lake Cathie village and north of Bonny Hills. Current access is directly from Ocean Drive. Figure 1 shows the general location of the land in the locality.

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2.2 DEFINITIONS

The area affected by constructed wetland and filling area (ie the Project Application) is generally referred to as the "**site**". The remainder of the land which is subject to the Concept Plan Application, is referred to as the "**property**". Habitat within a 10km radius is referred to as the **locality**.

2.3 CLIMATE AND WEATHER

2.3.1 Climate of the Bioregion

The climate of the north coast of the North Coast Bioregion from just north of Newcastle to the Queensland border is generally warm temperate. The main influence is the latitudinal position of subtropical anticyclone centres which more easterly across Australia.

In Summer, warm moisture-laden east to south east winds predominate, sometimes bringing rain, with the heaviest in the form of thunderstorms or depressions from subtropical cyclones moving south. In Winter, the northern movement of the anticyclones leads to a dominance of usually dry west to south winds, often leading to fine sunny days and cool nights. Rainfall is usually associated with cold fronts and the coldest temperatures.

Rainfall tends to be distributed more in Summer in the north of the region, to a relatively evenly distribution in the south. Annual rainfall is most influenced by distance from the coast and topographic position, with a general decrease from east to west. Annual rainfall in the coastal Hastings area is around 1522mm pa (www.hastings.nsw.gov.au), falling predominantly in Summer and Autumn.

Temperature over the region primarily varies with altitude, decreasing about 5^{o} per 300m rise, and about 2-3^{o}C from north to south in areas of similar altitude. The average annual temperature on the coast is typically 16-20^{o}C, while the annual range is 18-22^{o}C (Australian Bureau of Meteorology, cited in Hager and Benson 1994).

2.3.2 Weather Conditions During Survey

The main ecological survey was conducted from the 22nd to the 26th of May 2006. Conditions were generally clear, cool and fine for the majority of the survey (15-24^{o}C). Night conditions were clear and cool (2-11^{o}C). Cloud cover and thunderstorms were observed to the south of the property on the 22nd of May, however no rainfall fell on the site during the main survey period. The area had not received any substantial rainfall prior to the survey though with good rain (about 30mm) fell over several days in early July which allowed a targeted frog survey to be undertaken after the main survey to check previous findings by Berrigan (2003h).

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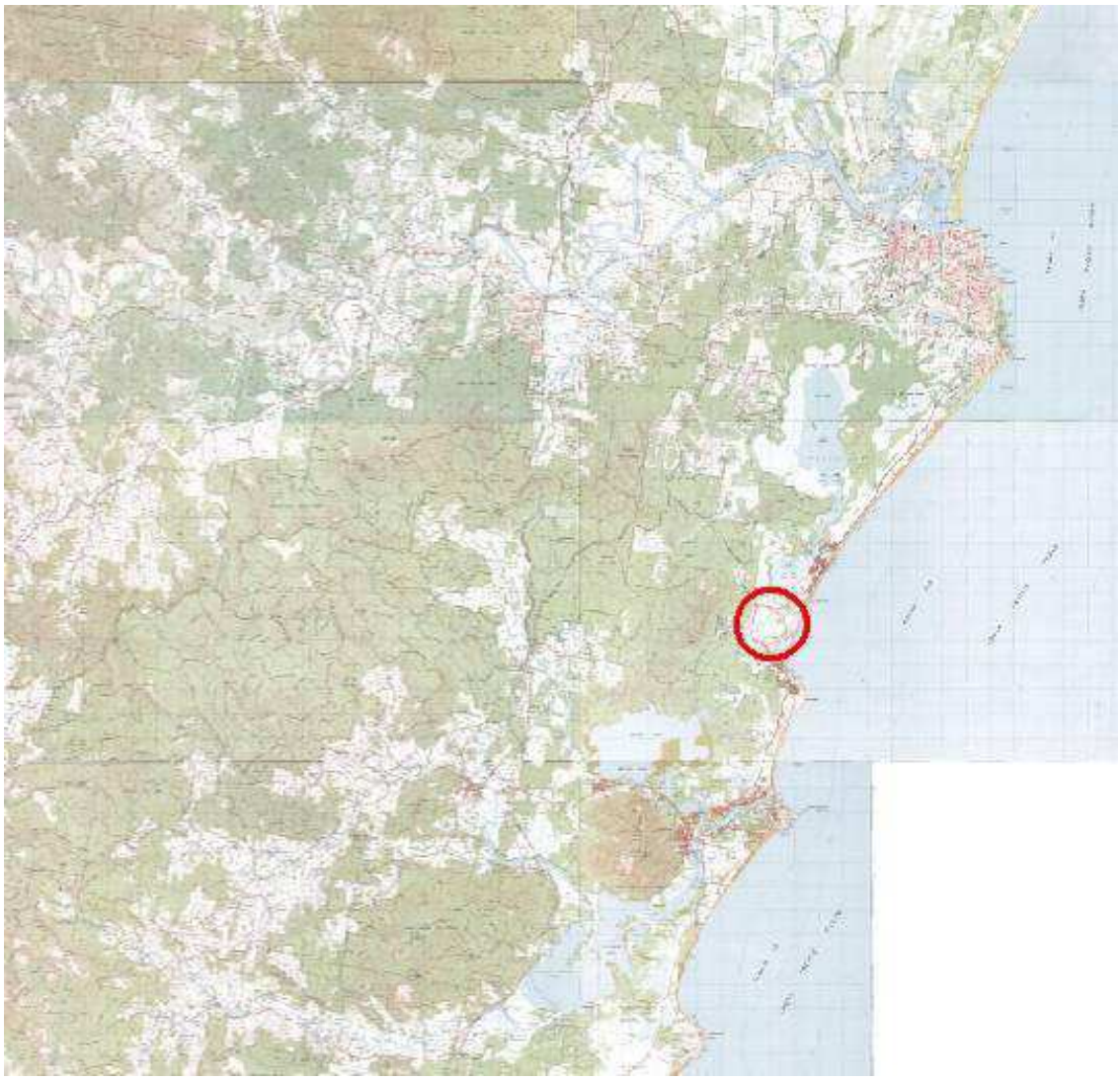
Figure 1: Local position of site
(Source: Grants Head 9434-1N, 1:25 000 Topographical map, © LPIC Orange 2008)



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