
Riverbend
Emigrant
RIVER
STREET
Ballina
Waterfront
Village
ROAD
FERRY
POINT
BURNS
Richmond River
LEGEND
Boundary - Subject Site
GDA
N
W
E
S
Locality Map - Lot 4 DP 537419
Burns Point Ferry Road, West Ballina
DISCLAIMER
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Chronology of Council Resolutions and Activity
Ballina Waterways/ Burns Point Ferry Road

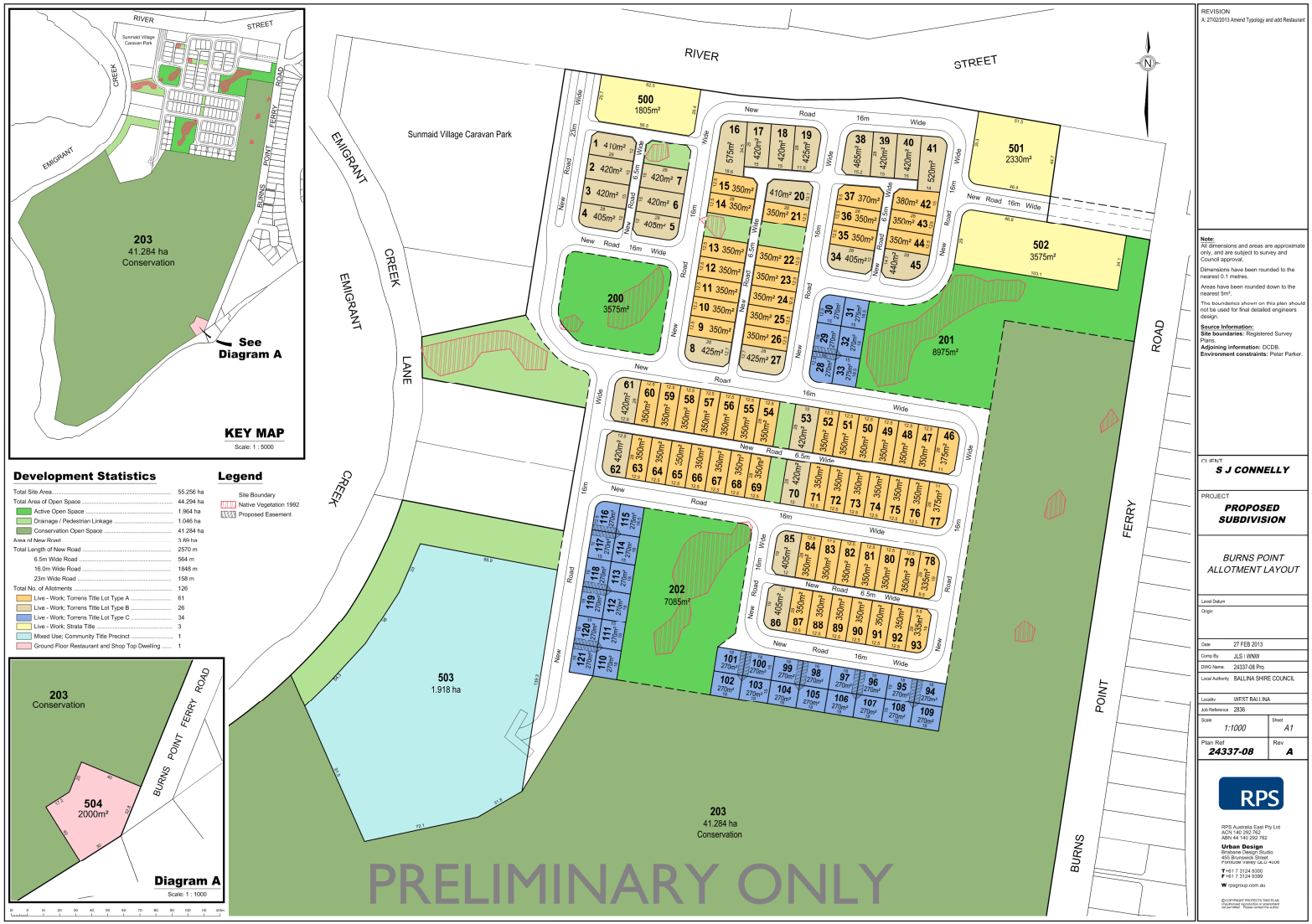
Date	Action
November 1995	Council resolved to prepare an amendment to the Ballina Local Environmental Plan for the area "*bounded generally by the Pacific Highway, Emigrant Creek, the Richmond River and Burns Point Ferry Road, with the purpose of the plan being to facilitate the urban development of the site*".
June - July 1997	Exhibition of draft amendment 39 to the Ballina Local Environmental Plan 1987.
June 1999	Amended concept plan submitted by Steel & Associates Pty Ltd that attempted to address community and public authority submissions to the public exhibition.
July 1999	Council resolved to exhibit the revised rezoning proposal.
September 1999	Exhibition of the revised proposal deferred pending submission of further geotechnical information.
1999 - 2005	Ongoing work relating to resolving technical issues on the site.
November 2005	Rezoning request received seeking support from Council to rezone the land to facilitate residential development in the northern half of the site, with the remainder of the area to be zoned for environmental protection purposes. The request was worded as if it were a fresh application (i.e. not reliant on the previous decisions of Council) and an application fee was paid.
January 2006	Council resolved as follows: 1. *That the Council proceed to commence the formal processing of the requested amendment to the Ballina Local Environmental Plan 1987 relating to Lot 4 DP 537417 with the matter to be the subject of a further report to the Council providing additional technical detail with respect to the proposed amendment.* 2. *The Council workshop proposed on developer agreements will further define Council's expectations with respect to this particular development and the potential for a marina.* The report included the following statement: *This report is essentially to inform the Council with respect to whether or not it is considered the request is consistent with the adopted criteria for the commencement of formal processing, and to seek direction from the Council as to whether the formal processing of the request should commence.* *It is important to note that the commencement of the formal amendment process in no way binds the Council to rezone the land. Commencement of the process merely means that more detailed technical assessment of the proposal will start. Should Council wish to continue consideration of this proposed amendment, the next step will be the presentation of a more detailed report to the Council regarding the technical aspects of the proposal based on an initial review of the material provided by the proponent.* The Council resolution was not forwarded to the Department of Planning under S54(4) of the Act. The following advice was provided to the proponent: *Please note that Council's consideration of the matter to date stops short of a decision to prepare a draft local environmental plan, as required under Section 54 of the Environmental Planning and Assessment Act.* This is the origin of draft LEP Amendment No.93.

July 2006	Council considered an update report concerning the rezoning. The report advised that there ware a range of constraints over the land which were still being assessed. Council resolved as follows: *That the report concerning the current status of the request for rezoning of Allotment 1 DP 537417 Burns Ferry Road, West Ballina be received and noted.*
October 2008	Response from Landpartners (formerly Aspect North) to Council's list of issues, withdrawing the concept plan and requesting: • That the 4.76 ha area adjacent to the Pacific Highway be rezoned for urban development. • The potential to explore further development options over the balance of the land be preserved by maintaining the current zone or equivalent and that it be considered for urban expansion in the Urban Land Release Strategy.
December 2008	Council resolved as follows: *That in respect to the subject land matters Council resolves to proceed with option two as identified in the body of this report.* Option 2 is reproduced below: 1. *Advise the various land owners that Council is supportive of rezoning the 4.76 ha area of the Ballina Waterways site adjacent to the Pacific Highway and the immediately adjoining lands for urban purposes as part of the comprehensive Draft Local Environmental Plan, provided that:* a. *An integrated rezoning strategy is provided in conjunction with the Ferry Boat Motel site.* b. *The proposed zoning facilitates the development of the land for low key tourist accommodation, aged care, manufactured home estate, business or low key/impact industrial or a mix, rather than conventional residential allotments.* c. *A zoning strategy includes areas to be set aside for environmental protection, compensatory environmental measures and strategies for long term maintenance of environmental protection areas.* d. *The owners of the Ballina Waterways and former Ferry Boat Motel site provide commitments towards access being provided to and across the site in accordance with the NSW Roads & Traffic Authority recommendations i.e. extension of Kalinga Street across the site to give alternative access to Emigrant Lane.* e. *A planning agreement is provided that outlines all undertakings/proposals that cannot be secured or delivered via the proposed zoning; or* (Note: It is envisaged that the owners of the adjoining Emigrant Lane Properties would be contacted to ascertain their preference for the future zoning of their land.)

	The Report to Council included the following advice: *Council has the ability to include the subject land and the other adjoining land in a draft plan under the terms of Council's original resolution at its Ordinary Meeting held on 23 November 1995:* *"to prepare a local environmental plan to amend the provisions of the Ballina Local Environmental Plan 1987. The amending plan shall apply to that area in West Ballina bounded generally by the Pacific Highway, Emigrant Creek, the Richmond River and Burns Point Ferry Road, with the purpose of the plan being to facilitate the urban development of the site".* *Recent advice from the Department of Planning suggests that Council can continue to act on this original resolution if it wishes to prepare a draft plan for this land. Council will, however, need to obtain a Section 65 Certificate from the Director-General of Planning for the public exhibition of a draft plan.* *If Council is to support any rezoning of part of the land for urban purposes, it may have to be undertaken as part of the comprehensive new Draft Local Environmental Plan, given the timing of both matters.* Consideration of the amendment proceeded under draft LEP Amendment No.39.
July 2009	Presentation to Councillors by SJ Connelly concerning revised concept for the site.
March 2010	Draft Ballina Local Environmental Plan 2010 placed on public exhibition proposing entire site to be zoned R2 Rural Landscape.
April 2010	Council request for clarification regarding proponent's progress in relation to the amendment. Request sought clarification in relation to the following: *a. whether or not your client intends to proceed with the current rezoning request; and* *b. should your client still be proceeding with the rezoning proposal, the likely timeframe for the submission of the required technical information connected to the rezoning.* No specific response was received.
May 2010	Council request to Department of Planning for entry of LEP amendment no.39 into the Gateway planning system. Amendment could not continue under the previous LEP amendment system.
June 2010	Department of Planning advice that conversion of the existing draft to a planning proposal under the Gateway system was not supported. This advice closed the consideration of the LEP amendment request (39) previously presented to Council.
October 2010	Advice from SJ Connelly that Part 3A submission lodged with Department of Planning. Council advised of a mixed urban/ environmental concept for the land (including biobanking).
May/ June 2011	Project identified as not being received into the Part 3A assessment system under reforms to Part 3A.
September 2011	Draft Ballina Local Environmental Plan 2011 placed on public exhibition proposing entire site to be zoned E2 Environmental Conservation.
December 2011	Submission received from SJ Connelly in relation to proposed environmental conservation zoning for the site in Draft Ballina Local Environmental Plan 2011. In response, Council resolved to grant the proponent additional time to prepare a rezoning proposal and to zone part of the site rural in accordance with its December 2008 resolution. This resolution included the applicable land use zoning for the site would be reviewed in 12 months.

May 2012	LEP amendment request received to rezone Lot 1 DP 522558 (former Ferry Boat Motel site) to allow medium density residential development.
July 2012	LEP amendment request received from SJ Connelly to rezone Lot 4 DP 537419 (Ballina Waterways site) comprising a mix of urban and environmental conservation land uses (including biobanking).
September 2012	LEP amendment request for Lot 1 DP 522558 (former Ferry Boat Motel site) reported to Council with recommendation to proceed with preparation of a planning proposal for Lot 1 only. Proposal for Lot 4 to be assessed and reported separately.
October 2012	Council request to SJ Connelly for additional information in relation to rezoning proposal for Lot 4, including request for proponent agreement to engage third party ecological consultant to review ecological characteristics of site. No specific response received.
February 2013	Ballina Local Environmental Plan 2012 is made and zones the 4.76 hectare area (identified in the December 2008 Council resolution) as RU2 Rural Landscape. The remainder of the site (proposed for E2 Environmental Conservation under the Draft LEP) is deferred and remains zoned 1(b) – Rural (Urban Investigation) as per the Ballina Local Environmental Plan 1987.
June 2013	Matter reported to Council for direction as to how to proceed in relation to current proposal having regard to Council's previous (December 2011) resolution and the proponent's failure to respond to Council's October 2012 correspondence. Council resolved to defer consideration of the matter for up to 6 months allowing the proponent to submit additional information.
January 2014	Matter reported to Council for direction as to how to proceed following the lapsing of 6 months from the June 2013 resolution and the absence of additional information from the proponent. Council resolves to continue processing the amendment subject to the following: - undertaking of an independent ecological review at cost of applicant (to be completed by May 30), and, - Council seeking advice from the (then) Department of Planning and Infrastructure in relation to the ability to apply environmental protection zones to the site.
May 2014	Independent ecological consultant (Blackwood Ecological Services) provides report on the assessment of the ecological values of the site.
June 2014	The proponent acknowledges the findings and recommendations of the Blackwood Ecological Services report and makes a written commitment to enter a voluntary planning agreement with Council to achieve satisfactory ecological outcomes for the site should the LEP amendment proposal proceed.
July 2014	Matter reported to Council addressing items in January 2014 resolution.

14/45000


RIVER
STREET
EMIGRANT
CREEK
LANE
BURNS
POINT
FERRY
ROAD
Sunmaid Village Caravan Park
Sunmaid Village Caravan Park
203
41.284 ha
Conservation
See Diagram A
KEY MAP
Scale: 1 : 5000
Development Statistics
Total Site Area 55.256 ha
Total Area of Open Space 44.294 ha
Active Open Space 1.964 ha
Drainage / Pedestrian Linkage 1.046 ha
Conservation Open Space 41.284 ha
Area of New Road 3.89 ha
Total Length of New Road 2570 m
6.5m Wide Road 564 m
16.0m Wide Road 1848 m
23m Wide Road 158 m
Total No. of Allotments 126
Live - Work; Torrens Title Lot Type A 61
Live - Work; Torrens Title Lot Type B 26
Live - Work; Torrens Title Lot Type C 34
Live - Work; Strata Title 3
Mixed Use; Community Title Precinct 1
Ground Floor Restaurant and Shop Top Dwelling 1
Legend
Site Boundary
Native Vegetation 1992
Proposed Easement
203
Conservation
504
2000m²
Diagram A
Scale: 1 : 1000
500
1805m²
501
2330m²
502
3575m²
200
3575m²
201
8975m²
202
7085m²
503
1.918 ha
203
41.284 ha
Conservation
PRELIMINARY ONLY
REVISION
A 27/02/2013 Amend Typology and add Restaurant
Note:
All dimensions and areas are approximate only, and are subject to survey and Council approval.
Dimensions have been rounded to the nearest 0.1 metres.
Areas have been rounded down to the nearest 5m².
The boundaries shown on this plan should not be used for final detailed engineers design.
Source Information:
Site boundaries: Registered Survey Plans.
Adjoining information: DCDB.
Environment constraints: Peter Parker.
CLIENT
S J CONNELLY
PROJECT
PROPOSED SUBDIVISION
BURNS POINT ALLOTMENT LAYOUT
Level Datum
Origin
Date 27 FEB 2013
Comp By JLS \ WNW
DWG Name 24337-08 Pro
Local Authority BALLINA SHIRE COUNCIL
Locality WEST BALLINA
Job Reference 2836
Scale 1:1000
Sheet A1
Plan Ref 24337-08
Rev A
RPS
RPS Australia East Pty Ltd
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ABN 44 140 292 762
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BLACKWOOD ECOLOGICAL SERVICES

Ecological Assessment

Planning proposal
Lot 4 DP537419, Burns Point Ferry Rd
West Ballina, NSW

May 2014

NOTE

Document Verification

Project Title:		Burns Point Ferry Road, West Ballina – Ecological Assessment	
Project Number:		1409	
Project File Name:		Ballina Waterways - Ecological Assessment Burns Point Ferry.docx	
Revision	Date	Prepared by:	Reviewed by:
Draft	30/04/14	Kelly Simpson & Mark Free	Mark Free
Final	29/05/14		

Blackwood Ecological Services
PO Box 336
BANGALOW NSW 2479
www.blackwoodecology.com.au

BLACKWOOD ECOLOGICAL SERVICES

TABLE OF CONTENTS

1 INTRODUCTION

1.1 Background

Blackwood Ecological Services have been engaged by Ballina Shire Council to prepare an assessment of the ecological values of land designated as part of Lot 4 DP 537419, Burns Point Ferry Road, West Ballina which is currently under a proposal to be rezoned for urban purposes.

This assessment is to provide an independent general ecological assessment of the site and identify key ecological values, including the presence and extent of any Endangered Ecological Communities (EECs) on the site. The assessment includes the following:

- General overview of the vegetation species and communities present on the site and its immediate vicinity;
- General assessment of fauna species present on the site or likely to occupy it;
- Consideration of the presence of threatened species (flora and fauna), populations and ecological communities within the meaning of the TSC Act 1995; and
- A brief report outlining the details of the investigation including observation methods, findings, map and identify items of significance and comments/recommendations relating to identification of key ecological attributes (particularly threatened species, populations and/or communities).

A number of previous assessment have been undertaken as part of the proposed rezoning. These were reviewed as part of this assessment and are discussed in Section 2.

1.2 The Subject site

The Subject site refers to the area directly affected by the proposal. The Subject site for this study consists of land within the northern part of Lot 4 DP 537419, Burns Point Ferry Road, West Ballina, NSW. The Subject site is characterised by cleared agricultural land with patches of regrowth vegetation including mostly Swamp oak and Common reed.

FIGURE 1 shows the location of the Subject site as defined for this assessment. **FIGURE 2** shows an aerial view of the Subject site and the remaining areas of Lot 4 to the south which have been the subject of previous assessments.

1.3 The Study area

The Study area refers to the Subject site together with any additional areas which are likely to be affected by the proposal, either directly or indirectly. The Study area in this case includes adjoining areas of land and vegetation, primarily to the south of the Subject site.

1.4 Planning proposal

The planning proposal involves the rezoning and subdivision of the Subject site. A preliminary allotment layout of the proposed subdivision is provided in **APPENDIX A.** A 'live work' development concept is proposed which would provide working space at ground floor level and residential accommodation space above. Access to the site would be from River Street and Burns Point Ferry Road and a series of internal roads would be constructed. The majority of the lots would be small in size (270m^2 to 520m^2). The design would also incorporate some areas of existing Swamp oak forest within 'green' lots. The development footprint would be restricted to the northern part of Lot 4 with the southern portion (41.284 ha) being retained for conservation purposes.

Ecological Assessment
Part of Lot 4 DP 537419, Burns Point Ferry Road, West Ballina
Ballina Shire Council

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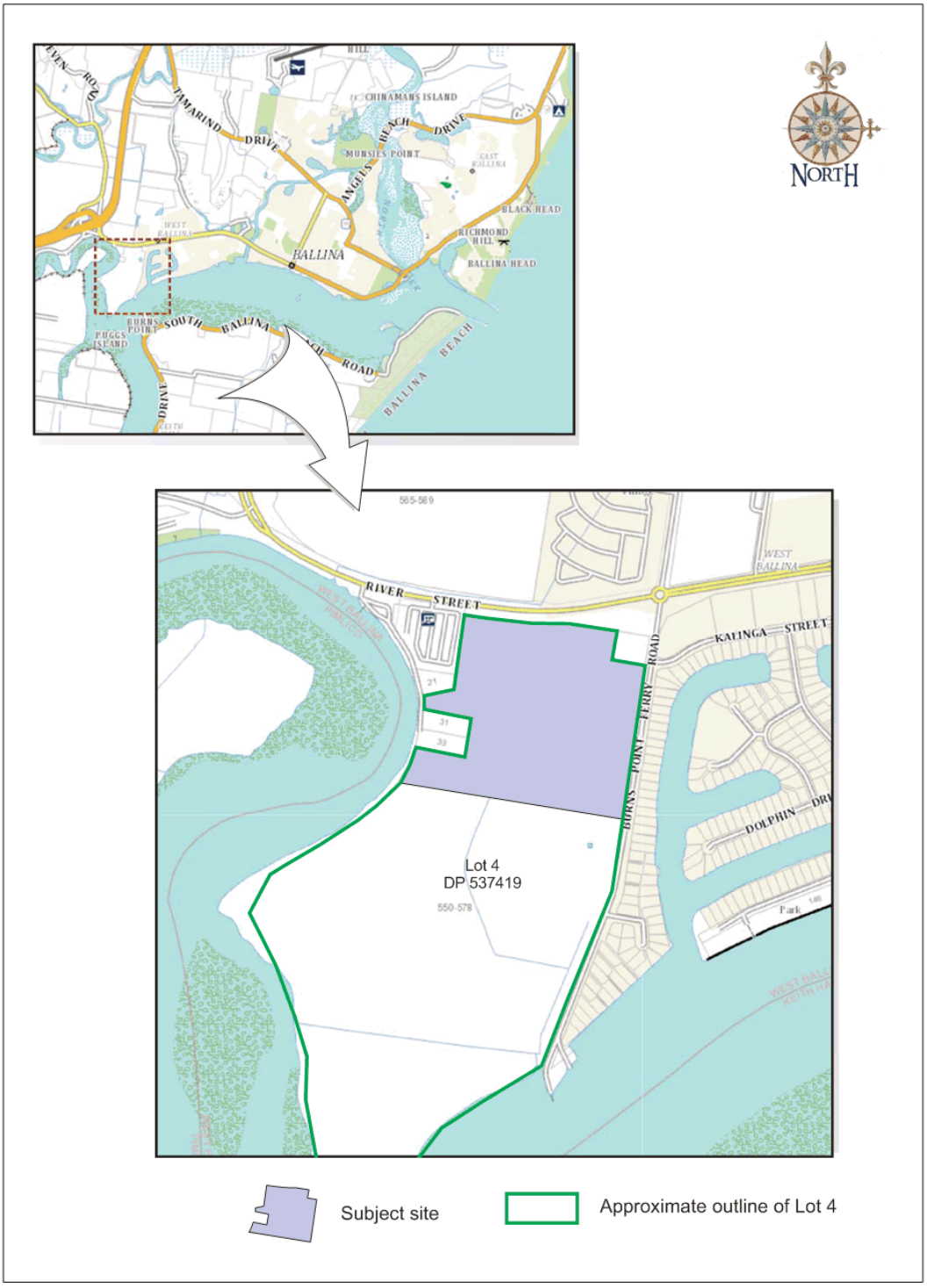

Source: NSW Gov SIX Maps
File: 1409
Drawn by: MF Date: 06/05/2014

Figure 1
LOCALITY

Ecological Assessment
Part Lot 4 DP 537419 Burns Point Ferry Road
Ballina Shire Council

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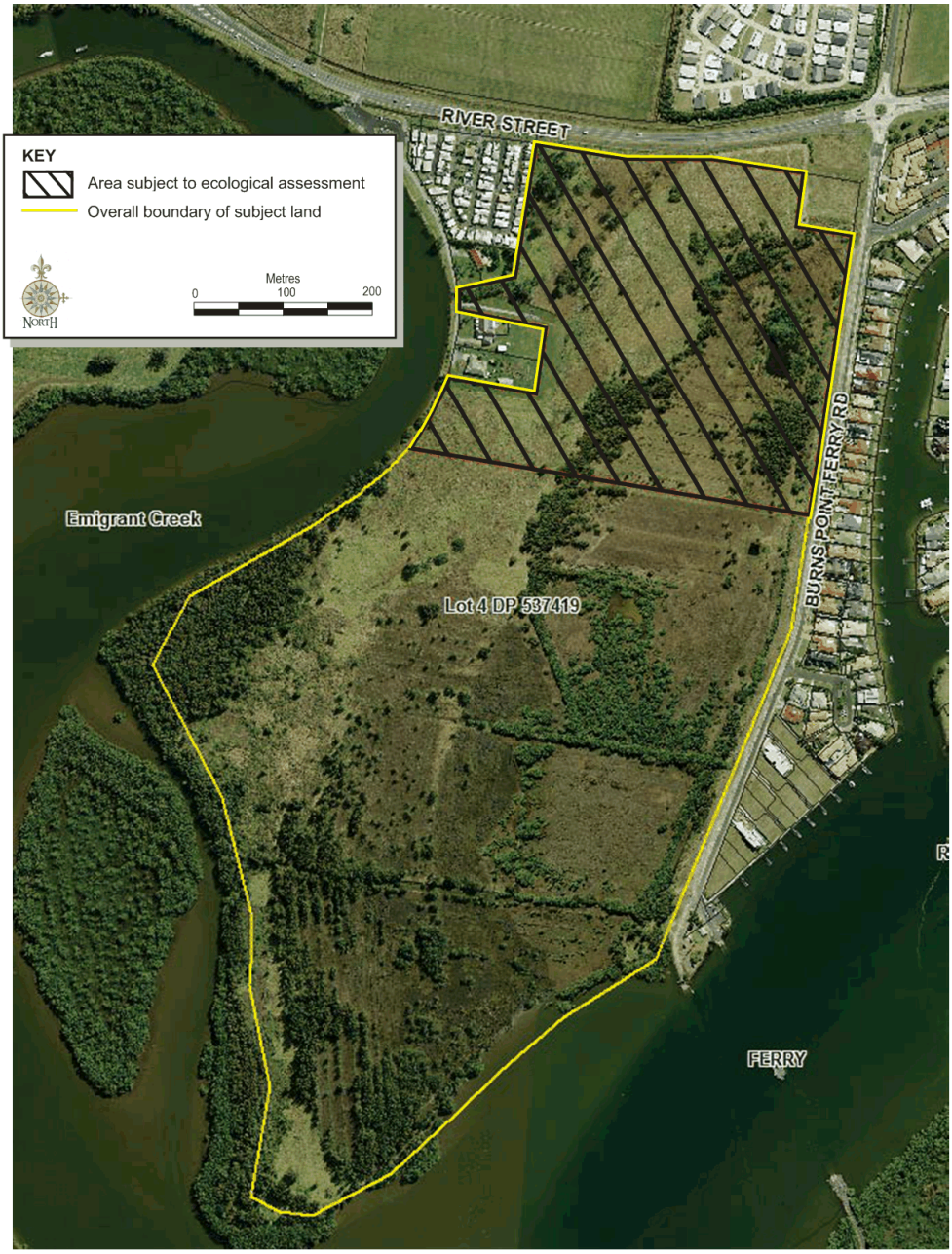

Source: SixViewer, accessed 6/5/2014
File: 1409
Drawn by: MF Date: 29/5/2014

Figure 2
AERIAL PHOTOGRAPHY

A Biobanking Statement (ID14) has been issued for the proposed development by OEH and which permits the clearing of 0.6 hectares of Swamp oak forest EEC and outlines the credit retirement conditions (refer to Section 2.1). The Biobanking application did not include any information pertaining to the presence or potential presence of Freshwater wetlands or any other EECs within the development footprint.

1.5 Site history and land use

The majority of Lot 4 was cleared, drained and farmed for sugarcane and a constructed drainage system remains evident through much of the site. Tidal inundation across the southern part of Lot 4 following the cessation of sugarcane farming has resulted in the recruitment of coastal saltmarsh and mangrove vegetation within low-lying areas and along constructed drains.

Historical aerial photographs show that site vegetation has largely re-established since the mid-late 1980s with some small patches of woody vegetation evident within the Subject site in 1991. The current extent of site vegetation is evident from 2007.

2 LITERATURE REVIEW

2.1 Previous assessment within the Subject site

Aspect North (16 November 2005) Flora and Fauna Assessment, Pacific Highway and Burns Point Ferry Road, West Ballina (Lot 4 DP 537419 on behalf of Ballina Waterways Pty Ltd.)
A total of 10 hours was spent on the flora survey component of the assessment which identified 10 different vegetation communities across the entirety of Lot 4. No Threatened flora species or populations were recorded. Two EECs were identified including *Coastal Saltmarsh in the NSW North Coast, Sydney Basin and South East Corner Bioregions* and *Swamp oak Floodplain Forest in the NSW North Coast, Sydney Basin and South East Corner Bioregions.*

This report mentions a number of previous assessments which were undertaken within the Subject site as well as opportunistic records from the subject site or near vicinity which were undertaken between 1989 and 1998. Thirteen currently listed threatened fauna species were identified in these assessments/surveys including;

- Grass owl
- Broad-billed sandpiper
- Pied oystercatcher
- Black-necked stork
- Brolga
- Osprey
- Grey-headed flying fox
- Great knot
- Lesser sand plover
- Greater sand plover
- Greater Broad-nosed bat
- Little bentwing bat
- Eastern bentwing bat

The report notes that the site was once considered a roost site for migratory waders during the 1980's and until the mid- 1990's, however, subsequent development of *Phragmites* and Mangroves has removed open mudflat habitats and the site is no longer considered an important roost for migratory waders. This disused roost site is located outside of the Subject site relevant to the current assessment and is not considered further.

The report notes that two threatened species, Grey-headed flying fox and Grass owl, were recorded by Aspect North during their fauna surveys which included 18.5 field hours. A pair of Grass owls were flushed, apparently from tall and dense grass in the north-western quarter of the site (within the proposed development site). No nests or obvious roost sites were found. Grey-headed flying foxes were observed flying over the Subject site and did not appear to stop within the subject site. The fauna list included in the report also notes that the Eastern osprey was recorded during their surveys.

The report concluded no significant impact to any threatened species, populations or EECs as a result of the rezoning proposed at the time of the Aspect North work.

LandPartners (letter dated 15th April 2008)Re: LEP Request – Ballina Waterways Lot 4 DP 537417, Pacific Highway & Burns Point Ferry Road, West Ballina – Final Vegetation Map.
This letter included a revision of the vegetation mapping prepared by Aspect North in 2005. This refinement was requested at the time by Ballina Shire Council's Ecologist Ian Gaskell. The

amended vegetation map identifies 10 vegetation communities across the entirety of Lot 4 and one additional EEC to that identified in the Aspect North assessment. The letter refines the grassland community mapped by Aspect North into two main graminoid communities. Community 1 (Tall closed grassland dominated by Common Reed with occasional Water couch) and Community 2 (Tall closed grassland (mixed species)). Community 1 is considered a highly simplified version of the Freshwater Wetland EEC listed under the TSC Act, although it is noted as species poor, degraded in parts due to exotics and regular inundation is considered doubtful, especially in western parts of the mapped community. Community 2 is not considered EEC due to the general lack of wetland species in the Cyperaceae family and dominance of exotic grasses. The remaining vegetation community mapping remains largely unchanged from that undertaken by Aspect North in 2005.

Parker, P (June 2012) Biobanking Assessment Report for Burns Point Development Proposal, Burns Point Ferry Road, Ballina.
Surveys for this assessment were conducted over three seasons, spring, summer and autumn of 2011-2012. The report discusses development of the northern part of Lot 4 (the area being assessed as part of this assessment) and the larger southern part of the site is proposed as a Biobank site. The report notes that 1.2ha of Swamp oak Floodplain Forest EEC would require removal from within the entire development site. The report does not identify or map any other EECs within the proposed development site and no threatened flora or fauna species were recorded during surveys. The report concludes that 38 ecosystem credits will be required to offset the proposed development.

The flora and fauna species lists compiled by Peter Parker as part of this report have not been provided as part of the literature review.

Parker, P (5th June 2013) Biobanking Assessment Report for Burns Point Development Proposal, Burns Point Ferry Road, Ballina. A report to the Office of Environment and Heritage.
This assessment includes a preliminary concept plan (as opposed to the previous biobanking assessment) and a more detailed calculation of vegetation clearing required as a result of the development. Based upon the concept plan approximately 0.6ha of Swamp oak EEC would be removed pursuant to a Biobanking Agreement. Approximately 0.85ha of Swamp oak EEC would be retained and managed for conservation purposes. In addition, some areas of native vegetation (Blackwood wattle and Forest red gum) would also be removed and subject to a development application lodged with BSC. The report concludes that 8 ecosystem credits will be required to offset the proposed development. The report does not mention or map any other EECs within the proposed development site.

The report mentions advice from OEH dated 21st January 2013 in response to the previous BioBanking Assessment report. This advice has not been reviewed as part of this literature review.

Planners North (letter dated 7th June 2013) Re: Planning proposal Burns Point
This letter provides a brief summary of the development application process up to June 2013. In summary, the planning proposal was submitted to BSC on 18th July 2012 and the initial Biobanking assessment report was submitted to OEH on 29th June 2012. Subsequently, the layout was adjusted to meet OEH requirements, hence the development of the concept plan and revised Biobanking Assessment report in June 2013. The letter includes plans relating to zoning, height, lot size, floor space ratio, development opportunity and additional permitted uses. The

letter also states that receipt of formal Biobanking certification regarding the removal of 0.6ha of Swamp oak floodplain forest EEC is anticipated.

Annexure E of the letter provides advice with respect to EECs and was prepared by Peter Parker. The annexure states that Common reed (*Phragmites australis*) has formed a monoculture across parts of the site since the abandonment of cane sugar farming in the 1960's. Parker makes the argument that these areas are not part of the Freshwater wetland EEC based upon the following points:

- Only one listed Final Determination (FD) species, Common reed occurs in the community;
- The floristics of the non-woody vegetation within the development site are not those which occur in the Freshwater wetland EEC as described by the FD (point 4);
- Fauna species listed in the FD (point 5) do not occur in the common reed grassland at the site;
- Land and Environment Court judgement (Gales Holding Pty Limited v Tweed Shire Council 2008) cited the FD in that freshwater wetlands are *"subject to fluvial processes…, namely active erosion and aggradation by channelled and overbank stream flow with an average recurrence interval of 100 years or less."* This does not occur at the site;
- The site has been continually slashed since cessation of farming, this being an argument in the court case listed above, that slashed/grazed vegetation are artificial constructs and not true indicators of the natural vegetation community;
- Common reed at the site is an artefact of past farming activities and not a true indicator of natural vegetation community;
- The FD states that *"artificial wetlands created on previously dry land specifically for purposes such as sewerage treatment, stormwater management and farm production, are not regarded as part of this community, although they may provide habitat for threatened species."*

Melaleuca Group (letter dated 18th October 2013) Re: Rezoning Project – Lot 4 DP 537419 Burns Point Ferry Road, West Ballina: Assessment of the Freshwater Wetlands Endangered Ecological Community.

This assessment provides further advice as to whether areas of Common reed within the development site comprise Freshwater Wetlands EEC. Melaleuca Group was engaged by Planners North on behalf of the proponent. Six 50 x 10m transects were undertaken within the *Phragmites* grassland community, with each transect comprising ten $1m^2$ sub-plots. The letter concludes that areas of *Phragmites* grassland within the development site are not consistent with Freshwater Wetland EEC based upon the structural and floristic characteristics of the community and those described by the FD. A total of 34 flora species were recorded, 22 of which were non-native and six taxa which are listed in the FD as characteristic of the EEC.

The accompanying figure showing the location of flora plots was not available as part of this literature review. This letter makes reference to a document prepared by Peter Parker (unpublished) titled 'Results of 20 x 20m plots within *Phragmites* grassland areas'. This document was also not available as part of this literature review.

NSW Office of Environment and Heritage (undated – based on mapping undertaken 26th November 2013) Biobanking Statement ID 14.
This statement permits the removal of 0.6ha of Swamp oak Floodplain Forest EEC on the proviso that 8 ecosystem credits (minimum 25 ha) are retired to offset these impacts. Specific conditions regarding construction management (pre-construction phase and during construction) and erosion and storm water management are also detailed.

2.2 Other assessments of relevance in the locality

Greenloaning Biostudies Pty Ltd (December 2010) Environmental Assessment for the proposed Teven truck stop Rev.4.
This ecological assessment was undertaken around the existing truck stop at the Teven interchange near the Ballina bypass which is located approximately 1km north-west of the Subject site. This site occurs on the same soil landscape as the Subject site relevant to this report. The assessment recorded areas of Swamp oak floodplain forest EEC and Freshwater wetland on coastal floodplains EEC. Nine native species listed in the Freshwater wetland EEC FD and one common weed species (Cape waterlily) also listed in the FD were recorded. The Assessment of Significance undertaken concluded no significant impact, primarily based upon the small impact (0.1674ha) compared with the local extent of Freshwater Wetland EEC in the study area (33.46ha).

2.3 Relevant cases in the Land and Environment Court

BGP Properties Pty Limited v Lake Macquarie City Council (2004) NSWLEC 399 revised - 5th May 2005.
This case highlights the problem with ambiguity in the Freshwater Wetland Final determination. In this instance the judge adopted the definition in the FD "mosaic community with considerable variation" and extended the area of Freshwater wetland designated by the applicant to include *"low-lying areas associated with sedgelands, which also include wet heath, swamp forest and swamp scrub."*

Gales Holding Pty Limited v Tweed Shire Council (2008) NSWLEC 209
The judge in this case stated that for a community to be Freshwater wetland EEC it must *"satisfy the edaphic, locational, floristic or structural criteria specified by the Scientific Committee in its final determination."* This includes the following:

- Typically occurs on silts, muds and humic loams in depressions, flats, drainage lines, backswamps, lagoons and lakes associated with coastal floodplains where coastal floodplains are level landform patterns on which there may be active erosion and aggradation by channelled and overbank stream flow with an average interval of 100 years or less.
- Excludes Freshwater wetlands in coastal sandplains
- The site may be low-lying and subject to flooding with an average recurrence interval of 100 years or less but active erosion and aggradation by channelled and overbank stream flow must occur during these events.
- Soils and topographic features of the site are to be associated or a product of fluvial processes.
- Low number of characteristic species is, by itself, not sufficient reason to exclude a vegetation community from being the Freshwater Wetland EEC.

- Vegetation is to contain amphibious, emergent, floating or submerged forbs, grasses or sedges.
- There is to be a scarcity or complete absence of woody plant species.
- The subject site in this case was regularly slashed and grazed and subsequent vegetation composition and structure was artificial in construct and not a true indicator of the natural vegetation community. Reference was made to the soil landscapes and their relevant characteristic vegetation.

3 FLORA

3.1 Introduction

This section discusses the methods used in the vegetation assessment and presents the results of the assessment. Relevant databases and reports were reviewed to identify records of locally occurring Threatened and Rare plant species, populations and communities.

3.2 Database searches

3.2.1 NSW Wildlife Atlas Database search

A search of the NSW Wildlife Atlas database revealed records of 16 Threatened flora species within 10km of the Subject site. These species are shown in **TABLE 1**.

TABLE 1
NPWS DATABASE RECORDS OF THREATENED FLORA SPECIES WITHIN 10 KM OF THE SUBJECT SITE

Botanical name	Common name	NSW Status
Archidendron hendersonii	White Lace Flower	V
Arthraxon hispidus	Hairy Jointgrass	V
Blumea lacera		E4
Cryptocarya foetida	Stinking Cryptocarya	V
Davidsonia jerseyana	Davidson's Plum	E1
Davidsonia johnsonii	Smooth Davidson's Plum	E1
Diploglottis campbellii	Small-leaved Tamarind	E1
Endiandra muelleri subsp. bracteata	Green-leaved Rose Walnut	E1
Hypolepis elegans		E4
Macadamia tetraphylla	Rough-shelled Bush Nut	V
Owenia cepiodora	Onion Cedar	V
Sophora fraseri	Brush Sophora	V
Syzygium hodgkinsoniae	Red Lilly Pilly	V
Syzygium moorei	Durobby	V
Tinospora tinosporoides	Arrow-head Vine	V

KEY

E1	Endangered
E4	Presumed extinct
V	Vulnerable

3.2.2 Commonwealth EPBC Act (1999) Database search

A search of the Commonwealth EPBC Act (1999) Database revealed potential suitable habitat for a number of Threatened flora species within 5km of the Subject site. These species are shown in **TABLE 2**.

The Commonwealth EPBC Act Protected Matters Report is included in full in **APPENDIX B**.

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TABLE 2
COMMONWEALTH EPBC ACT (1999) DATABASE OF THREATENED FLORA SPECIES WITH POTENTIAL SUITABLE HABITAT WITHIN 5 KM OF THE SUBJECT SITE

Botanical name	Common Name	Status
Acronychia littoralis	Scented acronychia	E
Allocasuarina defungens	Dwarf heath casuarina	E
Arthraxon hispidus	Hairy Jointgrass	V
Baloghia marmorata	Jointed baloghia	V
Bulbophyllum globuliforme	Miniature moss-orchid	V
Cryptocarya foetida	Stinking cryptocarya	V
Cryptostylis hunteriana	Leafless tongue-orchid	V
Davidsonia jerseyana	Davidson's plum	E
Davidsonia johnsonii	Smooth Davidson's plum	E
Desmodium acanthocladum	Thorny Pea	V
Diploglottis campbellii	Small-leaved tamarind	E
Floydia praealta	Ball Nut	V
Gossia fragrantissima	Sweet myrtle	V
Macadamia tetraphylla	Rough-shelled bush nut	V
Ochrosia moorei	Southern Ochrosia	E
Owenia cepiodora	Onionwood	V
Phaius australis	Lesser swamp orchid	E
Streblus pendulinus	Siah's backbone	E
Syzygium hodgkinsoniae	Red Lilly Pilly	V
Syzygium moorei	Durobby	V

KEY
E Endangered
V Vulnerable

3.3 Site assessment

3.3.1 Introduction

This section discusses flora species and vegetation on the Subject site and the ecological significance of this vegetation. Site surveys were undertaken on the 15th and 30th April 2014 and focused on areas within the proposed development footprint (Subject site).

The objectives of the site assessment were:

- To identify vegetation communities and flora species present in the area subject to the proposed development.
- To delineate the boundary of any EECs identified within the development footprint.
- To complete targeted searches for significant flora species known from the locality and considered possible occurrences based on an assessment of site habitats.
- To assess potential impacts on site vegetation.

3.3.2 Vegetation Communities

Five vegetation communities were identified within the Subject site and are listed in **TABLE 3** below. Their location and extent across the survey area is shown in **FIGURE 3**. A combined species list for the site which includes all species recorded during the current survey as well as those recorded during previous surveys undertaken by Aspect North (2005) and Melaleuca Group (2013) is included in **APPENDIX C.** The flora species list compiled by Peter Parker as

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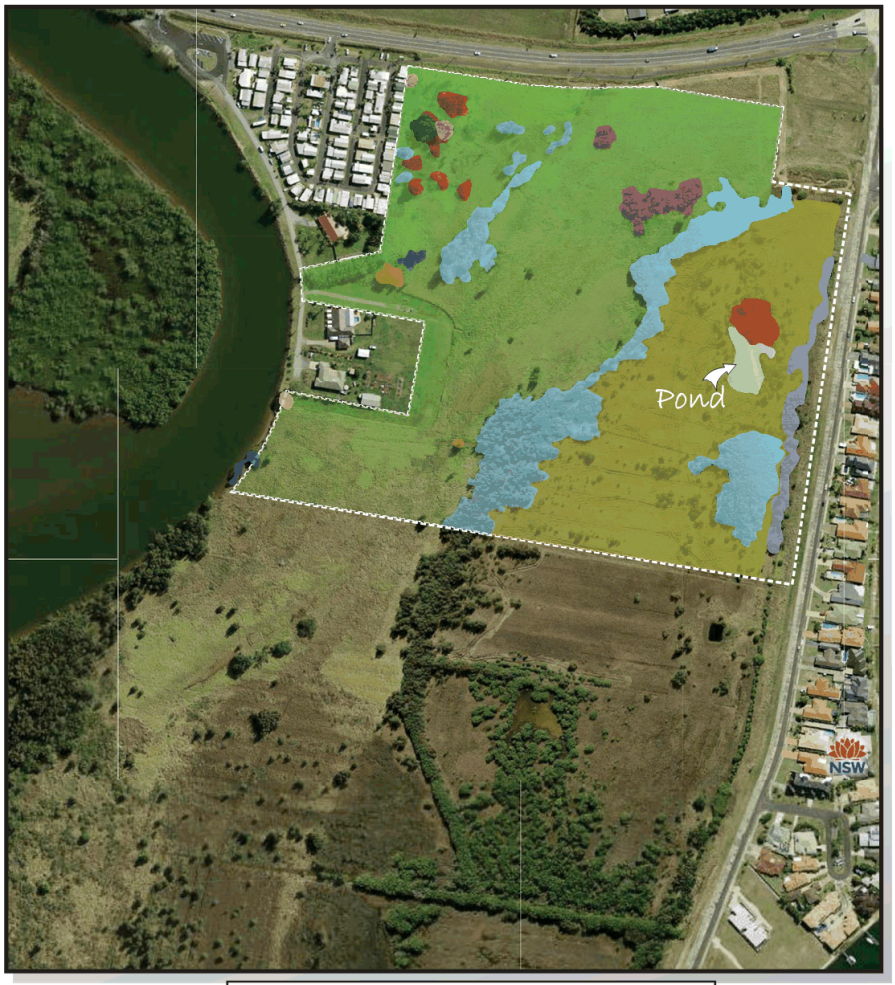

KEY
VEGETATION COMMUNITIES
- Community 1 Swamp oak forest
- Community 2 Open forest (Blackwood wattle)
- Community 3 Mangrove mid-high forest
- Community 4 Tall reedland (*Phragmites australis*) with scattered Swamp oak
- Community 5 Low closed grassland/reedland

ADDITIONAL VEGETATION
- Mangroves and Blackwood wattle along drain
- Forest red gum
- Camphor laurel
- Exotic vegetation (Coral tree/Lantana/Mixed species

NORTH

Metres
0 50 100

Source: SixViewer, accessed 6/5/2014
File: 1409
Drawn by: MF Date: 6/5/2014

Figure 3
VEGETATION COMMUNITIES

part of his Biobanking Assessment report (2012) has not been provided as part of the literature review. A description and photo of each vegetation community is provided below.

TABLE 3
VEGETATION COMMUNITIES WITHIN THE SURVEY AREA

Number	Vegetation Community
1	Swamp oak forest
2	Blackwood wattle woodland
3	Mangrove mid-high forest
4	Tall closed *Phragmites* reedland
5	Low mixed grassland/reedland (grazed/slashed)

3.3.2.1 Community 1 Swamp oak forest

Description and Location

This community describes areas of vegetation where Swamp oak dominates. This is the most common woody vegetation within the Subject site. It comprises mostly young, regrowth Swamp oak with a sparse to absent mid-storey. Common reed is prevalent in patches where the tree canopy is more open or where water inundation is more frequent. The native vine Common silkpod was also prevalent. It occurs as isolated patches or linear strips amongst grassland and reedland communities.

Conservation status

This community forms part of the *Swamp oak floodplain forest of the NSW North Coast, Sydney Basin and South East Corner Bioregions* EEC listed under the TSC Act. This community is generally in poor-moderate condition within the Subject site given it has a patchy distribution, has been highly fragmented and has a young age structure. Exotic species abundance in this community is generally low.

PLATE 1
Areas of Swamp oak forest within the Subject site.

3.3.2.2 Community 2 Blackwood wattle woodland

Description and location

Small isolated and disturbed patches dominated by Blackwood wattle occur, mostly in the northern parts of the Subject site. Coastal morning glory is prevalent within these patches, often smothering the canopy. A number of other weeds are also common within the ground layer.

Conservation status

This community is highly degraded and of minimal conservation value.

PLATE 2
Patches of Blackwood wattle in the northern part of the Subject site.

3.3.2.3 Community 3 Mangrove mid-high forest

Description and location

Linear patches of mangroves occur along constructed drainage channels within the Subject site. This community is more common south of the Subject site within the remainder of Lot 4.

Conservation Status

Mangroves are listed as protected marine vegetation under the NSW Fisheries Management Act 1994. Within the Subject site this community occurs along artificial drainage channels and is fragmented in nature.

3.3.2.4 Community 4 Tall closed *Phragmites* reedland

Description and location

This community describes areas of tall reedland, primarily located within the eastern part of the site. The community is dominated by Common reed (*Phragmites australis*) between 2-3m tall and was inundated by water at the time of the survey. Species diversity within this community is generally low. Other native species recorded include Fringe rush (*Fimbristylis dichotoma*), Saltwater couch (*Sporobolus virginicus*), Swamp ricegrass (*Leersia hexandra*) and *Eleocharis* sp., although these later two species were in relatively low abundance.

Patches of open water were encountered during the transects through this community although no floating or submerged aquatic plants were recorded in these areas.

Conservation Status

This vegetation community is considered to be consistent with the description of Freshwater wetland EEC as defined by the NSW Scientific committee's final determination.

PLATE 3
Tall closed *Phragmites* reedland in the eastern part of the site.

3.3.2.5 Community 5 Low mixed grassland/reedland (grazed/slashed)

Description and location

This community occurs across the majority of the Subject site and includes open areas of grassland/reedland subject to either grazing or regular slashing regimes. Species composition within this community varies greatly across the mapped area with some areas dominated by exotic grasses and others dominated by Common reed and Centella. Species composition is likely to be influenced by degree of inundation, past disturbance and grazing intensity. Common species noted throughout this community include Common reed, Paspalum spp., Setaria, Centella, Hairy commelina, Native commelina, Persicaria spp., Common rush, Fireweed, Cottonbush, Blue billy goat weed and Couch.

Lower areas which are likely subject to longer periods of inundation comprised a higher diversity of native species including River buttercup, White eclipta, *Cyperus* spp., and *Eleocharis acuta*. In general, the abundance of these native species across the community was considered low. Areas subject to less inundation were typically dominated by exotic grasses and herbs. The western portion of this community, adjacent to the caravan park was highly degraded and dominated by the exotics Singapore daisy and Molasses grass.

Conservation Status

This vegetation community is not considered to be consistent with the description of Freshwater wetland EEC as defined by the NSW Scientific committee's final determination. It has an overall low conservation value.

PLATE 4
Low grassland/ reedland across the central portion of the site.

PLATE 5
Low-lying areas of the community subject to longer periods of inundation.

3.3.3 Discussion of threatened flora

No Threatened flora species have been recorded within the Subject site or the southern portions of Lot 4 during any of the previous assessments or the current survey. The majority of Threatened flora species recorded in the NSW Wildlife Atlas (**TABLE 1**) are restricted to rainforest (specifically Littoral rainforest) habitats and are considered unlikely to occur within habitats present in the Subject site. In addition, no Threatened flora species have been recorded within 2km of the Subject site according to the NSW Wildlife Atlas database records.

Given the number of surveys undertaken across the site, the diversity of seasons the surveys were undertaken in and the habitats present within the site it seems highly unlikely that the Subject site (or southern portion of Lot 4) contains any threatened flora species. In addition, the site is not considered to provide suitable habitat for any of the threatened flora species listed in **TABLE 1.**

3.3.4 EECs

Vegetation communities on the Subject site were compared with descriptions of vegetation communities listed as Endangered Ecological Communities under the Threatened Species Conservation Act (1995) and Threatened Ecological Communities under the EPBC Act (1999). This section provides a discussion on the EECs of relevance to this assessment.

Based on this assessment the Subject site is considered to support areas of *Swamp oak floodplain forest* and *Freshwater wetlands on coastal floodplain EEC*. A detailed assessment on this conclusion is provided in Chapter 5.

3.3.5 Noxious Weeds

Ten noxious weeds declared for the Ballina Shire LGA under the *Noxious Weeds Act 1993* have been recorded within the Subject site and the remainder of Lot 4 during the surveys undertaken by Aspect North, Melaleuca and Blackwood Ecology. The status and distribution of these weeds at the site are summarised in **TABLE 4**.

TABLE 4
CONTROL CLASS AND DISTRIBUTION OF NOXIOUS WEEDS RECORDED WITHIN THE SUBJECT SITE

Species	Control Class	Distribution
Camphor laurel	C4 - The growth of the plant must be managed in a manner that reduces its numbers spread and incidence and continuously inhibits its reproduction and the plant must not be sold propagated or knowingly distributed.	Scattered Camphor laurel trees occur across cleared areas of the site.
Lantana	C4 - The growth of the plant must be managed in a manner that reduces its numbers spread and incidence and continuously inhibits its reproduction and the plant must not be sold propagated or knowingly distributed.	Patches of Lantana occur in more disturbed open areas of Swamp oak and Blackwood wattle.
Groundsel	C3 - The plant must be fully and continuously suppressed and destroyed.	Minor infestation through reedland in the eastern part of the Subject site. More predominant south of the Subject site along Burns Point Ferry Road.

Species	Control Class	Distribution
Crofton weed	C4 - The growth of the plant must be managed in a manner that reduces its numbers spread and incidence and continuously inhibits its reproduction.	Uncommon, within the north-western corner of the Subject site.
Ground asparagus	C4 - The plant must not be sold, propagated or knowingly distributed.	Recorded by Aspect North, not observed within the Subject site during the current survey.
Climbing asparagus	C4 - The plant must not be sold, propagated or knowingly distributed.	Recorded in the north-western corner of the Subject site, minor infestation.
Broad-leaf pepper	C3 - The plant must be fully and continuously suppressed and destroyed	Large mature individual in the north-western corner of the Subject site.
Fireweed	C4 - The plant must not be sold, propagated or knowingly distributed	Scattered occurrences throughout paddock areas.
Cockspur coral tree	C4 - The growth of the plant must be managed in a manner that continously inhibits the ability of the plant to spread and the plant must not be sold, propagated or knowingly distributed	Number of mature trees located in the north-western corner of the Subject site.
Cestrum	C3 - The plant must be fully and continuously suppressed and destroyed	Recorded by Aspect North, not observed within the Subject site during the current survey.

4 FAUNA

4.1 Introduction

This section discusses the methods used in the fauna assessment and presents the results of the assessment. Relevant databases were reviewed to identify records of locally occurring Threatened fauna species, populations and communities.

The fauna assessment consisted of:

- A review of relevant databases and literature.
- An assessment of site fauna habitats for both Threatened and non-threatened fauna species. Specific effort was made to assess habitat available on site for those Threatened fauna species previously recorded on site including the Eastern grass owl and Grey-headed flying fox.
- Opportunistic records of fauna species while on site.

Site habitats were assessed in terms of their value for native fauna species on the 15th and 30th of April 2014 in conjunction with the flora survey. Weather for the surveys was overcast with scattered showers. The assessment focused on identifying habitat features associated with Threatened species known from the locality. Particular attention was paid to habitat features such as:

- The presence of mature trees with hollows, fissures and/or other suitable roosting/nesting places.
- Presence of hollow logs/debris and areas of dense leaf litter.
- The presence of preferred Koala food tree species.
- The presence of preferred Glossy black cockatoo feed trees.
- Condition, flow and water quality of drainage lines and bodies of water.
- Areas of dense vegetation.
- Presence of fruiting flora species and blossoming flora species, particularly winter-flowering species.
- Vegetation connectivity and proximity to neighbouring areas of vegetation.
- Presence of caves, hollow trees and/or man-made structures suitable as microchiropteran bat roost sites.

4.2 Database searches

4.2.1 NSW Wildlife Atlas Database search

A search of the NSW Wildlife Atlas database revealed records for 40 Threatened fauna species within 10km of the Subject site. These species are shown in **TABLE 5**.

TABLE 5
NPWS DATABASE RECORDS OF THREATENED FAUNA SPECIES WITHIN 10 KM OF THE SUBJECT SITE

Common name	Scientific name	NSW Status
Albert's Lyrebird	*Menura alberti*	V
Australasian bittern	*Botaurus poiciloptilus*	E
Beach Stone-curlew	*Esacus magnirostris*	E4A

Common name	Scientific name	NSW Status
Black Bittern	*Ixobrychus flavicollis*	V
Black-necked Stork	*Ephippiorhynchus asiaticus*	E1
Black-tailed Godwit	*Limosa limosa*	V
Broad-billed Sandpiper	*Limicola falcinellus*	V
Brolga	*Grus rubicunda*	V
Common Planigale	*Planigale maculata*	V
Curlew Sandpiper	*Calidris ferruginea*	E1
Dugong	*Dugong dugon*	E1
Eastern Bentwing-bat	*Miniopterus schreibersii oceanensis*	V
Eastern Grass Owl	*Tyto longimembris*	V
Eastern Long-eared Bat	*Nyctophilus bifax*	V
Eastern Osprey	*Pandion cristatus*	V
Freckled Duck	*Stictonetta naevosa*	V
Great Knot	*Calidris tenuirostris*	V
Greater Broad-nosed Bat	*Scoteanax rueppellii*	V
Greater Sand-plover	*Charadrius leschenaultii*	V
Grey-headed Flying-fox	*Pteropus poliocephalus*	V
Koala	*Phascolarctos cinereus*	V
Lesser Sand-plover	*Charadrius mongolus*	V
Little Bentwing-bat	*Miniopterus australis*	V
Little Tern	*Sternula albifrons*	E1
Pale-vented Bush-hen	*Amaurornis moluccana*	V
Pied Oystercatcher	*Haematopus longirostris*	E1
Pouched Frog	*Assa darlingtoni*	V
Red Goshawk	*Erythrotriorchis radiatus*	E4A
Red-tailed Tropicbird	*Phaethon rubricauda*	V
Rose-crowned Fruit-Dove	*Ptilinopus regina*	V
Sanderling	*Calidris alba*	V
Shy Albatross	*Thalassarche cauta*	V
Sooty Owl	*Tyto tenebricosa*	V
Sooty Tern	*Onychoprion fuscata*	V
Southern Myotis	*Myotis macropus*	V
Spotted-tailed Quoll	*Dasyurus maculatus*	V
Terek Sandpiper	*Xenus cinereus*	V
Varied Sittella	*Daphoenositta chrysoptera*	V
Wallum Froglet	*Crinia tinnula*	V
Wompoo Fruit-Dove	*Ptilinopus magnificus*	V

KEY

E4A Critically endangered
E1 Endangered
V Vulnerable

4.2.2 Commonwealth EPBC Act (1999) Database search

A search of the Commonwealth EPBC Act (1999) Database revealed potential suitable habitat for a number of Threatened fauna species within 5km of the Subject site. These species are shown in **TABLE 6**. Species restricted to marine environments have not been included in this list.

The Commonwealth EPBC Act Protected Matters Report is included in full in **APPENDIX B**.

TABLE 6
COMMONWEALTH EPBC ACT (1999) DATABASE OF THREATENED FAUNA SPECIES WITH POTENTIAL SUITABLE HABITAT WITHIN 5 KM OF THE SUBJECT SITE

Common Name	Scientific name	Status
Australasian Bittern	*Botaurus poiciloptilus*	E
Australian Painted Snipe	*Rostratula australis*	V
Green and Golden Bell Frog	*Litoria aurea*	V
Grey-headed Flying-fox	*Pteropus poliocephalus*	V
Koala (combined populations of Qld, NSW and ACT)	*Phascolarctos cinereus*	V
Large-eared Pied Bat	*Chalinolobus dwyeri*	V
Long-nosed Potoroo (SE mainland)	*Potorous tridactylus tridactylus*	V
Mitchell's Rainforest Snail	*Thersites micthellae*	CE
New Holland Mouse	*Pseudomys novaehollandiae*	V
Red goshawk	*Erythrotriorchis radiatus*	V
Regent honeyeater	*Anthochaera phrygia*	E
Spotted-tailed Quoll	*Dasyurus maculatus*	V
Swift Parrot	*Lathamus discolor*	E
Wallum sedge frog	*Litoria olongburensis*	V
Water mouse	*Xeromys myoides*	V

KEY
CE Critically endangered
E Endangered
V Vulnerable

4.3 Site assessment

4.3.1 Fauna species observed during the surveys

A small number of fauna species were recorded on the site during the surveys for this review. These species consisted of:

- Marsh snake (recorded adjacent to the site where it had been killed by roadside slashing along River Street)
- Common eastern froglet (*Crinia signifera*)
- Striped marsh frog (*Limnodynastes peronii*)
- Australian white (sacred) ibis
- Straw necked ibis
- Cattle egret
- Whistling kite
- Willy wagtail
- Pied butcherbird

4.3.2 Site habitats

The area subject to the current study generally provides only limited fauna habitat values due to the disturbance history, current grazing practices and relative isolation in the landscape. The southern part of the site supports areas of more advance regrowth and a greater variety of habitat types with areas of mudflat, saltmarsh and mangrove forest. Wet grassland areas may

support a variety of bird species during periods of inundation, including potentially the Black-necked stork and Brolga. Tall reedland habitats may provide habitat for cryptic wetland birds. The potential for the site to provide habitat for Threatened fauna known from the locality is considered in Section 4.3.4.

4.3.3 Wildlife corridors and habitat connectivity

4.3.3.1 Site assessment

The site does not form part of a wildlife corridor or provide significant habitat connectivity for native fauna. Land to the east and north of the area subject to the proposed development consists of cleared and developed land. The southern part of the property provides movement habitat for birds and other mobile species that can cross the Richmond River and Emigrant Creek.

4.3.4 Discussion of Threatened fauna

No Threatened (TSC Act 1995, EPBC Act) fauna species were recorded during the site surveys undertaken by Blackwood Ecological Services. **TABLE 7** provides a list of those Threatened fauna species considered possible occurrences within the Subject site. This list is based upon the habitats available within the Subject site, the database results and previous surveys/assessments undertaken within the Study area. This list is restricted to those species which may occur within the Subject site relevant to this assessment and does not include species which may occur in the southern portion of Lot 4 such as migratory waders and some wetland birds.

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TABLE 7
THREATENED FAUNA SPECIES CONSIDERED POSSIBLE OCCURRENCES WITHIN THE SUBJECT SITE

Species and Status	Habitat preference	Previous records in study area	Discussion of habitats on site
Australasian bittern TSC Act – E EPBC Act –E	Favours permanent freshwater wetlands with tall, dense vegetation, particularly bullrushes (*Typha* spp.) and spikerushes (*Eleocharis* spp.).	NSW wildlife Atlas record from 2012 located in town centre and second record located near Richmond River from 2002.	Possible occurrence in areas of tall dense reedland and sedgeland, particularly in the southern part of the site.
Black bittern TSC Act - V	Inhabits both terrestrial and estuarine wetlands, generally in areas of permanent water and dense vegetation. Where permanent water is present, the species may occur in flooded grassland, forest, woodland, rainforest and mangroves.	One NSW Wildlife Atlas record from 1989 located near Emigrant Creek where the highway crosses.	Possible occurrence in areas dense reedland and sedgeland close to water, particularly in the southern part of the site.
Black-necked stork TSC Act - E	Floodplain wetlands (swamps, billabongs, watercourses and dams) of the major coastal rivers are the key habitat in NSW for the Black-necked Stork. Secondary habitat includes minor floodplains, coastal sandplain wetlands and estuaries.	Two NSW Wildlife Atlas records within the southern part of Lot 4 as well as a number of records within surrounding floodplain habitats along the Richmond River and Emigrant Creek.	Possible occasional occurrence in grassland habitats during periods of inundation as well as on the banks of the river.
Brolga TSC Act – V	Though Brolgas often feed in dry grassland or ploughed paddocks or even desert claypans, they are dependent on wetlands too, especially shallow swamps, where they will forage with their head entirely submerged.	One NSW Wildlife Atlas record from 1997 located on the northern side of River Street directly opposite the Subject site.	Possible occasional occurrence in grassland habitats during periods of inundation.
Eastern bentwing-bat TSC Act – V	Caves are the primary roosting habitat, but also use derelict mines, storm-water tunnels, buildings and other man-made structures. Hunt in forested areas, catching moths and other flying insects above the tree tops.	One NSW Wildlife Atlas record from 2008 located where the highway crosses Emigrant Creek.	No roosting habitat present but may forage over forested areas of the site.
Eastern grass owl TSC Act - V	Eastern Grass Owls are found in areas of tall grass, including grass tussocks, in swampy areas, grassy plains, swampy heath, and in cane grass or sedges on flood plains.	Recorded on site by Aspect North in 2005. Flushed from grassland in the western part of the Subject site.	Areas where this species was recorded in 2005 are now apparently slashed and do not provide suitable habitat. May roost in areas of tall reedland or sedgeland on the site.
Eastern osprey	Favour coastal areas, especially the mouths of large	Numerous records along Emigrant	

Species and Status	Habitat preference	Previous records in study area	Discussion of habitats on site
TSC Act – V	rivers, lagoons and lakes.	Creek and the Richmond River.	
Greater broad-nosed bat TSC Act - V	Utilises a variety of habitats from woodland through to moist and dry eucalypt forest and rainforest, though it is most commonly found in tall wet forest. Although this species usually roosts in tree hollows, it has also been found in buildings.	Noted in Aspect North (2005) as being recorded within or close proximity to the subject site in 1996.	No roosting habitat present but may forage over forested areas of the site.
Grey-headed flying fox TSC Act – V EPBC Act – V	Occur in subtropical and temperate rainforests, tall sclerophyll forests and woodlands, heaths and swamps as well as urban gardens and cultivated fruit crops. Roosting camps are generally located within 20 km of a regular food source and are commonly found in gullies, close to water, in vegetation with a dense canopy.	Recorded by Aspect North (2005) flying over the Subject site. Species was not seen landing within the site.	No Flying-fox camps are located within the Subject site. Swamp oaks in the northern part of the site do not provide a forage resource. May occur in figs and eucalypts in the north-western corner.
Little bentwing-bat TSC Act – V	Little Bentwing-bats roost in caves, tunnels, tree hollows, abandoned mines, stormwater drains, culverts, bridges and sometimes buildings during the day, and at night forage for small insects beneath the canopy of densely vegetated habitats, including moist eucalypt forest, rainforest, vine thicket, wet and dry sclerophyll forest, Melaleuca swamps, dense coastal forests and banksia scrub. Generally found in well-timbered areas.	One NSW Wildlife Atlas record from 2008 located where the highway crosses Emigrant Creek.	No roosting habitat present but may forage over forested areas of the site.
Southern myotis TSC Act - V	Generally roost in groups of 10 - 15 close to water in caves, mine shafts, hollow-bearing trees, stormwater channels, buildings, under bridges and in dense foliage. Forage over streams and pools catching insects and small fish by raking their feet across the water surface.	One NSW Wildlife Atlas record from 2008 located where the highway crosses Emigrant Creek.	No roosting habitat present but may forage over Emigrant Creek and the Richmond River.

5 ENDANGERED ECOLOGICAL COMMUNITIES

5.1.1 Introduction

Vegetation communities on the Subject site were compared with descriptions of vegetation communities listed as Endangered Ecological Communities under the Threatened Species Conservation Act (1995) and Threatened Ecological Communities under the EPBC Act (1999). This section provides a discussion on the EECs of relevance to this assessment.

5.1.2 Freshwater wetlands on coastal floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions

The following provides a background and discussion on the key identifying features and characteristics of a Freshwater wetland EEC according to the NSW Scientific Committee Final Determination (FD). Information in this section has been drawn from the literature review, site surveys and other background information. It also addresses several points raised by Parker (2013) and Melaleuca Group (2013) in their conclusions regarding Freshwater wetland EECs.

5.1.2.1 Landscape position and soil type

The FD states that Freshwater Wetlands EEC is *"associated with periodic or semi-permanent inundation by freshwater, although there may be minor saline influence in some wetlands. They typically occur on silts, muds or humic loams in depressions, flats, drainage lines, backswamps, lagoons and lakes associated with coastal floodplains. Floodplains are level landform patterns on which there may be active erosion and aggradation by channelled and overbank stream flow with an average recurrence interval of 100 years or less"*

The Subject site is located within an estuarine soil landscape identified as the Burns Point Landscape variant (bpa) (Morand 1994). This landscape variant occurs on partly drained extratidal and supratidal flats. Soils of the Burns Point soil landscape are either sand dominated (estuarine/tidal delta sediments) or clay dominated (deltaic sediments). Generally, the sands line channels and the clays are inland, the latter being associated with Littoral (casuarina) forests. Limitations include regular tidal flooding and waterlogging, although the forest (casuarina) zone is noted as rarely flooding or having interrupted or absent drainage.

The western edge of the Subject site adjoins Emigrant Creek which flows into the Richmond River. The Subject site is located on the associated floodplain and is subject to periodic tidal inundation and flooding during heavy rainfall events. However, the poorly drained nature of the soils within the Subject site means that it is often inundated to a certain extent following rainfall events, as it was at the time of the survey.

5.1.2.2 Flora species assemblage/composition

A combined species list of all flora species recorded during the current survey and previous assessments is provided in **APPENDIX C**. This list includes species recorded by Blackwood Ecological Services (2014), Melaleuca Group (2013) and Aspect North (2005). No flora lists compiled by Peter Parker have been provided as part of the literature review. It should be noted that the Blackwood survey was restricted to the Subject site applicable to this assessment, the Melaleuca Group list is restricted to six plots (presumably undertaken within the current Subject site) and the Aspect North list includes species recorded across the entirety of Lot 4.

Those species which are listed in the FD and which were recorded within Lot 4 are highlighted in **APPENDIX C.** A total of 14 species listed in the FD have been recorded across the entire

Lot 4 area. Excluding those species only recorded by Aspect North, a minimum of 9 species listed in the FD occur within the Subject site relevant to this assessment (including both grassland and tall reedland communities). This number (9) is considerably greater than that presented by Peter Parker in his assessment that only one FD listed species occurs (*Phragmites australis*) and is also somewhat higher than the six characteristic species recorded by Melaleuca Group. The majority of these species, with the exception of *Phragmites australis*, *Persicaria* spp., and *Juncus usitatus*, typically occur in low abundance across the Subject site. The FD notes that the number of species and their abundance will be influenced by the "*size of the site, recent rainfall or drought conditions and by its disturbance history*".

Preston CJ in the 2008 court case (Gales Holdings Pty Limited v Tweed Shire Council [2008] NSW LEC 209) concluded that a low number of characteristic species is not sufficient reason to exclude the vegetation community from being the Freshwater wetlands EEC. Based upon the court findings, it can be considered that the number of FD listed species present in a wetland system cannot be utilised as a key determining factor when assigning EEC status.

5.1.2.3 Fauna assemblage

Distinctive fauna species which occur in Freshwater wetlands EEC are listed in paragraph 5 of the FD. Of the species listed, the following have been recorded within the study area:

- Pacific black duck (Aspect North 2005; Peter Parker 1997)
- White-faced heron (Aspect North 2005, Stephen Debus 1997; and Peter Parker 1997).
- Great egret (Stephen Debus 1997)
- Straw-necked ibis (Blackwood Ecology 2014)
- Australian white ibis (Blackwood Ecology 2014)
- Royal spoonbill (Stephen Debus 1997; Aspect North 2005)
- Black-winged stilt (Peter Parker 1997; GH 1998; Stephen Debus 1997)
- Dusky moorhen (Aspect North 2005)
- Purple swamphen (Aspect North 2005)

The FD does not list amphibians at a species level but notes that the Myobatrachidae and Hylidae families are represented. All of the native frog species in the region belong to these two families. The following species have been recorded on the site. All are common in the locality in a variety of habitat types and are not confined to wetland habitats.

- Common eastern froglet (*Crinia signifera*) (Peter Parker 1997; James Warren 1998; Aspect North 2005; Blackwood Ecology 2014)
- Eastern sign-bearing froglet (*Crinia parinsignifera*) (James Warren 1998)
- Striped marsh frog (*Limnodynastes peroni*) (James Warren 1998; Blackwood Ecology 2014)
- Eastern dwarf tree frog (*Litoria fallax*) (Aspect North 2005)

On the two occasions Blackwood Ecology visited the site, a large number of two of the characteristic fauna species - Australian white ibis and Straw-necked ibis - were observed within the Subject site. These birds are likely to be relatively common on the site. Peter Parker concluded that he had not recorded any of the 18 FD listed fauna species during three consecutive seasons in 2012.

5.1.2.4 Composition and structure

The FD states *"the combination of features that distinguish Freshwater Wetlands on Coastal Floodplains from other endangered ecological communities on the coastal floodplains include its scarcity or complete absence of woody plant species and the presence of amphibious, emergent, floating or submerged aquatic forbs, grasses or sedges."*

Phragmites reedland within the Subject site comprises a scarcity of woody plant species (Swamp oak is scattered within this community but is typically restricted to more elevated areas which receive lower levels of inundation) and includes the amphibious Swamp rice-grass. A small number of emergent forbs, grasses and sedges occur within areas of Community 4 and/or 5. No floating or submerged aquatic species were recorded within areas of open standing water during the surveys.

The FD also states *"The composition and structure of the vegetation is also influenced by grazing history, changes to hydrology and soil salinity, catchment runoff and disturbance, and may have a substantial component of exotic grasses and forbs. Artificial wetlands created on previously dry land specifically for purposes such as sewerage treatment, stormwater management and farm production, are not regarded as part of this community, although they may provide habitat for threatened species."*

The Subject site has undergone a number of changes in the past with the creation of drainage channels, clearing for sugar cane farm and more recently cattle grazing. This has influenced the composition and structure of site vegetation leading to an increase in exotic grasses and forbs as well as more disturbance tolerant species such as *Phragmites australis*. Peter Parker's reference to a US study (Whyte *et al.,* 2008) regarding the competitiveness and invasiveness of *Phragmites australis* is not of much relevance. *Phragmites* is a natural component of the wetland system in Old Woman Creek Natural Estuarine Research Reserve and the study found that the increase in *Phragmites* cover was a result of lowering water levels and a change from an open water system to a shallow, water-emergent system which has favoured the spread of *Phragmites*.

Sainty and Jacobs (1988) acknowledge that *Phragmites* is "occasionally a weed in constructed waterways" but also describe *Phragmites* as "an important component of wetland ecosystems".

Peter Parker's statement (point 7) regarding artificial wetlands is not applicable in this case given the Subject site cannot be classified as "*previously dry land*". The type of artificial wetlands created on dry land discussed in the FD refer to sewage treatment ponds, stormwater management detention ponds, farm dams and similar constructions.

5.1.2.5 Weed species

One of the FD listed weeds which is considered characteristic of Freshwater wetlands EEC is Groundsel bush *(Baccharis halimifolia)*. This weed was noted occasionally throughout low-lying areas of the Subject site and is more prevalent in the southern part of Lot 4, particularly along Burns Point Ferry Road. A Weed Control Notice was issued by the Far North Coast County Council in March 2011 to control this Class 3 Noxious Weed within Lot 4. This weed also occurs in other habitat types and is not restricted to wetland conditions.

5.1.3 Swamp oak floodplain forest of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions

Vegetation in Community 1 is consistent with the definition of Swamp Oak Floodplain Forest of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions EEC which is listed under the TSC Act. This community is generally in poor-moderate condition within the

Subject site given it has a patchy distribution, has been highly fragmented and has a young age structure. Exotic species abundance in this community is generally low.

According to the most recent Biobanking assessment undertaken by Peter Parker in June 2013, a total of 0.6ha of Swamp oak Floodplain Forest EEC would require removal as a result of the proposed development. It is proposed to offset this loss through a Biobanking agreement preferably utilising the southern portion of Lot 4.

6 SUMMARY & CONCLUSIONS

6.1 Freshwater wetland EEC

This section discusses the characteristics of the subject site with reference to the NSW Final determination for the Freshwater Wetland EEC as well as the findings of the NSW Land and Environment Court in the Gales Holding Pty Ltd v Tweed Shire Council (2008). This case directly considered the applicability of the Freshwater wetland EEC FD to an area of land in Kingscliff which has some similarities as well as important differences with the Subject site.

The Gales Holding Pty Ltd v Tweed Shire Council (2008) case established that for a community to be a Freshwater wetland EEC it must *"satisfy the edaphic, locational, floristic or structural criteria specified by the Scientific Committee in its final determination."* Preston CJ concludes that in that case the site in Kingscliff did not support an area of Freshwater wetland EEC, with this finding based on several factors, including edaphic, structural and floristic considerations.

It is considered that the Subject site meets the edaphic (soil) and locational criteria discussed in the FD. Melaleuca Group (2013) also reached this conclusion.

The site has apparently not been the subject of a specialist study by a soil scientist. However, Morand (1994) provides a detailed description of the soil landscape on which the site is located. Morand's (1994) description of soils within the Burns Point variant soil landscape, which is an Estuarine derived soil landscape, is consistent with the "silts, muds or humic loams in depressions, flats, drainage lines, backswamps, lagoons and lakes associated with coastal floodplains" described in the FD. Morand (1994) describes the soils within the Burns Point variant soil landscape as sandy clay loams overlaying mottled clays. He also states "sediments eroded from surrounding catchments are often deposited on this soil landscape". It is likely that in this part of the coastal floodplain there is some active erosion and/or aggradation by overbank stream flow during flood events – in either case the FD only specifies that there *may* be active erosion and aggradation during flood events. This is not therefore an absolute requirement.

In contrast, the area considered within the Gales Holding Pty Ltd v Tweed Shire Council (2008) occurred on the Kingscliff (and possibly Pottsville) soil landscapes, which are categorised as Aeolian (wind)-derived soil landscapes according to Morand (1996).

In the Gales Holding Pty Ltd v Tweed Shire Council (2008) case, Preston CJ bases part of his conclusion on the fact that the Kingscliff site does not meet the floristic and structural criteria in the FD as the vegetation does not contain any amphibious, emergent, floating or submerged aquatic forbs, grasses or sedges and the structure of the vegetation community there was not a sedgeland, reedland or herbfield.

Structurally, areas of Community 4 are a reedland, which is considered in Paragraph 1 of the FD to be one of the structural forms of a Freshwater wetland EEC. *Phragmites* is known commonly as Common reed according to the NSW Flora Online, Sainty and Jacobs (1988) and other botanical sources. A reed is defined by the Macquarie dictionary as "the straight stalk of any of various tall grasses, especially of the genera *Phragmites* and *Arundo*, growing in marshy places." The term "reed" is primarily used to describe *Phragmites australis*, although Benson (1992) also uses the term reedland to refer to a community dominated by *Eleocharis sphacelata*. *Phragmites* is

defined as an "emergent aquatic" plant by the NSW Flora online and as an "emergent" by Sainty and Jacobs (1988).

In the context of the Gales Holding Pty Ltd v Tweed Shire Council (2008) findings, areas of Community 4 do meet the requirement that the vegetation community be a "sedgeland, reedland or herbfield" containing some "amphibious, emergent, floating or submerged aquatic forbs, grasses or sedges". Areas of Community 5 are a grassland and do not meet this requirement.

The FD lists flora characteristic of the Freshwater wetland EEC but does not discuss a minimum number of species that are required to be present to form an EEC. The findings of the Gales Holding case established that low number of characteristic species is, by itself, not sufficient reason to exclude a vegetation community from being the Freshwater wetland EEC. In paragraph 93 of his statement, Preston CJ stated that based on the evidence of five characteristic species being present within the area in question "he was not able to find that the low number of characteristic species recorded…is by itself sufficient reason to exclude the vegetation community from being the Freshwater wetlands EEC".

The same number of characteristic species (i.e. 5) has been recorded within Community 4 at the Subject site. It stands to reason that this low number of characteristic species is also not in itself reason to exclude areas of Community 4 from being the Freshwater wetland EEC.

Preston CJ notes for the Kingscliff site that the "present species composition and the structure of the vegetation community are products of the site's past disturbance regime", with aerial photographs demonstrating considerable clearance of the site over many decades. He concludes that "the present species composition and the vegetation structure are artificial constructs and are not true indicators of the natural vegetation community". This is somewhat true too of the current subject site, with aerial photography over time indicating clearance of the original native vegetation cover and construction of drains that have altered the pre-existing hydrological conditions.

Importantly however, Preston CJ considers this in the context of Morand's (1996) description of characteristic vegetation of the Kingscliff and Pottsville soil landscapes which naturally supported woodland, heathland and paperbark forest types – woody vegetation inconsistent with the Freshwater wetlands EEC description. In contrast, Morand (1994) describes the Burns Point Ferry soil landscape as supporting "mangrove open scrub, saltmarsh, herbland and sedgeland and low closed casuarina forest" vegetation types, establishing that vegetation communities that are structurally consistent with the Freshwater wetlands EEC (i.e. herbland and sedgeland) are considered to be naturally occurring on this soil landscape.

It is not entirely clear to what extent prior disturbance and alteration to the landform should be considered in the determination of whether or not a vegetation community meets the criteria of an EEC. Preston CJ based his conclusion on evidence of past disturbance together with Morand's (1996) consideration of naturally occurring forest types and expert evidence that the Kingscliff site was influenced by stormwater runoff and impeded drainage. The FD (in paragraph 2) does allow for the fact that areas of Freshwater wetland EEC may have a disturbance history that includes grazing, flooding, land clearing and pollution in the catchment.

It is considered that the extent (and composition) of any Freshwater wetland on the Burns Point site has changed over time as a result of land clearing and drainage works (as well as other impacts in the catchment) but the site would have originally supported a mosaic of native

vegetation types including Swamp oak forest, mangrove forest, saltmarsh and freshwater wetland.

It is considered that areas of Community 5 do not meet the criteria of the Freshwater wetland EEC. This area does support a higher diversity of characteristic wetland flora species (as listed in the FD) as well as providing habitat for several bird and frog species listed in the FD. However, most of these characteristic flora species are present in very low abundance and occur in areas dominated by exotic grassland. The characteristic fauna species that do occur are common in the area and also commonly occur in pasture grassland, sportsfields and other modified environments. This area is slightly higher elevation than Community 4 and is structurally characterised as a low grassland due to the slashing and grazing history as well as shorter hydroperiod in comparison to Community 4.

It is considered that areas of Community 4 do meet the criteria of the Freshwater wetland EEC although this community represents a relatively poor example of the EEC and has reduced conservation significance due to the disturbance history and low species and structural diversity. This part of the site is lower elevation than areas of Community 5 and supports standing water for some time after extended rainfall. It is dominated almost exclusively by *Phragmites*, although *Fimbristylis dichotoma, Baumea rubiginosa, Eleocharis sp.* and *Leersia hexandra* (all species listed as characteristic species on the FD) occur in very low abundance.

6.2 Conservation significance

The conservation significance of an area of vegetation is a function of its condition as well as its relative rarity in the locality and in a wider context. A highly degraded area of vegetation can take on a greater conservation significance if it is representative of a vegetation type that is naturally rare or has become rare through land clearing or other impacts.

It is considered that the area of the site subject to the proposed development is of low to moderate ecological value and conservation significance. The area has been entirely cleared in the past and now supports patches of Swamp oak forest, wet grassland and areas of regrowth *Phragmites* reedland with low structural and species diversity. This habitat type is relatively widespread in the surrounding area. The site is considered to provide only marginal habitat for threatened fauna species and is unlikely to provide habitat for any threatened flora.

Some patches of Swamp oak and a 60m wide corridor of *Phragmites* reedland with Swamp oak and some mangrove will be retained along the eastern boundary. The southern portion of the property is to be retained with a total of 41.28ha set aside for conservation. This southern part of the site is subject to greater saline influence but does contain areas of *Phragmites* reedland similar to that occurring on the area subject to the proposed development.

If an area of EEC is to be impacted by the proposed development, a Section 5A assessment of significance (7 part test) should be undertaken to determine whether the proposed development is likely to have a significant impact. As part of the Teven Interchange project, Greenloaning Biostudies (2010) completed an assessment of significance for a nearby area of Freshwater wetland EEC at the Teven interchange which is located approximately 1km north-west of the Subject site. The Assessment of Significance undertaken concluded no significant impact, primarily based upon the small impact (0.1674ha) compared with the local extent of Freshwater Wetland EEC in the study area (33.46ha) (Greenloaning Biostudies do not give details on how the extent of Freshwater wetland EEC in the study area was calculated).

Any assessment of significance considering impacts on the area of *Phragmites* reedland on the current site should also consider the local extent of this community type. It stands to reason that if the area of regrowth reedland on the site is considered to meet the criteria of an EEC, then consideration of the local extent of this EEC must also be extended to include similar areas of regrowth or marginal wetland community that meet the locational and edaphic criteria. Protection and embellishment of native vegetation in the southern part of the site will improve conservation values in this part of the site and act to offset any impacts from vegetation loss in the proposed development area.

7 REFERENCES

Aspect North (16 November 2005) Flora and Fauna Assessment, Pacific Highway and Burns Point Ferry Road, West Ballina (Lot 4 DP 537419 on behalf of Ballina Waterways Pty Ltd.)

Benson DH (1992) The natural vegetation of the Penrith 1:100 000 map sheet. *Cunninghamia 2*, 541-596.

BGP Properties Pty Limited v Lake Macquarie City Council (2004) NSWLEC 399 revised - 5th May 2005.

Debus, Stephen (December 1997) Bird Survey of the Burns Point Ferry Road Development Site, Ballina. Report to James Warren and Associates Pty Ltd.

Elliot, M (2008) Grasses of subtropical eastern Australia: An introductory field guide to common grasses – native and introduced. Nullum Publications, Murwillumbah, NSW.

Gales Holding Pty Limited v Tweed Shire Council (2008) NSWLEC 209

Greenloaning Biostudies Pty Ltd (December 2010) Environmental Assessment for the proposed Teven truck stop Rev.4.

James Warren and Associates (1998) Flora and Fauna Assessment for the proposed rezone of land at Burns Point Ferry Road, Ballina. Report to Steel and Associates Pty Ltd.

LandPartners (letter dated 15th April 2008)Re: LEP Request – Ballina Waterways Lot 4 DP 537417, Pacific Highway & Burns Point Ferry Road, West Ballina – Final Vegetation Map.

Melaleuca Group (letter dated 18th October 2013) Re: Rezoning Project – Lot 4 DP 537419 Burns Point Ferry Road, West Ballina: Assessment of the Freshwater Wetlands Endangered Ecological Community.

Morand (1994) Soil landscapes of the Lismore and Ballina 1:100000 Sheet. Department of Land and Water Conservation, Sydney.

Morand (1996) Soil Landscapes of the Murwillumbah–Tweed Heads 1:100 000 Sheet. Department of Land and Water Conservation, Sydney.

NSW Office of Environment and Heritage (undated – based on mapping undertaken 26th November 2013) Biobanking Statement ID 14.

NSW Scientific Committee (2011) Final determination - Freshwater wetlands on coastal floodplains of the NSW North Coast, Sydney Basin and South East Corner bioregions - endangered ecological community listing

Peter Parker Environmental Consultants Pty Ltd (June 1997) An Environmental Assessment of Mariners Point, Lot 4 DP 537419, Ballina Shire. Report for Steel and Associates Pty Ltd.

Parker, P (June 2012) Biobanking Assessment Report for Burns Point Development Proposal, Burns Point Ferry Road, Ballina.

Parker, P (5th June 2013) Biobanking Assessment Report for Burns Point Development Proposal, Burns Point Ferry Road, Ballina. A report to the Office of Environment and Heritage.

Planners North (letter dated 7th June 2013) Re: Planning proposal Burns Point

Romanowski, N (1998) Aquatic and Wetland Plants: A field guide for non-tropical Australia. University of NSW Press Ltd, Sydney.

Rose, H., Rose, C., and Campbell, T (2006) Grasses of the North Coast of NSW. NSW Department of Primary Industries.

Sainty, G.R., and Jacobs, S.W.L (1988) Waterplants in Australia. Australian Water Resources Council.

Stephens, K.M., and Dowling, R.M (2002) Wetland Plants of Queensland: A field guide. CSIRO Publishing, Collingwood, VIC.

Whyte, R.S., Trexel-Kroll, D., Klarer, D.M., Shields, R., and Francko, D.A. (2008) The invasion and Spread of *Phragmites australis* during a Period of Low Water in a Lake Erie Coastal Wetland. *Journal of Coastal Research, 55*, 111-120.

APPENDIX A

PLANNING PROPOSAL

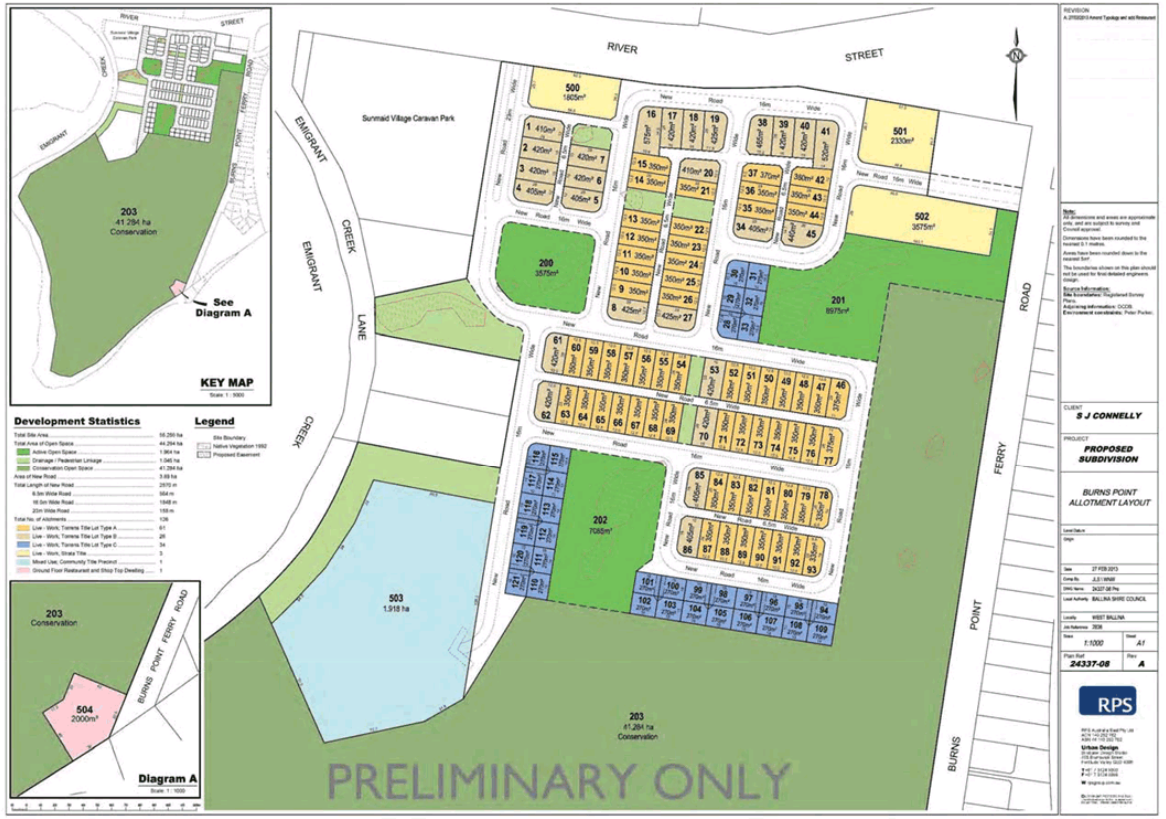

Fig. 3: Preliminary concept plan

APPENDIX B

COMMONWEALTH EPBC DATABASE PROTECTED MATTERS SEARCH RESULTS

Australian Government
Department of the Environment

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.

Information is available about Environment Assessments and the EPBC Act including significance guidelines, forms and application process details.

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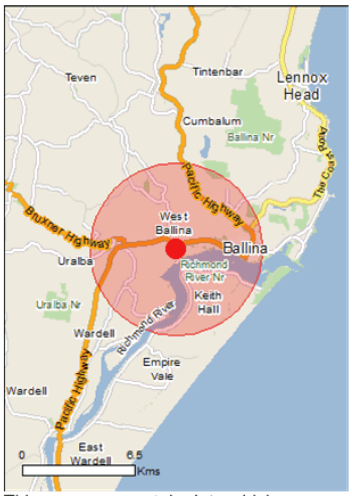

This map may contain data which are ©Commonwealth of Australia (Geoscience Australia), ©PSMA 2010

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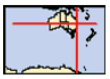

Summary

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.

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance:	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Areas:	None
Listed Threatened Ecological Communities:	1
Listed Threatened Species:	54
Listed Migratory Species:	60

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.

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.

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.

Commonwealth Land:	2
Commonwealth Heritage Places:	None
Listed Marine Species:	68
Whales and Other Cetaceans:	1
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Commonwealth Reserves Marine	None

Extra Information

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

Place on the RNE:	5
State and Territory Reserves:	1
Regional Forest Agreements:	1
Invasive Species:	40
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

Listed Threatened Ecological Communities [Resource Information]

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.

Name	Status	Type of Presence
Lowland Rainforest of Subtropical Australia	Critically Endangered	Community likely to occur within area

Listed Threatened Species [Resource Information]

Name	Status	Type of Presence
Birds		
Anthochaera phrygia Regent Honeyeater [82338]	Endangered	Species or species habitat likely to occur within area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area
Diomedea epomophora epomophora Southern Royal Albatross [25996]	Vulnerable	Species or species habitat may occur within area
Diomedea exulans antipodensis Antipodean Albatross [82269]	Vulnerable	Species or species habitat may occur within area
Diomedea exulans exulans Tristan Albatross [82337]	Endangered	Species or species habitat may occur within area
Diomedea exulans gibsoni Gibson's Albatross [82271]	Vulnerable	Species or species habitat may occur within area
Diomedea exulans (sensu lato) Wandering Albatross [1073]	Vulnerable	Species or species habitat may occur within area
Erythrotriorchis radiatus Red Goshawk [942]	Vulnerable	Species or species

Name	Status	Type of Presence
		habitat known to occur within area
Lathamus discolor Swift Parrot [744]	Endangered	Species or species habitat likely to occur within area
Macronectes giganteus Southern Giant-Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant-Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area
Thalassarche cauta cauta Shy Albatross, Tasmanian Shy Albatross [82345]	Vulnerable	Species or species habitat may occur within area
Thalassarche cauta salvini Salvin's Albatross [82343]	Vulnerable	Species or species habitat may occur within area
Thalassarche cauta steadi White-capped Albatross [82344]	Vulnerable	Species or species habitat likely to occur within area
Thalassarche eremita Chatham Albatross [64457]	Endangered	Species or species habitat may occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris impavida Campbell Albatross [82449]	Vulnerable	Species or species habitat may occur within area
Fish		
Epinephelus daemelii Black Rockcod, Black Cod, Saddled Rockcod [68449]	Vulnerable	Species or species habitat likely to occur within area
Frogs		
Litoria aurea Green and Golden Bell Frog [1870]	Vulnerable	Species or species habitat may occur within area
Litoria olongburensis Wallum Sedge Frog [1821]	Vulnerable	Species or species habitat likely to occur within area
Mammals		
Chalinolobus dwyeri Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat may occur within area
Dasyurus maculatus maculatus (SE mainland population) Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat likely to occur within area
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT) Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Vulnerable	Species or species habitat known to occur within area
Potorous tridactylus tridactylus Long-nosed Potoroo (SE mainland) [66645]	Vulnerable	Species or species habitat may occur within area

Name	Status	Type of Presence
Pseudomys novaehollandiae New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat likely to occur within area
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Xeromys myoides Water Mouse, False Water Rat, Yirrkoo [66]	Vulnerable	Species or species habitat likely to occur within area
Other		
Thersites mitchellae Mitchell's Rainforest Snail [66774]	Critically Endangered	Species or species habitat may occur within area
Plants		
Acronychia littoralis Scented Acronychia [8582]	Endangered	Species or species habitat likely to occur within area
Allocasuarina defungens Dwarf Heath Casuarina [21924]	Endangered	Species or species habitat likely to occur within area
Arthraxon hispidus Hairy-joint Grass [9338]	Vulnerable	Species or species habitat known to occur within area
Baloghia marmorata Marbled Balogia, Jointed Baloghia [8463]	Vulnerable	Species or species habitat may occur within area
Bulbophyllum globuliforme Miniature Moss-orchid, Hoop Pine Orchid [6649]	Vulnerable	Species or species habitat may occur within area
Cryptocarya foetida Stinking Cryptocarya, Stinking Laurel [11976]	Vulnerable	Species or species habitat likely to occur within area
Cryptostylis hunteriana Leafless Tongue-orchid [19533]	Vulnerable	Species or species habitat may occur within area
Davidsonia jerseyana Davidson's Plum [67219]	Endangered	Species or species habitat may occur within area
Davidsonia johnsonii Smooth Davidsonia, Smooth Davidson's Plum, Small-leaved Davidson's Plum [67178]	Endangered	Species or species habitat likely to occur within area
Desmodium acanthocladum Thorny Pea [17972]	Vulnerable	Species or species habitat likely to occur within area
Diploglottis campbellii Small-leaved Tamarind [21484]	Endangered	Species or species habitat likely to occur within area
Floydia praealta Ball Nut, Possum Nut, Big Nut, Beefwood [15762]	Vulnerable	Species or species habitat likely to occur within area
Gossia fragrantissima Sweet Myrtle, Small-leaved Myrtle [78867]	Endangered	Species or species habitat likely to occur within area
Macadamia tetraphylla Rough-shelled Bush Nut, Macadamia Nut, Rough-shelled Macadamia, Rough-leaved Queensland	Vulnerable	Species or species habitat likely to occur

Name	Status	Type of Presence
Nut [6581]		within area
Ochrosia moorei		
Southern Ochrosia [11350]	Endangered	Species or species habitat likely to occur within area
Owenia cepiodora		
Onionwood, Bog Onion, Onion Cedar [11344]	Vulnerable	Species or species habitat likely to occur within area
Phaius australis		
Lesser Swamp-orchid [5872]	Endangered	Species or species habitat likely to occur within area
Streblus pendulinus		
Siah's Backbone, Sia's Backbone, Isaac Wood [21618]	Endangered	Species or species habitat likely to occur within area
Syzygium hodgkinsoniae		
Smooth-bark Rose Apple, Red Lilly Pilly [3539]	Vulnerable	Species or species habitat likely to occur within area
Syzygium moorei		
Rose Apple, Coolamon, Robby, Durobby, Watermelon Tree, Coolamon Rose Apple [12284]	Vulnerable	Species or species habitat likely to occur within area
Reptiles		
Caretta caretta		
Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area
Chelonia mydas		
Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Dermochelys coriacea		
Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area
Eretmochelys imbricata		
Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area
Natator depressus		
Flatback Turtle [59257]	Vulnerable	Species or species habitat known to occur within area

Listed Migratory Species		[Resource Information]
* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.		
Name	Threatened	Type of Presence
Migratory Marine Birds		
Apus pacificus		
Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Diomedea antipodensis		
Antipodean Albatross [64458]	Vulnerable*	Species or species habitat may occur within area
Diomedea dabbenena		
Tristan Albatross [66471]	Endangered*	Species or species habitat may occur within area
Diomedea epomophora (sensu stricto)		
Southern Royal Albatross [1072]	Vulnerable*	Species or species habitat may occur within area
Diomedea exulans (sensu lato)		
Wandering Albatross [1073]	Vulnerable	Species or species habitat may occur within area

Name	Threatened	Type of Presence
Diomedea gibsoni		
Gibson's Albatross [64466]	Vulnerable*	Species or species habitat may occur within area
Macronectes giganteus		
Southern Giant-Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli		
Northern Giant-Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Puffinus carneipes		
Flesh-footed Shearwater, Fleshy-footed Shearwater [1043]		Species or species habitat likely to occur within area
Sterna albifrons		
Little Tern [813]		Species or species habitat may occur within area
Thalassarche cauta (sensu stricto)		
Shy Albatross, Tasmanian Shy Albatross [64697]	Vulnerable*	Species or species habitat may occur within area
Thalassarche eremita		
Chatham Albatross [64457]	Endangered	Species or species habitat may occur within area
Thalassarche impavida		
Campbell Albatross [64459]	Vulnerable*	Species or species habitat may occur within area
Thalassarche melanophris		
Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Thalassarche salvini		
Salvin's Albatross [64463]	Vulnerable*	Species or species habitat may occur within area
Thalassarche steadi		
White-capped Albatross [64462]	Vulnerable*	Species or species habitat likely to occur within area
Migratory Marine Species		
Caretta caretta		
Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area
Chelonia mydas		
Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Dermochelys coriacea		
Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area
Dugong dugon		
Dugong [28]		Species or species habitat may occur within area
Eretmochelys imbricata		
Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area
Lamna nasus		
Porbeagle, Mackerel Shark [83288]		Species or species habitat may occur within area
Manta birostris		
Giant Manta Ray, Chevron Manta Ray, Pacific Manta Ray, Pelagic Manta Ray, Oceanic Manta Ray [84995]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
Natator depressus		
Flatback Turtle [59257]	Vulnerable	Species or species habitat known to occur within area
Sousa chinensis		
Indo-Pacific Humpback Dolphin [50]		Species or species habitat likely to occur within area
Migratory Terrestrial Species		
Haliaeetus leucogaster		
White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area
Hirundapus caudacutus		
White-throated Needletail [682]		Species or species habitat known to occur within area
Merops ornatus		
Rainbow Bee-eater [670]		Species or species habitat may occur within area
Monarcha melanopsis		
Black-faced Monarch [609]		Species or species habitat known to occur within area
Monarcha trivirgatus		
Spectacled Monarch [610]		Species or species habitat known to occur within area
Myiagra cyanoleuca		
Satin Flycatcher [612]		Species or species habitat known to occur within area
Rhipidura rufifrons		
Rufous Fantail [592]		Species or species habitat known to occur within area
Migratory Wetlands Species		
Actitis hypoleucos		
Common Sandpiper [59309]		Roosting known to occur within area
Ardea alba		
Great Egret, White Egret [59541]		Breeding known to occur within area
Ardea ibis		
Cattle Egret [59542]		Species or species habitat likely to occur within area
Arenaria interpres		
Ruddy Turnstone [872]		Roosting known to occur within area
Calidris acuminata		
Sharp-tailed Sandpiper [874]		Roosting known to occur within area
Calidris alba		
Sanderling [875]		Roosting known to occur within area
Calidris canutus		
Red Knot, Knot [855]		Roosting known to occur within area
Calidris ferruginea		
Curlew Sandpiper [856]		Roosting known to occur within area
Calidris ruficollis		
Red-necked Stint [860]		Roosting known to occur within area
Calidris tenuirostris		
Great Knot [862]		Roosting known to occur within area
Charadrius bicinctus		
Double-banded Plover [895]		Roosting known to occur within area

Name	Threatened	Type of Presence
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]		Roosting known to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]		Roosting known to occur within area
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Roosting known to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Roosting known to occur within area
Heteroscelus brevipes Grey-tailed Tattler [59311]		Roosting known to occur within area
Limicola falcinellus Broad-billed Sandpiper [842]		Roosting known to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Roosting known to occur within area
Limosa limosa Black-tailed Godwit [845]		Roosting known to occur within area
Numenius madagascariensis Eastern Curlew [847]		Roosting known to occur within area
Numenius minutus Little Curlew, Little Whimbrel [848]		Roosting known to occur within area
Numenius phaeopus Whimbrel [849]		Roosting known to occur within area
Pluvialis fulva Pacific Golden Plover [25545]		Roosting known to occur within area
Pluvialis squatarola Grey Plover [865]		Roosting known to occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Endangered*	Species or species habitat likely to occur within area
Tringa glareola Wood Sandpiper [829]		Roosting known to occur within area
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Roosting known to occur within area
Xenus cinereus Terek Sandpiper [59300]		Roosting known to occur within area

Other Matters Protected by the EPBC Act

Commonwealth Land	[Resource Information]

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Name
Commonwealth Land - Director of War Service Homes
Commonwealth Land - Telstra Corporation Limited

Listed Marine Species	[Resource Information]

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Birds		

Name	Threatened	Type of Presence
Actitis hypoleucos Common Sandpiper [59309]		Roosting known to occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea alba Great Egret, White Egret [59541]		Breeding known to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat likely to occur within area
Arenaria interpres Ruddy Turnstone [872]		Roosting known to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Roosting known to occur within area
Calidris alba Sanderling [875]		Roosting known to occur within area
Calidris canutus Red Knot, Knot [855]		Roosting known to occur within area
Calidris ferruginea Curlew Sandpiper [856]		Roosting known to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Roosting known to occur within area
Calidris ruficollis Red-necked Stint [860]		Roosting known to occur within area
Calidris subminuta Long-toed Stint [861]		Roosting known to occur within area
Calidris tenuirostris Great Knot [862]		Roosting known to occur within area
Charadrius bicinctus Double-banded Plover [895]		Roosting known to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]		Roosting known to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]		Roosting known to occur within area
Charadrius ruficapillus Red-capped Plover [881]		Roosting known to occur within area
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Roosting known to occur within area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable*	Species or species habitat may occur within area
Diomedea dabbenena Tristan Albatross [66471]	Endangered*	Species or species habitat may occur within area
Diomedea epomophora (sensu stricto) Southern Royal Albatross [1072]	Vulnerable*	Species or species habitat may occur within area
Diomedea exulans (sensu lato) Wandering Albatross [1073]	Vulnerable	Species or species habitat may occur within area

Name	Threatened	Type of Presence
Diomedea gibsoni Gibson's Albatross [64466]	Vulnerable*	Species or species habitat may occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Roosting known to occur within area
Gallinago megala Swinhoe's Snipe [864]		Roosting likely to occur within area
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area
Heteroscelus brevipes Grey-tailed Tattler [59311]		Roosting known to occur within area
Heteroscelus incanus Wandering Tattler [59547]		Roosting known to occur within area
Himantopus himantopus Black-winged Stilt [870]		Roosting known to occur within area
Hirundapus caudacutus White-throated Needletail [682]		Species or species habitat known to occur within area
Lathamus discolor Swift Parrot [744]	Endangered	Species or species habitat likely to occur within area
Limicola falcinellus Broad-billed Sandpiper [842]		Roosting known to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Roosting known to occur within area
Limosa limosa Black-tailed Godwit [845]		Roosting known to occur within area
Macronectes giganteus Southern Giant-Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant-Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area
Monarcha trivirgatus Spectacled Monarch [610]		Species or species habitat known to occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew [847]		Roosting known to occur within area
Numenius minutus Little Curlew, Little Whimbrel [848]		Roosting known to occur within area

Name	Threatened	Type of Presence
Numenius phaeopus		
Whimbrel [849]		Roosting known to occur within area
Pandion haliaetus		
Osprey [952]		Breeding known to occur within area
Philomachus pugnax		
Ruff (Reeve) [850]		Roosting known to occur within area
Pluvialis fulva		
Pacific Golden Plover [25545]		Roosting known to occur within area
Pluvialis squatarola		
Grey Plover [865]		Roosting known to occur within area
Puffinus carneipes		
Flesh-footed Shearwater, Fleshy-footed Shearwater [1043]		Species or species habitat likely to occur within area
Rhipidura rufifrons		
Rufous Fantail [592]		Species or species habitat known to occur within area
Rostratula benghalensis (sensu lato)		
Painted Snipe [889]	Endangered*	Species or species habitat likely to occur within area
Sterna albifrons		
Little Tern [813]		Species or species habitat may occur within area
Thalassarche cauta (sensu stricto)		
Shy Albatross, Tasmanian Shy Albatross [64697]	Vulnerable*	Species or species habitat may occur within area
Thalassarche eremita		
Chatham Albatross [64457]	Endangered	Species or species habitat may occur within area
Thalassarche impavida		
Campbell Albatross [64459]	Vulnerable*	Species or species habitat may occur within area
Thalassarche melanophris		
Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Thalassarche salvini		
Salvin's Albatross [64463]	Vulnerable*	Species or species habitat may occur within area
Thalassarche steadi		
White-capped Albatross [64462]	Vulnerable*	Species or species habitat likely to occur within area
Thinornis rubricollis		
Hooded Plover [59510]		Roosting known to occur within area
Tringa glareola		
Wood Sandpiper [829]		Roosting known to occur within area
Tringa stagnatilis		
Marsh Sandpiper, Little Greenshank [833]		Roosting known to occur within area
Xenus cinereus		
Terek Sandpiper [59300]		Roosting known to occur within area
Mammals		
Dugong dugon		
Dugong [28]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
Reptiles		
Caretta caretta		
Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area
Chelonia mydas		
Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Dermochelys coriacea		
Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area
Eretmochelys imbricata		
Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area
Natator depressus		
Flatback Turtle [59257]	Vulnerable	Species or species habitat known to occur within area

Whales and other Cetaceans [Resource Information]

Name	Status	Type of Presence
Mammals		
Sousa chinensis		
Indo-Pacific Humpback Dolphin [50]		Species or species habitat likely to occur within area

Extra Information

Places on the RNE [Resource Information]

Note that not all Indigenous sites may be listed.

Name	State	Status
Historic		
House Including Front Fence	NSW	Indicative Place
Ballina Courthouse	NSW	Registered
Ballina Post Office	NSW	Registered
Ballina Post Office Group	NSW	Registered
Brundah Including Garden, Fence, Adjacent Footpaths, Norfolk Isl	NSW	Registered

State and Territory Reserves [Resource Information]

Name	State
Richmond River	NSW

Regional Forest Agreements [Resource Information]

Note that all areas with completed RFAs have been included.

Name	State
North East NSW RFA	New South Wales

Invasive Species [Resource Information]

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resouces Audit, 2001.

Name	Status	Type of Presence
Birds		
Acridotheres tristis		
Common Myna, Indian Myna [387]		Species or species habitat likely to occur

Name	Status	Type of Presence
		within area
Anas platyrhynchos Mallard [974]		Species or species habitat likely to occur within area
Carduelis carduelis European Goldfinch [403]		Species or species habitat likely to occur within area
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Lonchura punctulata Nutmeg Mannikin [399]		Species or species habitat likely to occur within area
Passer domesticus House Sparrow [405]		Species or species habitat likely to occur within area
Pycnonotus jocosus Red-whiskered Bulbul [631]		Species or species habitat likely to occur within area
Streptopelia chinensis Spotted Turtle-Dove [780]		Species or species habitat likely to occur within area
Sturnus vulgaris Common Starling [389]		Species or species habitat likely to occur within area
Frogs		
Bufo marinus Cane Toad [1772]		Species or species habitat likely to occur within area
Rhinella marina Cane Toad [83218]		Species or species habitat likely to occur within area
Mammals		
Bos taurus Domestic Cattle [16]		Species or species habitat likely to occur within area
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Feral deer Feral deer species in Australia [85733]		Species or species habitat likely to occur within area
Lepus capensis Brown Hare [127]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Rattus norvegicus Brown Rat, Norway Rat [83]		Species or species

Name	Status	Type of Presence
		habitat likely to occur within area
Rattus rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
Sus scrofa Pig [6]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
Alternanthera philoxeroides Alligator Weed [11620]		Species or species habitat likely to occur within area
Anredera cordifolia Madeira Vine, Jalap, Lamb's-tail, Mignonette Vine, Anredera, Gulf Madeiravine, Heartleaf Madeiravine, Potato Vine [2643]		Species or species habitat likely to occur within area
Asparagus aethiopicus Asparagus Fern, Ground Asparagus, Basket Fern, Sprengi's Fern, Bushy Asparagus, Emerald Asparagus [62425]		Species or species habitat likely to occur within area
Asparagus plumosus Climbing Asparagus-fern [48993]		Species or species habitat likely to occur within area
Cabomba caroliniana Cabomba, Fanwort, Carolina Watershield, Fish Grass, Washington Grass, Watershield, Carolina Fanwort, Common Cabomba [5171]		Species or species habitat likely to occur within area
Chrysanthemoides monilifera Bitou Bush, Boneseed [18983]		Species or species habitat likely to occur within area
Chrysanthemoides monilifera subsp. rotundata Bitou Bush [16332]		Species or species habitat likely to occur within area
Eichhornia crassipes Water Hyacinth, Water Orchid, Nile Lily [13466]		Species or species habitat likely to occur within area
Genista sp. X Genista monspessulana Broom [67538]		Species or species habitat may occur within area
Hymenachne amplexicaulis Hymenachne, Olive Hymenachne, Water Stargrass, West Indian Grass, West Indian Marsh Grass [31754]		Species or species habitat likely to occur within area
Lantana camara Lantana, Common Lantana, Kamara Lantana, Large-leaf Lantana, Pink Flowered Lantana, Red Flowered Lantana, Red-Flowered Sage, White Sage, Wild Sage [10892]		Species or species habitat likely to occur within area
Opuntia spp. Prickly Pears [82753]		Species or species habitat likely to occur within area
Pinus radiata Radiata Pine Monterey Pine, Insignis Pine, Wilding Pine [20780]		Species or species habitat may occur within area
Protasparagus plumosus Climbing Asparagus-fern, Ferny Asparagus [11747]		Species or species habitat likely to occur within area

Name	Status	Type of Presence
Rubus fruticosus aggregate		
Blackberry, European Blackberry [68406]		Species or species habitat likely to occur within area
Salvinia molesta		
Salvinia, Giant Salvinia, Aquarium Watermoss, Kariba Weed [13665]		Species or species habitat likely to occur within area
Senecio madagascariensis		
Fireweed, Madagascar Ragwort, Madagascar Groundsel [2624]		Species or species habitat likely to occur within area
Reptiles		
Hemidactylus frenatus		
Asian House Gecko [1708]		Species or species habitat likely to occur within area

Coordinates

-28.86719 153.52586

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 following provisions of the EPBC Act have been mapped:

- migratory and
- marine

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
- 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.

Acknowledgements

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

-Department of Environment, Climate Change and Water, New South Wales
-Department of Sustainability and Environment, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment and Natural Resources, South Australia
-Parks and Wildlife Service NT, NT Dept of Natural Resources, Environment and the Arts
-Environmental and Resource Management, Queensland
-Department of Environment and Conservation, Western Australia
-Department of the Environment, Climate Change, Energy and Water
-Birds Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-SA Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-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
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
-State Forests of NSW
-Geoscience Australia
-CSIRO
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact Us page.

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BLACKWOOD ECOLOGICAL SERVICES

APPENDIX C

FLORA SPECIES LIST

Combined Flora species list
Lot 4 DP537419 Burns Point Ferry Road, West Ballina, NSW

The following table presents a list of all flora species recorded during surveys undertaken by Blackwood Ecology in 2014, Melaleuca Group in 2013 and Aspect North in 2005. No flora lists compiled by Peter Parker have been provided as part of the assessment. It should be noted that the Blackwood survey was restricted to the Subject site applicable to this assessment, the Melaleuca Group list is restricted to four plots (presumably undertaken within the current Subject site) and the Aspect North list includes species recorded across the entirety of Lot 4.

Where uncertainty exists due to the unavailability of reproductive material, the taxon is preceded by a question mark, or plants are identified to genus level only. Botanical nomenclature follows G.J. Harden (ed) (1990-2002) Flora of New South Wales, UNSW Press, except where recent changes have occurred.

Notes:

*	Denotes an introduced species as well as non-local native species.
BOLD	Species listed on the Final Determination for Freshwater wetland EEC

Noxious weeds declared for the Ballina Shire Council control area under the *Noxious Weeds Act 1993* are indicated with a 'N' followed by their control class:

(3) Regionally controlled weeds
(4) Locally controlled weeds
(5) Restricted plants

BLACKWOOD ECOLOGICAL SERVICES

Family	Botanical Name	Common Name	Blackwood Ecology	Melaleuca	Aspect North	Noxious Weed Class	Notes
Ferns and Fern Allies							
Aspleniaceae	*Asplenium australasicum*	Bird's nest fern			X		
Blechnaceae	*Acrostichum speciosum*	Mangrove fern			X		
	Blechnum indicum	Swamp water fern			X		
Dennstaedtiaceae	*Hypolepis muelleri*	Harsh ground fern			X		
	Pteridium esculentum	Bracken fern	X	X	X		
Polypodiaceae	*Platycerium bifurcatum*	Elkhorn fern			X		
Thelypteridaceae	*Cyclosorus interruptus*				X		
Monocotyledons							
Amaryllidaceae	*Crinum pedunculatum*	Swamp lily	X				
Arecaceae	*Syagrus romanzoffiana**	Cocos palm	X				
Asparagaceae	*Asparagus aethiopicus**	Ground asparagus fern			X	N4	
	*Asparagus plumosus**	Climbing asparagus fern	X			N4	
Commelinaceae	*Commelina benghalensis**	Hairy commelina	X				
	Commelina cyanea	Native commelina	X		X		
Cyperaceae	***Baumea articulata***	**Curly wigs**			**X**		FD listed species
	Baumea rubiginosa			**X**			FD listed species
	*Cyperus brevifolius**	Mullumbimby couch	X	X			
	Cyperus exaltatus				X		
	Cyperus polystachyos	Bunchy sedge	X	X			
	Cyperus sp.			X			
	Eleocharis acuta		**X**	**X**			FD listed species
	Fimbristylis dichotoma	**Fringe rush**	**X**				FD listed species
	Fimbristylis sp.			X			identification to species level not provided, may be *F. dichotoma* which is listed in the FD.
	Schoenoplectus mucronatus				**X**		FD listed species

Family	Botanical Name	Common Name	Blackwood Ecology	Melaleuca	Aspect North	Noxious Weed Class	Notes
Juncaceae	*Juncus kraussii*	Salt rush	X		X		
	Juncus usitatus	**Common rush**	**X**	**X**	**X**		FD listed species
Poaceae	*Axonopus affinus*	Narrow leafed carpet grass			X		
	*Chloris gayana**	Rhodes grass	X	X	X		
	Cynodon dactylon	Couch grass	X	X	X		
	Eleusine indica	Crowsfoot grass			X		
	Imperata cylindrica	Blady grass			X		
	Isachne globosa	Swamp millet	X				
	Leersia hexandra	**Swamp ricegrass**	**X**	**X**	**X**		FD listed species
	*Melinis minutiflora**	Molasses grass	X		X		
	*Paspalum dilatatum**	Paspalum	X		X		
	Paspalum distichum	**Water couch**	**X**		**X**		FD listed species
	Paspalum virginatum	Salt couch			X		
	*Paspalum wettsteinii**				X		
	*Pennisetum clandestinum**	Kikuyu	X		X		
	Phragmites australis	***Phragmites***	**X**	**X**	**X**		FD listed species
	*Setaria sphacelata**	Setaria	X	X	X		
	Sporobolus virginicus	Saltwater couch	X	X	X		
	*Stenotaphrum secundatum**	Buffalo grass			X		
Smilacaceae	*Smilax australis*	Austral sarsparilla			X		
Typhaceae	***Typha orientalis***	**Broad-leaved cumbungi**			**X**		FD listed species
Dicotyledons							
Aizoaceae	*Tetragonia tetragonoides*	New Zealand spinach			X		
Amaranthaceae	*Alternanthera denticulata**	Lesser Joyweed	X	X			
Anacardiaceae	*Mangifera indica**	Mango			X		
	*Schinus terebinthifolia**	Broad-leaf pepper tree	X		X	N3	
Apiaceae	*Centella asiatica*	Centella	X	X			
	*Hydrocotyle bonariensis**	Pennywort			X		
Apocynaceae	*Parsonsia straminea*	Common silkpod	X		X		
Araliaceae	*Schefflera actinophylla**	Umbrella tree	X		X		
Asclepiadaceae	*Araujia sericifera**	Moth vine	X				

Family	Botanical Name	Common Name	Blackwood Ecology	Melaleuca	Aspect North	Noxious Weed Class	Notes
	*Asclepias curassavica**	Redhead cotton bush	X	X	X		
	*Gomphocarpus physocarpus**	Balloon cotton bush	X		X		
Asteraceae	*Ageratina adenophora**	Crofton weed	X			N4	
	*Ageratum conyzoides**	Goatweed		X			
	*Ageratum houstonianum**	Blue billygoat weed	X		X		
	Aster sp.				X		
	*Baccharis halimifolia**	Groundsel	X	X	X	N3	
	*Bidens pilosa**	Cobblers pegs	X	X	X		
	*Cirsium vulgare**	Spear Thistle	X	X	X		
	*Conyza bonariensis**	Flaxleaf fleabane	X	X			
	*Crassocephalum crepidioides**	Thickhead		X			
	Eclipta prostrata	**White eclipta**	**X**				FD listed species
	*Senecio madagascariensis**	Fireweed	X	X	X	N4	
	*Sphagneticola trilobata**	Singapore daisy	X				
	Tagetes minuta	Stinking roger	X				
Avicenniaceae	*Avicennia marina* var *australasica*	Grey mangrove	X		X		
Bignoniaceae	*Pandorea pandorana*	Wonga vine			X		
Caesalpinioideae	*Senna pendula* var. *glabrata**	Senna			X		
Caprifoliaceae	*Lonicera japonica**	Japanese honeysuckle	X				
Caryophyllaceae	*Drymaria cordata**	Tropical chickweed		X			
Casuarinaceae	*Casuarina glauca*	Swamp oak	X		X		
Chenopodiaceae	*Einadia hastata*	Berry saltbush			X		
	Sarcocornia quinqueflora				X		
	Suaeda australis	Seablite			X		
Convolvulaceae	*Ipomoea cairica**	Coastal morning glory	X	X	X		
	*Ipomoea purpurea**	Common morning glory			X		
Fabaceae	*Aeschynomene indica*	Budda pea	X				
	Desmodium sp.*		X				
	*Desmodium uncinatum**	Silver-leaved desmodium	X				
	*Erythrina crista-galli**	Cockspur coral tree	X		X	N4	

Family	Botanical Name	Common Name	Blackwood Ecology	Melaleuca	Aspect North	Noxious Weed Class	Notes
	Glycine sp.		X	X			
	*Trifolium repens**	White clover	X				
Lamiaceae	*Plectranthus parviflorus*	Cockspur Flower		X			
Lauraceae	*Cinnamomum camphora**	Camphor laurel	X		X	N4	
	Cryptocarya triplinervis	Three-veined cryptocarya	X				
Loranthaceae	*Amyema cambagei*	A mistletoe			X		
Luzuriagaceae	*Geitonoplesium cymosum*	Scrambling lily	X		X		
Lythraceae	*Cuphea carthagenensis**	Cuphea	X				
Malvaceae	*Hibiscus diversifolius*	Swamp hibiscus			X		
	*Sida rhombifolia**	Paddy's lucerne	X		X		
Mimosaceae	*Acacia longifolia subsp. sophorae*	Coastal wattle			X		
	Acacia melanoxylon	Blackwood wattle	X		X		
Moraceae	*Ficus coronata*	Creek sandpaper fig			X		
	Ficus obliqua	Small-leaf fig	X		X		
	Ficus virens	White fig			X		
	Maclura cochinchinensis	Cockspur	X		X		
	*Morus alba**	Mulberry	X				
Musaceae	*Musa paradisiac**	Banana	X				
Myoporaceae	*Myoporum acuminatum*	Mangrove boobialla			X		
Myrsinaceae	*Aegiceras corniculatum*	River mangrove	X		X		
Myrtaceae	*Callistemon salignus*	Willow bottlebrush			X		
	Eucalyptus robusta	Swamp mahogany			X		
	Eucalyptus tereticornis	Forest red gum	X		X		
	Gossia dulcis	Midgenberry			X		
	Lophostemon suaveolens	Swamp turpentine			X		
	Melaleuca quinquenervia	Broad-leaved paperbark			X		
	Melaleuca styphelioides	Prickly-leaved teatree			X		
Onagraceae	*Ludwigia octovalvis*	Willow primrose	X		X		
Oxalidaceae	*Oxalis* sp.				X		
Passifloraceae	*Passiflora aurantia* var. *aurantia*	Blunt-leaved passionfruit			X		
	*Passiflora suberosa**	Corky passionfruit			X		

Family	Botanical Name	Common Name	Blackwood Ecology	Melaleuca	Aspect North	Noxious Weed Class	Notes
	*Passiflora subpeltata**	White passionflower	X				
Phytolacaceae	*Phytolacca octandra**	Inkweed	X				
Polygonaceae	***Persicaria decipiens***	**Slender knotweed**	**X**				FD listed species
	Persicaria lapathifolia	**Pale knotweed**			**X**		FD listed species
	Persicaria sp.	Smartweed		X			identification to species level not provided
	Persicaria strigosa	**Smartweed**			**X**		FD listed species
	Rumex sp.*				X		
Ranunculaceae	*Ranunculus inundatus*	River buttercup	X				
Rhamnaceae	*Alphitonia excelsa*	Red ash			X		
Sapindaceae	*Cupaniopsis anacardioides*	Tuckeroo	X		X		
	Jagera pseudorhus	Foambark			X		
Solanaceae	*Cestrum nocturnum**	Cestrum			X	N3	
	*Solanum dulcumara**	Climbing nightshade	X				
	*Solanum mauritianum**	Wild tobacco tree	X		X		
	*Solanum nigrum**	Black-berry nightshade	X	X	X		
	*Solanum seaforthianum**	Brazilian nightshade			X		
Sterculiaceae	*Commersonia bartramia*	Brown kurrajong			X		
Thymelaeaceae	*Wikstroemia indica*	Wikstromeia			X		
Verbenaceae	*Lantana camara**	Lantana	X		X	N4	
	*Verbena bonariensis**	Purple top	X	X			
Violaceae	*Viola hederacea* subsp. *hederaceae*	Native violet			X		
Viscaceae	*Notothixos subaureus*	Golden mistletoe			X		

Planning Proposal

July 2014

Burns Point Ferry Road

Lot 4 DP 537419

Burns Point Ferry Road & River Street, West Ballina

14/43792 Gateway

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Planning Proposal – July 2014
Burns Point Ferry Road, West Ballina

INTRODUCTION

Summary of Planning Proposal

This planning proposal relates to a large parcel of land with an area of approximately 56.6 hectares at the western edge of the Ballina urban area. The land is described as Lot 4 DP 537419 and is bounded in the east by Burns Point Ferry Road, in the north by River Street, in the west by Emigrant Creek and in the south by the Richmond River. The land is contiguous with the existing residential areas of West Ballina and has an extensive history of land use proposals. The location of the subject land is illustrated in Figure 1.

The land is subject to the provisions of both the *Ballina Local Environmental Plan 1987* (BLEP 1987) and the *Ballina Local Environmental Plan 2012* (BLEP 2012). The northern section of the site is subject to the provisions of the BLEP 2012 and is zoned RU2 Rural Landscape. The residue of the site has been deferred from the BLEP 2012 as a result of the exclusion of environmental protection zones from the plan by the State Government. As a result, this residue area is subject to the BLEP 1987 and is zoned 1(d) Rural (Urban Investigation) under the provisions of that plan. The current zoning configuration of the site and surrounds is illustrated in Figure 2

The planning proposal seeks to amend the BLEP 2012 to apply suitable zoning and associated land use control provisions to enable the development of part of the land for urban purposes generally in accordance with the concept plan in Figure 3. This plan seeks to enable development for the purposes of employment and residential land uses. The precise zoning configuration and associated planning provisions are to be determined as part of the detailed assessment of the planning proposal through an environmental study process. It is proposed that the residue of the site (currently subject to the BLEP 1987) will be added to the BLEP 2012 and zoned RU2. It is anticipated that this part of the site will be set aside for environmental protection and enhancement in conjunction with a voluntary planning agreement between Council and the proponent to achieve required ecological offsets.

Figure 1 – Locality Map

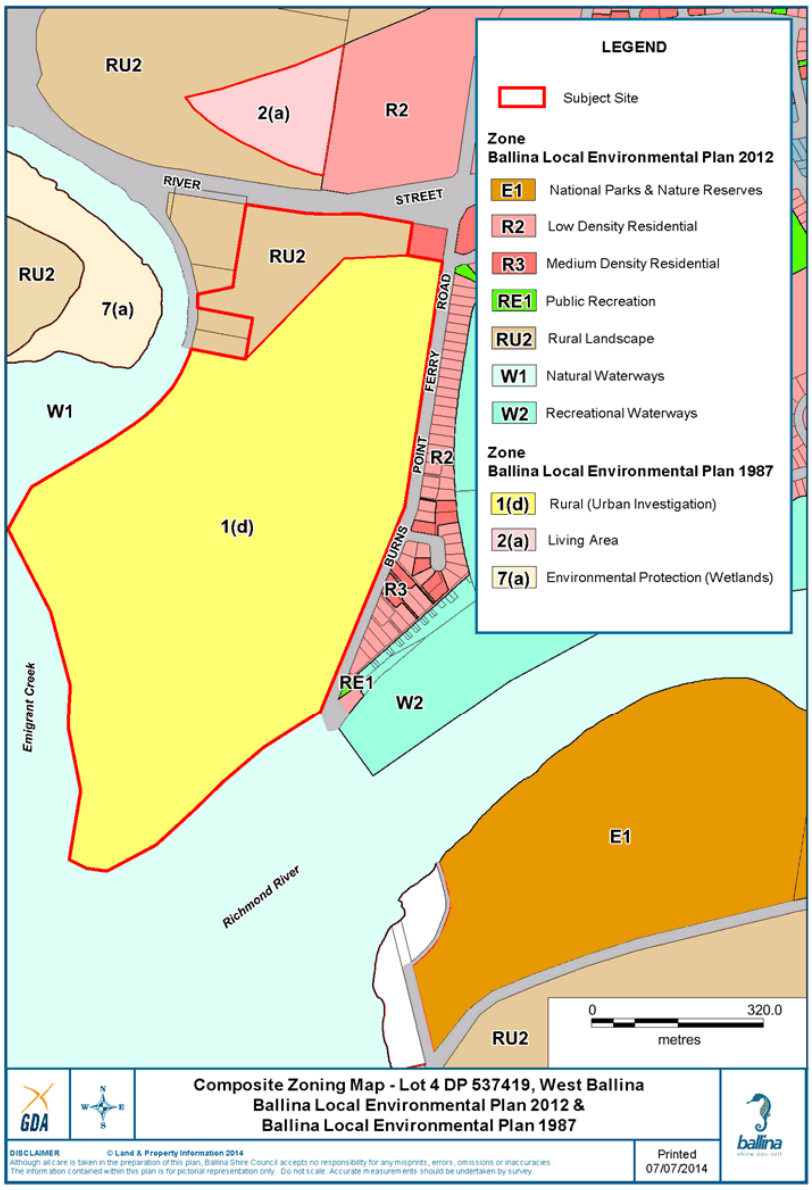

Figure 2 – Current Zoning Map

Figure 3 – Proposed Development Footprint

Planning Context

Planning History

The subject site has an extensive history of land use proposals. The most recent consideration for development of parts of the site for urban land uses is the result of the submission to Council of a request to amend the *Ballina Local Environmental Plan 2012* (BLEP 2012) based on the concept plan in Figure 3. This request was submitted to Council in July 2012 and has been considered by the Council several times to date. Copies of the originally submitted documentation to support the LEP amendment request are available under separate cover.

Council's initial consideration of the current proposal was in June 2013 where further consideration of the matter was deferred for six months to enable the following:

- confirmation of the nature and suitability of the proposed biobanking scheme on the site,
- the undertaking of an independent ecological assessment of the site, and
- the receipt of further advice from the Department of Planning in relation to the potential use of environmental protection zones.

The Council further considered the matter in January 2014. Sufficient information had been provided by this time to satisfy the Council's request in relation to the proposed biobanking scheme. The matters relating to the ecological assessment and possible application of environmental protection zones had not been satisfied at this time. It was resolved to continue with the processing of the proposal subject to the completion of the ecological assessment by 30 May.

With the agreement of the proponent, Council engaged Blackwood Ecological Services (Blackwood) to undertake the ecological assessment of the site. Blackwood's final report was provided to Council in May 2013 clarifying the qualities and values of the ecology of the northern part of the site subject to the majority of the urban land uses in the LEP amendment proposal. This planning proposal has been drafted in consideration of the findings and recommendations of the Blackwood report (a copy of the report is available under separate cover).

At the time of preparation of this planning proposal, it is apparent that the current situation relating to the application of environmental protection zones in the BLEP 2012 will remain unresolved for the immediate future. With this in mind, alternative proposals are being considered to achieve the desired environmental protection outcomes for the site.

Ballina Local Environmental Plan 2012

The provisions of the *Ballina Local Environmental Plan* 2012 (BLEP 2012) apply to part of the subject site as detailed in Figure 2. Under the BLEP 2012, the affected part of the site is zoned RU2 Rural Landscape and is subject to a minimum lot size of 40 hectares. This proposal seeks to rezone this part of the site to facilitate employment related and residential land uses as detailed in the concept plan (Figure 3). In conjunction, it is also sought to apply an appropriate minimum lot size to the part of the site rezoned for urban purposes. The final zoning configuration and associated planning provisions are be determined as part of the detailed assessment of the proposal.

The deferral of environmental protection zones from the finalised BLEP 2012 has resulted in part of the site remaining subject to the provisions of the BLEP 1987.

Ballina Local Environmental Plan 1987

The provisions of the *Ballina Local Environmental Plan 1987* (BLEP 1987) apply to part of the site as detailed in Figure 2. It is proposed to apply a mixture of urban and environmental uses land zoned 1(d) Rural (Urban Investigation) under the BLEP 1987.

It is proposed as part of this planning proposal to integrate the entire site under the provisions of the BLEP 2012. Areas currently subject to the BLEP 1987 1(d) zone not proposed for urban land uses will be transferred to the RU2 Rural Landscape zone (or other suitable non-urban zone) in accordance with the provisions of the BLEP 2012.

Ballina Shire Growth Management Strategy 2012

The Ballina Shire Growth Management Strategy 2012 (GMS) provides the strategic planning context for urban development in Ballina Shire. The GMS identifies part of the site (the area zoned RU2 under the BLEP 2012) as a strategic growth area. Part of the area proposed for urban development is outside the identified strategic growth area identified in the GMS. This part of the site is identified as containing vegetation having high conservation value.

Should the proposal to rezone the land to enable urban land uses on the site proceed to fruition, it will result in inconsistencies with the GMS. The expanded urban footprint beyond the identified strategic urban growth area is generally consistent with the State Government's Far North Coast Regional Strategy as they apply to this locality.

The proposed expanded urban footprint will affect the area broadly identified in the GMS as having vegetation of high conservation value. This aspect will be considered further as part of the detailed assessment of this proposal and in light of an independent ecological assessment completed by Blackwood Ecological Services in May 2014.

The proponent has also committed in principle to entering a voluntary planning agreement in relation to the proposal for the purposes of addressing the ecological restoration and offsets required as part of the future urban development of the site. In this regard, it is considered that the ecological enhancements to the residue of the site may result in positive outcomes despite the inconsistencies with the GMS.

PART 1 – OBJECTIVES & INTENDED OUTCOMES

The objective of this planning proposal is to provide for the development of part of the site for urban land uses and to recognise the environmental attributes of the land. Specifically, the proponent intends to apply zoning and planning provisions to enable the use of parts of the site for employment and residential land uses and to apply a suitable zoning to areas of the site identified for management of the natural environment.

PART 2 – EXPLANATION OF THE PROPOSAL

The proposal seeks to apply a regime of land use zoning and planning provisions to enable employment related, residential and environmental land uses uses as well as associated open space and infrastructure. At the southeastern corner of the site, at the end of Burns Point Ferry Road, it is proposed to create a special lot zoned to enable a restaurant use.

The residue of the site is to be retained within a suitable non-urban zone and may be subject to the provisions of a voluntary planning agreement in relation to ecological restoration and protection.

In conjunction with the amendments to the current land use zoning of the site, appropriate minimum lot size provisions will be applied through amendments to the Lot Size Map. It is generally expected that minimum lot size provisions will be applied across the site to reflect the intended land use outcomes.

It is also proposed that land rezoned for urban purposes identified as being not suitable for urban land uses would be removed from the Strategic Growth Areas Map under the BLEP 2012.

The proposal will also result in the amendment to the Land Application Map due to expected adjustments to the area currently deferred from the BLEP 2012.

Importantly, the outcomes sought by this proposal may be achieved other than zoning, dependent on the outcomes of the planned environmental study process and the refinement of a suitable land use suite for the land.

PART 3 – JUSTIFICATION

Section A - Need for the Planning Proposal

1. Is the planning proposal a result of any strategic study or report?

As detailed above, part of the subject site is identified in the Ballina Shire Growth Management Strategy as a strategic urban growth area. The urban footprint proposed extends beyond this growth area. In the circumstances this inconsistency is considered acceptable for the purposes of progressing to a more detailed site

assessment and having regard for the potential delivery of environmental outcomes for the residue of the site. The entire site is identified in the Far North Coast Regional Strategy as a future urban area.

2. **Is the planning proposal the best means of achieving the objectives or intended outcomes, or is there a better way?**

The planning proposal is considered to be an appropriate means of securing the intended development outcomes for the land. An LEP amendment is required to enable urban uses of part of the land.

Section B - Relationship to the Strategic Planning Framework

3. **Is the planning proposal consistent with the objectives and actions contained within the applicable regional or sub-regional strategy (including the Sydney Metropolitan Strategy and exhibited draft strategies)?**

The proposal is consistent with the Far North Coast Regional Strategy (FNCRS), which provides the regional framework for the consideration of policy development and the overall vision of the future. The proposal is not in conflict with the outcomes or actions of the strategy.

4. **Is the planning proposal consistent with the local Council's Community Strategic Plan, or other local strategic plans?**

As identified above, the proposal will result in an inconsistency with the provisions of the Ballina Shire Growth Management Strategy. Given the potential for the overall outcomes for the site to be positive, the further assessment to be undertaken and the consistency of the proposal with the Far North Coast Regional Strategy, it is considered appropriate for the proposal to proceed at this stage.

5. **Is the planning proposal consistent with applicable State Environmental Planning Policies?**

The proposal is generally consistent with applicable State Environmental Planning Policies (SEPPs). Further consideration of SEPPs will be undertaken in conjunction with the detailed site investigations required prior to public exhibition.

6. **Is the planning proposal consistent with the applicable Ministerial Directions (S. 117 directions)?**

The proposal is consistent with the relevant Section 117 Directions. A Section 117 Direction checklist for the planning proposal is contained in Appendix A.

Section C - Environmental, Social and Economic Impact

7. **Is there any likelihood that critical habitat or threatened species, populations or ecological communities, or their habitats will be adversely affected as a result of the proposal?**

Ecological assessments have been undertaken for the northern part of the site which identifies the presence of several endangered ecological communities on the site. These assessments have provided the indication that parts of the site may be suitable for urban development without significant environmental impacts or with appropriate compensation and ecological restoration outcomes. While some of the

identified endangered ecological communities are present within the proposed urban development footprint, it is proposed to address the offsetting of the loss of these communities through a biobanking scheme and voluntary planning agreement. Further details as to the likely specific environmental impacts of the proposal will be considered in detail prior to the public exhibition of the planning proposal.

8. Are there any other likely environmental effects as a result of the planning proposals and how are they proposed to be managed?

A number of environmental assessments will be required to support the planning proposal, should the planning proposal receive affirmative Gateway determination. These environmental assessments include the following:

- Ecological / flora & fauna assessment;
- Acid sulfate soils assessment;
- Land contamination assessment;
- Geotechnical assessment;
- Stormwater impact assessment;
- Entomological assessment (mosquitoes);
- Bushfire hazard assessment; and
- Archaeological / cultural heritage assessment.

The potential impacts associated with filling the site for the purpose of flooding mitigation has been assessed as part of Council's floodplain management planning process, undertaken in accordance with the floodplain management manual. This broader assessment will support the planning proposal should the rezoning receive affirmative Gateway determination. Further flood assessment may be required depending on the outcomes of more detailed consideration of the land.

9. How has the planning proposal adequately addressed any social and economic effects?

The social and economic impacts of the proposal will be considered in greater detail as part of the detailed assessment prior to public exhibition. In general, it is considered that positive social and economic benefits will result from the proposal as a result of additional and diversified urban land use options for Ballina.

Section D - State and Commonwealth interests.

10. Is there adequate public infrastructure for the planning proposal?

The planning proposal does not create the need for any additional public infrastructure and is expected to be serviceable by existing infrastructure in the vicinity of the site.

11. What are the views of State and Commonwealth public authorities consulted in accordance with the gateway determination?

Consultation will be undertaken with relevant agencies during the public exhibition stage of the LEP amendment in accordance with the requirements of the Gateway determination.

PART 4 – MAPPING

Subject to the detailed assessment of the site through an environmental study process, it is expected that the following maps will be finalised prior to public exhibition:

- Land Application Map,
- Lot Size Map,
- Land Zoning Map, and
- Strategic Urban Growth Area Map.

PART 5 – COMMUNITY CONSULTATION

It is proposed that community consultation will be undertaken for this planning proposal in accordance with the Gateway determination and the terms of the Environmental Planning and Assessment Act 1979.

PART 6 – TIMELINE

The proposed timeline for completion of the planning proposal is as follows:

Plan Making Step	Estimated Completion (Before)
Gateway Determination	August 2014
Government Agency Consultation	September 2014
Public Exhibition Period	February 2015
Public Hearing	N/A
Submissions Assessment	March 2015
RPA Assessment of Planning Proposal and Exhibition Outcomes	April 2015
Submission of Endorsed LEP to P&I for Finalisation	July 2015
RPA Decision to Make the LEP Amendment (if delegated)	July 2015
Forwarding of LEP Amendment to P&I for Notification (if delegated)	July 2015

APPENDICES

Appendix A – Section 117 Direction Checklist

Section 117 Direction Checklist Planning Proposal Lot 4 DP 537419 Burns Point Ferry Road, West Ballina	
Direction No.	**Compliance of Planning Proposal**
1. Employment and Resources	
1.1 Business and Industrial Zones	Consistent. The planning proposal seeks to expand the supply of industrial and commercial zoned land. The proposed new employment areas are generally consistent with the Ballina Shire Growth Management Strategy, approved by the Director-General of the Department of Planning & Infrastructure (May 2013). The site is also identified as future employment land in the Far North Coast Regional Strategy.
1.2 Rural Zones	Consistent. The planning proposal proposes to rezone rural land for a mix of employment and residential purposes. The proposed new employment areas are generally consistent with the Ballina Shire Growth Management Strategy, approved by the Director-General of the Department of Planning & Infrastructure (May 2013). The site is also identified as future employment land in the Far North Coast Regional Strategy.
1.3 Mining, Petroleum Production and Extractive Industries	Does not apply to planning proposal.
1.4 Oyster Aquaculture	Does not apply to planning proposal.
1.5 Rural Land	Consistent. The planning proposal proposes to rezone rural land to enable a mix of employment and residential land uses. The proposed new employment areas are generally consistent with Ballina Shire Growth Management Strategy, approved by the Director-General of the Department of Planning & Infrastructure (May 2013). The site is also identified as future employment land in the Far North Coast Regional Strategy.
2. Environment and Heritage	
2.1 Environmental Protection Zones	Consistent. The planning proposal seeks to facilitate the protection of the environment with appropriate mechanisms to be determined through an environmental study process.
2.2 Coastal Protection	Consistent. The subject land is located within the NSW Coastal Zone. The proposed new employment areas are consistent with the Ballina Shire Growth Management Strategy, approved by the Director-General of the Department of Planning & Infrastructure (May 2013). The site is also identified as future employment land in the Far North Coast Regional Strategy.
2.3 Heritage Conservation	Consistent. Further consideration of the cultural heritage and archaeological values of the site will be considered as part of the detailed assessment of the proposal. Appropriate provisions will be implemented should any items of heritage significance be identified on the site
2.4 Recreation Vehicle Areas	Consistent. Recreational vehicle areas are not proposed.
3. Housing, Infrastructure and Urban Development	
3.1 Residential Zones	Consistent. The subject site is contiguous with land zoned for residential purposes. The proposal seeks to facilitate residential development that comprises live-work options that will diversify the housing types and needs in the Ballina locality.

3.2 Caravan Parks and Manufactured Home Estates	Consistent. The subject land does not contain an existing caravan park or manufactured home estate. The planning proposal does not seek to make direct provision for caravan parks or manufactured home estates. The proposed rezoning is generally consistent with the Ballina Shire Growth Management Strategy, approved by the Director-General of the Department of Planning & Infrastructure (May 2013). The site is also identified as future employment land in the Far North Coast Regional Strategy.
3.3 Home Occupations	Consistent.
3.4 Integrated Land Use and Transport	Consistent. In the further assessment of the proposal, it is anticipated that consideration will be given to the accessibility and transport options for any proposed residential, industrial and/or business areas considered for the site.
3.5 Development Near Licensed Aerodromes	Does not apply to planning proposal.
3.6 Shooting Ranges	Does not apply to planning proposal.
4. Hazard and Risk	
4.1 Acid Sulphate Soils	Consistent. The subject site is identified as being affected by acid sulphate soils. The hazard and risk to the future development of the site from acid sulphate soils will be considered further in the detailed assessment of the proposal subject to Gateway determination and prior to public exhibition and finalisation.
4.2 Mine Subsidence and Unstable Land	Does not apply to planning proposal.
4.3 Flood Prone Land	Consistent. The subject site is identified as being flood prone. The hazard and risk to the future development of the site having regard to flood mitigation and impacts will be considered further in the detailed assessment of the proposal subject to Gateway determination and prior to public exhibition and finalisation.
4.4 Planning for Bushfire Protection	Does not apply to planning proposal.
5. Regional Planning	
5.1 Implementation of Regional Strategies	Consistent. The subject land is contained within the urban footprint identified in the strategy.
5.2 Sydney Drinking Water Catchments	Does not apply to Ballina Shire.
5.3 Farmland of State and Regional Significance on the NSW Far North Coast	Does not apply to planning proposal.
5.4 Commercial and Retail Development	Does not apply to planning proposal.
5.5 Development in the vicinity of Ellalong Paxton and Millfield (Cessnock LGA).	Repealed
5.6 Sydney to Canberra Corridor (Revoked 10 July 2008. See amended Direction 5.1	Repealed
5.7 Central Coast (Revoked 10 July 2008. See amended Direction 5.1)	Repealed
5.8 Second Sydney Airport: Badgerys Creek	Does not apply to Ballina Shire
6. Local Plan Making	
6.1 Approval and Referral Requirements	Consistent. The planning proposal does not introduce any new concurrence or consultation provisions or any additional designated development types.

6.2 Reserving Land for Public Purposes	Consistent. The subject site does not currently comprise any land zoned or reserved for public purposes. It is anticipated that any public open space and other land to be dedicated for public purposes as part of the proposal will be considered as part of the further assessment of the proposal including suitable mechanisms to facilitate their dedication.
6.3 Site Specific Provisions	Does not apply to planning proposal.
7. Metropolitan Planning	
7.1 Implementation of the Metropolitan Strategy	Does not apply to Ballina Shire.