Deferred Sites
Draft Planning Proposal
Amended October 2018

Millingandi and Tura Beach ('Mandeni')

Bega Valley Local Environmental Plan 2013

bega valley shire council

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Background

The purpose of this Planning Proposal is to amend the BVLEP 2013 by deleting reference to "Deferred Matters" and recommending re-zonings and revised minimum lot sizes (MLS') within the BVLEP 2013.

Part 1 – Objectives or Intended Outcomes

This Planning Proposal will have the following outcomes;

a) **Site 1 - 2529 Princes Highway, Millingandi**

That the land be re-zoned **E3 and E2 with a 7ha minimum lot size**.

b) **Site 2 –Mandeni , Sapphire Coast Drive, Tura Beach**

That the land be zoned and lot sized **E4 (1ha), RU2 (120ha) and E2 (no lot size).**

Part 2 – Explanation of the Provisions

This Planning Proposal seeks to amend the BVLEP 2013 to re-zone lands considered a deferred matter (DM) under the BVLEP 2013.

The proposal will delete the Deferred Matters and then amend the BVLEP 2013 by applying zonings in the following manner:

Site 1 - Lot 721 DP 826975, 2529 Princes Highway, Millingandi

- Amend map sheet LAP_001 by deleting DM Deferred Matter.
- Amend map sheet LZN_020 by applying E3 Environmental Management
- Amend map sheet LZN_020 by applying E2 Environmental Conservation
- Amend map sheet LSZ_020 by applying AA2 7 Hectares
- Amend map sheet LZN_020B by applying E3 Environmental Management
- Amend map sheet LZN_020B by applying E2 Environmental Conservation
- Amend map sheet LSZ_020B by applying AA2 7 Hectares

Site 2 - Lot 471 and Lot 472 DP 1043030, Sapphire Coast Drive, Tura Beach (Mandeni)

- Amend map sheet LAP_001 by deleting DM Deferred Matter.
- Amend map sheet LZN_020C by applying E2 Environmental Conservation (no MLS), RU2 Rural Landscape and E4 Environmental Living
- Amend map sheet LSZ_ 020C by applying AD 120 Ha to RU2 Rural Landscape and Y 1 Ha to E4 Environmental Living.

Part 3 – Justification

Site 1 - Lot 721 DP 826975, 2529 Princes Hwy, Millingandi (16.5 Ha)

Key Outcome: 1 additional lot

Current Zoning LEP 2002

1 (a) Rural General Zone (MLS 120 Ha)

7 (b) Environment Protection

Proposed Zoning

E3 Environmental Management (MLS 7 Ha)

E2 Environmental Conservation (no MLS)

Background and History

This site covers an area of 16.5 Ha on the western side of Merimbula Lake adjacent to Millingandi Creek.

In 2010 as part of the Draft CLEP public exhibition process, the site was exhibited with an E3 zoning and a 120ha minimum lot size, which would prevent any further subdivision.

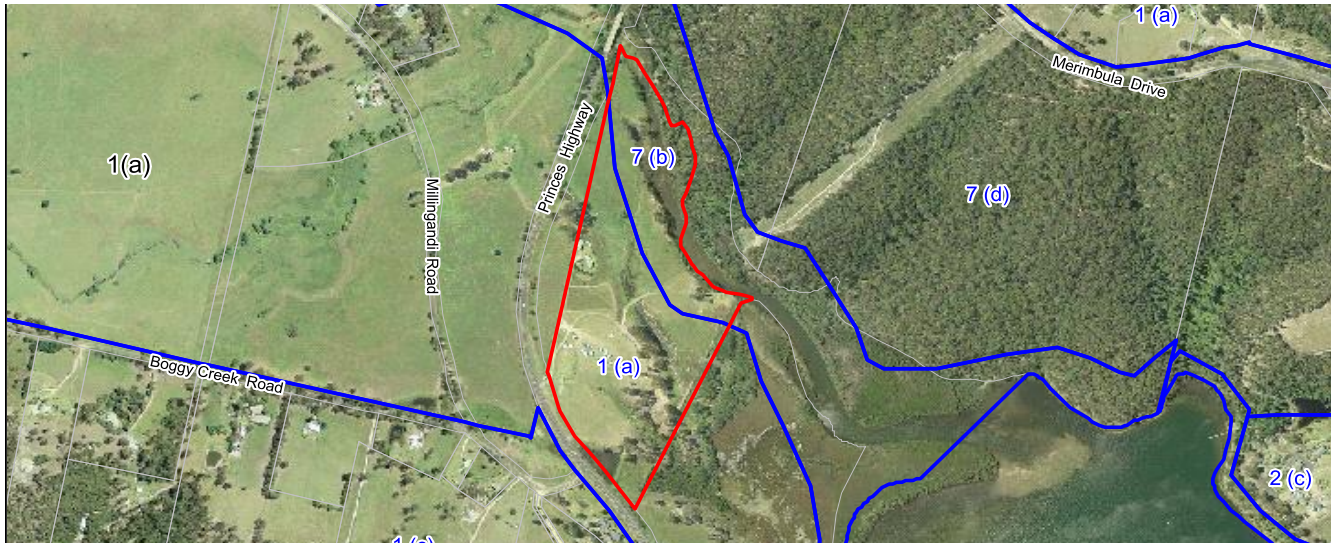
The site was deferred following an address to Council in which a 5ha minimum lot size was requested. The 5ha minimum lot size was supported by Council, provided an On-site Sewage Management (OSSM) report was prepared to confirm the site's suitability for further subdivision.

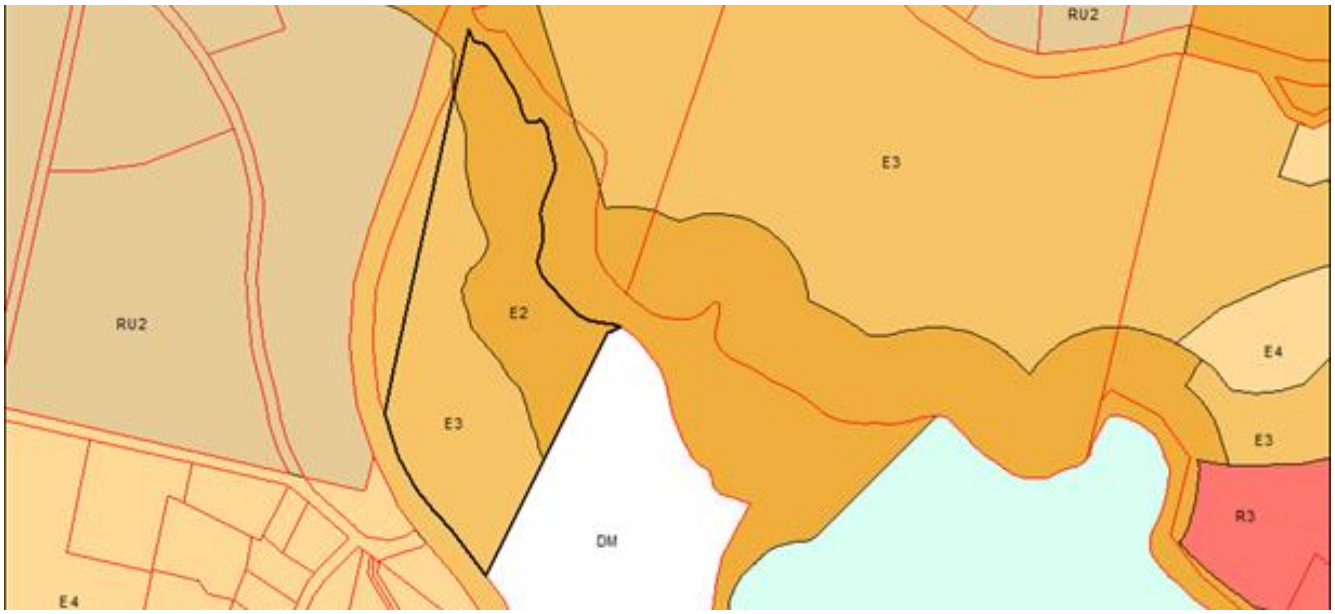
The OSSM report has recently been completed and indicates the subject land is only suitable for one (1) additional lot, unless adjoining land can be acquired to provide for further effluent treatment capacity. This is now an unlikely scenario.

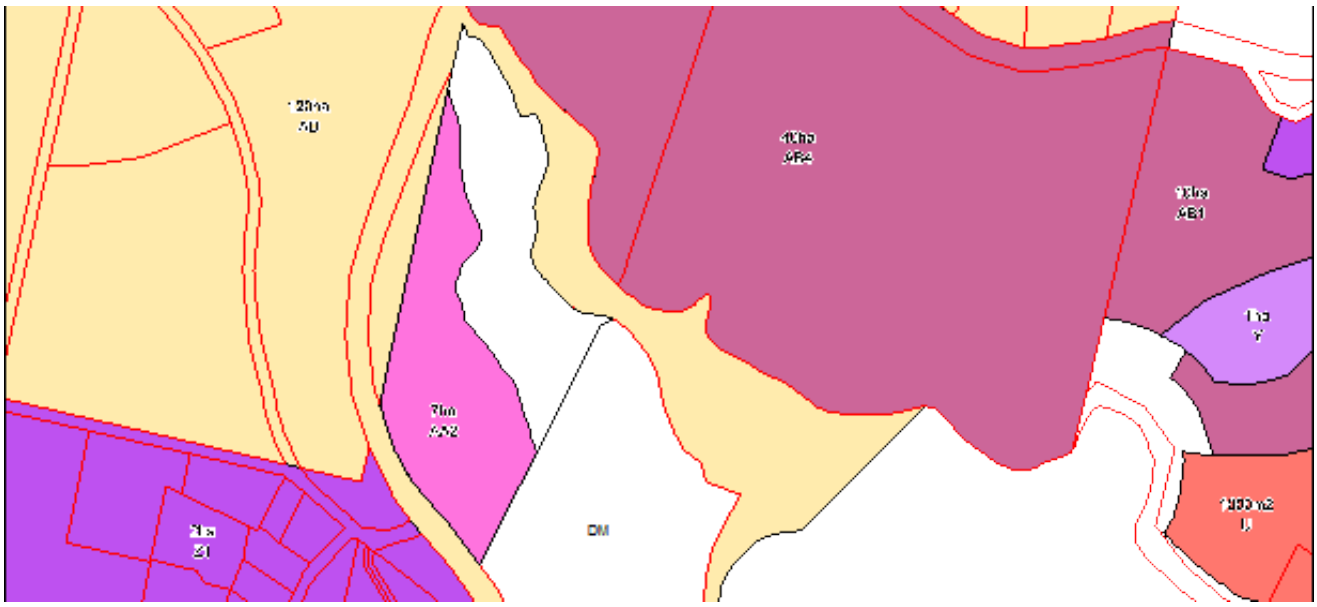
2016 Proposal

After consultation with the landowner, Council officers recommend the land retain its E3 zoning, but revised with a new extended Environmental Conservation area to reflect the new course of the creek after erosive processes.

A 7ha minimum lot size, providing for one (1) additional lot is recommended. This recommendation is supported by the landowner.







Figures 1 - 3: Current zoning (LEP 2002), Proposed re-zoning 2017, Proposed Minimum Lots Sizes 2017

Section A – Need for the Planning Proposal

Q1. Is the planning proposal a result of any strategic study or report?

No. Submissions for potential re-zoning were received from landowners during the public exhibition of the Draft Bega Valley LEP in 2011.

Q2. Is the planning proposal the best means of achieving the objectives or intended outcomes or is there a better way?

Yes. It is considered that this Planning Proposal is the most appropriate and available means of achieving the objective.

Section B – Relationship to Strategic Planning Framework

Q3. Is the Planning Proposal consistent with the objectives and actions of the applicable regional or sub-regional strategy?

South Coast and Tablelands Regional Plan 2036

Direction 28 of the SCTRP states that:

> 'Locate new rural residential areas close to existing urban settlements to maximise efficient use of existing infrastructure and services… to avoid and minimise potential land use conflicts with productive, zoned agricultural land and natural resources… to avoid areas of high environmental, cultural and heritage significance, important agricultural land and areas affected by natural hazards.' p.28

This planning proposal will not remove any viable agricultural grazing land from production and proposes to locate an additional lot within the existing catchment of Millingandi.

In February and March 2016, Department and Council officers discussed several sites featured in this planning proposal. This site was not discussed or minuted at that time. It is acknowledged that Council has yet to formally publish its Draft Rural Living Strategy 2016.

Q4. Is the Planning Proposal consistent with a council's local strategy or other local strategic plan?

This planning proposal recommendations for this site deviate from the original 2008 recommendation contained in the Merimbula Structure Report by recommending a smaller minimum lot size of 7 Hectares and an E3 zoning, so therefore is not consistent with this strategy.

The Merimbula Structure Report of 2008 (amended 2015) considers this site specifically and states on p.34 that

'Recommendation for Area 40: That Council propose that part of the area within 150 metres of the Lake foreshore plus all areas gazetted SEPP14 be zoned E2 Environmental Conservation. Further that the remainder of these areas be proposed for zone E4 Environmental Living with a 10 ha minimum lot size for new subdivision. This would prevent further subdivision of this foreshore area. All existing dwelling envelopes are to be in the E4 zone. '

Draft Rural Living Strategy - Extract Figure 4: Merimbula Catchment

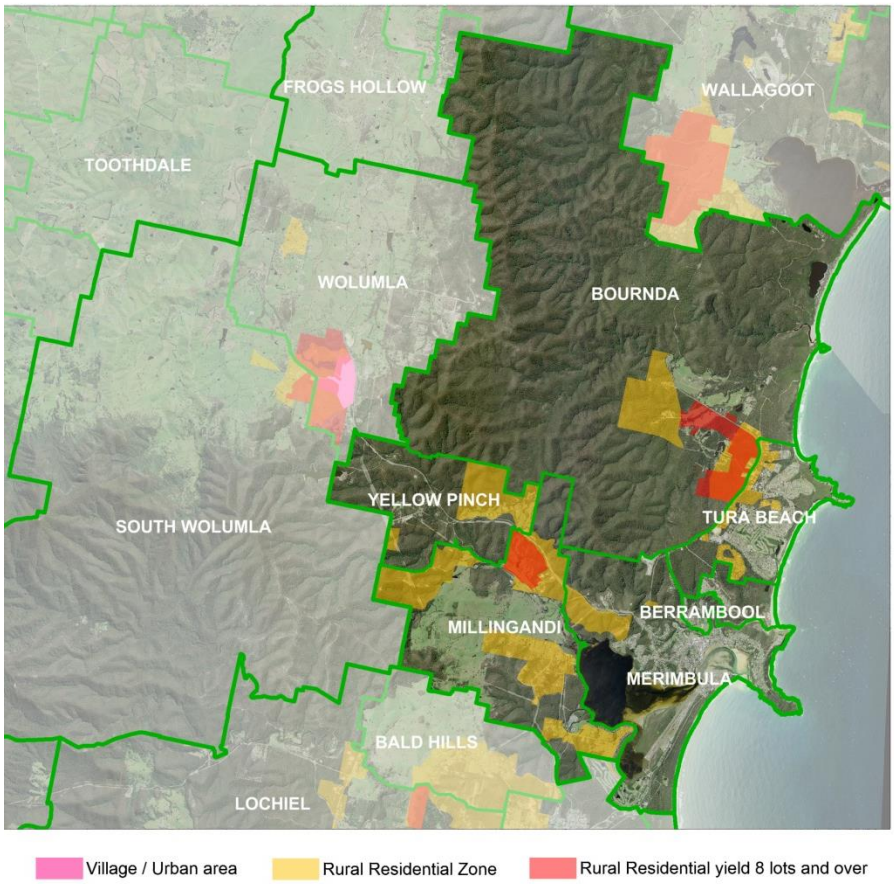


Table 23a: Merimbula Catchment: Rural Residential & General Rural Supply

	Rural Residential Zones			General Rural Zones			
Locality	**Area (ha)**	**Vacant lots**	**Potential additional lots**	**Area (ha)**	**Vacant concess-ional lots**	**Approved concess-ional lots**	**Existing holdings**
Bournda	260	3	39	545	4	8	1
Merimbula	3	1	0	302	1	0	0
Millingandi	578	15	33	1,047	0	8	1
Tura Beach	93	10	0	78	0	0	0
Yellow Pinch	200	1	0	237	3	0	0
TOTAL	**1,134**	**30**	**72**	**2,209**	**8**	**16**	**2**
% Shire Total	15.9	9.7	9.1	1.2	1.8	2.6	1.9

Table 23b: Merimbula Catchment: Total Supply & Demand							
Locality	**Dwelling Approvals 1999-2014**	**Average Dwellings Per Annum**	**Rural Residential Zones**	**General Rural Zones**	**Occupied Lots**	**Vacant Lots**	**Potential Additional Lots**
Bournda	37	2.3	63	26	34	8	47
Merimbula	11	0.7	1	4	3	2	0
Millingandi	66	4.1	154	19	116	16	41
Tura Beach	31	1.9	114	0	104	10	0
Yellow Pinch	2	0.1	13	7	16	4	0
TOTAL	147	9.2	345	56	273	40	88
% Shire Total	10.0		11.3	2.2	8.1	4.7	6.2

Key findings

- majority of existing rural residential development within rural residential zones
- 10% Shire's vacant and 9% potential rural residential zoned lots
- good demand for rural residential living opportunities
- sufficient existing vacant supply from rural residential zoned land for medium term (16-23 years)

This planning proposal is justifiably inconsistent with the Draft Rural Living Strategy as it only results in two additional lots.

Q5. Is the Planning Proposal consistent with applicable State Environment Planning Policies?

This Planning Proposal is justifiably inconsistent with the State Environmental Planning Policies (SEPPs) Rural Lands as the hectare sizes involved do not equate to a larger viable holding (120 Hectares).

The Rural Planning Principles are as follows:

(a) the promotion and protection of opportunities for current and potential productive and sustainable economic activities in rural areas,

(b) recognition of the importance of rural lands and agriculture and the changing nature of agriculture and of trends, demands and issues in agriculture in the area, region or State,

(c) recognition of the significance of rural land uses to the State and rural communities, including the social and economic benefits of rural land use and development,

(d) in planning for rural lands, to balance the social, economic and environmental interests of the community,

(e) the identification and protection of natural resources, having regard to maintaining biodiversity, the protection of native vegetation, the importance of water resources and avoiding constrained land,

(f) the provision of opportunities for rural lifestyle, settlement and housing that contribute to the social and economic welfare of rural communities,

(g) the consideration of impacts on services and infrastructure and appropriate location when providing for rural housing,

(h) ensuring consistency with any applicable regional strategy of the Department of Planning or any applicable local strategy endorsed by the Director-General.

It is recognised that the current holding of 35 Hectares (Lots 721 and 722 DP 826975 (approximately) is a marginal grazing property at that size, unless intensive stock methods were employed on the land. On 19 March 2009, development consent was issued allowing a Recreational Vehicle Park. The DA was conditioned to limit the number of recreational vehicles on site to 20.

The total loss of cleared agricultural land to potential rural living development – 11 Hectares – not considered a significant loss.

120 Hectare holdings are a planning benchmark for a viable grazing property.

SEPP No. 44 Koala Habitat Protection

This SEPP aims to encourage the proper conservation and management of areas of natural vegetation that provide habitat for koalas to ensure a permanent free-living population over their present range and reverse the current trend of koala population decline

This planning proposal is consistent with the SEPP as the sites are not considered core Koala habitat due to the low probability of Ribbon gum or Red gums being present on site and the lack of recent records which indicates the absence of a breeding population of Koalas.

SEPP No. 55 Remediation of Land

This SEPP introduces planning controls for the remediation of contaminated land. The policy states that land must not be developed if contamination renders it unsuitable for a proposed use. If the land is unsuitable, remediation must take place before the land is developed.

Bega Valley Shire Council's records indicate that none of the subject land is contaminated.

Q6. Is the Planning Proposal consistent with applicable Ministerial Directions?

This Section addresses consistency with applicable Section 117 Directions. Attachment 3 contains a complete list of all 117 Ministerial Directions applicable within the Bega Valley Shire.

1.2 Rural Zones

This Direction applies when rezoning or removing general rural lands.

This planning proposal is inconsistent with this direction as it zones land which is currently used for grazing livestock as rural residential. It is considered that the proposed re-zonings do not break up any substantial grazing enterprises.

1.3 Mining, Petroleum Production and Extractive Industries

This Direction applies when a relevant planning authority prepares a planning proposal that would have the effect of prohibiting the mining of coal or other minerals, production of petroleum, or winning or obtaining of extractive materials, or restricting the potential development of resources of coal, other minerals, petroleum or extractive materials which are of State or regional significance by permitting a land use that is likely to be incompatible with such development.

The objective of this Direction is to ensure that the future extraction of State or Regionally significant reserves of coal, other minerals, petroleum and extractive materials are not compromised by inappropriate development.

This planning proposal is consistent with this Direction.

1.5 Rural Lands

This Direction applies when a relevant planning authority prepares a planning proposal that will affect land within an existing or proposed rural or environment protection zone or that changes the existing minimum lot size on land within a rural or environment protection zone.

The objectives of this Direction are to protect the agricultural production value of rural land and facilitate the orderly and economic development of rural lands for rural and related purposes.

This planning proposal is inconsistent with this Direction as it affects rural zoned land and proposes to increase the permissible density of land that is currently used for grazing.

This inconsistency is justified as the provisions of the planning proposal conform to the Rural Planning and Rural Subdivision Principles listed in State Environmental Planning Policy (Rural Lands) 2008.

The proposed re-zoning does not significantly compromise the production value or development of rural land in a Shire wide context for rural purposes, as only 11 Hectares of land is proposed to be removed from broad acre grazing.

No intensive agricultural pursuits are removed or compromised by this re-zoning. In particular, this planning proposal will:

- Not fragment high quality agricultural land;
- Not cause additional rural land use conflicts, particularly between residential land uses and other rural land uses;
- Provide rural residential opportunities compatible with the natural and physical characteristics of the land and that will integrate with surrounding and existing rural residential developments; and
- Provide rural residential opportunities in areas close to existing town centres (this site is 5.8km from the Merimbula P.O.) that are well serviced and capable of meeting the daily needs of residents.

2.1 Environment Protection Zone

This Direction applies when a relevant planning authority prepares a Planning Proposal. The objective is to protect and conserve environmentally sensitive areas.

This planning proposal is consistent with this Direction as all lands will not result in any alienation or destruction of environmentally sensitive areas.

This lot was originally exhibited E3 Environmental Management as it contains Coastal Wetlands in the north eastern portion of the lot extending toward the north west and is highly significant in terms of aboriginal archaeology. The proposed addition of the E2 Environmental Conservation zone has been included and the boundaries reflect the new course of the creek after erosive processes.

2.2 Coastal Management

This Direction applies when a relevant planning authority prepares a Planning Proposal that applies to the land identified by the State Environmental Planning Policy (SEPP) (Coastal Management) 2018.

Part of the lot is mapped as Coastal wetlands and littoral rainforests area. The management objectives for this area are as follows:
(a) to protect coastal wetlands and littoral rainforests in their natural state, including their biological diversity and ecosystem integrity,
(b) to promote the rehabilitation and restoration of degraded coastal wetlands and littoral rainforests,
(c) to improve the resilience of coastal wetlands and littoral rainforests to the impacts of climate change, including opportunities for migration,
(d) to support the social and cultural values of coastal wetlands and littoral rainforests,
(e) to promote the objectives of State policies and programs for wetlands or littoral rainforest management.
This planning proposal is consistent with these objectives as the wetlands are wholly contained within the proposed E2 zone to ensure their protection and integrity. The proposed zones and minimum lot size enables the subdivision of the land to create an additional lot which will better provide for ongoing protection and management of the land.

Site 1 has not been identified as land affected by a current or future coastal hazard in a local environmental plan or development control plan, or a study or assessment undertaken.

2.3 Heritage Conservation

This Direction applies when a relevant planning authority prepares a planning proposal. The objective is to conserve items, areas, objects and places of environmental heritage significance and indigenous heritage significance.

This planning proposal is consistent with this Direction as it includes provisions to protect and conserve identified places or items of significant heritage value.

Consultation with NSW Office of Environment and Heritage dated 19 March 2018 advises that Aboriginal sites have previously been recorded within the site and consist of stone artefact scatters and were recorded during previous archaeological assessments.

A review of Council's BVLEP 2002 and BVLEP 2013 identified that the subject lands retain no items of European heritage.

3.1 Residential Zones

This Direction applies when a relevant planning authority prepares a Planning Proposal that will affect land within an existing or proposed residential zone or other zone in which significant residential development is permitted or proposed to be permitted.

The objectives of this Direction are to encourage a variety and choice of housing types to provide for existing and future housing needs, make efficient use of existing infrastructure and services and ensure that new housing has appropriate access to infrastructure and services and minimise the impact of residential development on the environment and resource lands.

This Planning Proposal is consistent with this direction as it does not propose any significant urban development in a residential zone or future urban residential zone.

3.4 Integrating Land Use and Transport

This direction applies when a relevant planning authority prepares a Planning Proposal that will create, alter or remove a zone or a provision relating to urban land, including land zoned for residential, business, industrial, village or tourist purposes. The objective of this Direction is to ensure that urban structures, building forms, land use locations, development designs, subdivision and street layouts achieve a number of planning objectives.

This Planning Proposal is consistent with this direction as adequate road infrastructure is available to support small scale rural residential developments. All sites are in close proximity to power and communications.

4.1 Acid Sulphate Soils

This Direction applies when a relevant planning authority prepares a planning proposal that will apply to land having a probability of containing acid sulphate soils as shown on the Acid Sulphate Soils Planning Maps. The objective of this Direction is to avoid significant adverse environmental impacts from the use of land that has the probability of containing Acid Sulphate Soils.

This planning proposal is inconsistent with this Direction as it applies to land that has a probability of containing acid sulphate soils. Lot 721 and Lot 712 DP 826975, 2529 Princes Highway, Millingandi are identified on the BVLEP 2013 Acid Sulphate Soils Map as containing Class 1 and Class 2 Acid Sulphate Soils (see Figure 25).

The inconsistency with this Direction is justified given the minor scale of development likely to result from the zoning outcomes and because this issue is routinely addressed by Council in the development assessment process.

Under Clause 6.1 of BVLEP 2013 studies are required for land that is within an area identified as having a probability of containing acid sulphate soils. Soil samples are assessed for content of acid sulphate material by a suitably qualified person and the results lodged with Council. If acid sulphate soils are identified, no excavation can take place until an Acid Sulphate Soil Management Plan has

been lodged with Council and approved and any required measures to minimise adverse environmental impacts have been implemented.

Figure 5: Lot 721 DP 826975, 2529 Princes Highway, Millingandi – Acid Sulphate Soil area

4.4 Planning for Bushfire Protection

This Direction applies when a relevant planning authority prepares a Planning Proposal that will affect, or is in proximity to land mapped as bushfire prone land. The objectives of this Direction are to protect life, property and the environment from bush fire hazards, by discouraging the establishment of incompatible land uses in bush fire prone areas, and encourage sound management of bush fire prone areas.

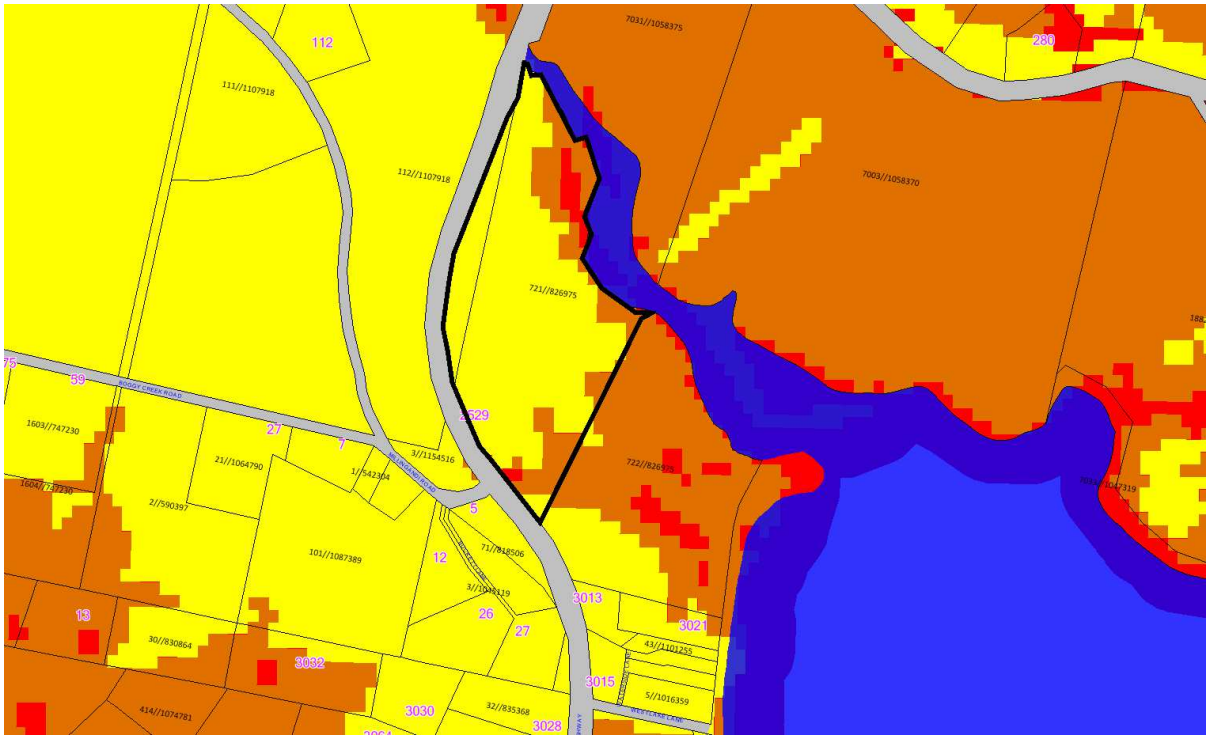


Figure 6: Bushfire Map: site contains mostly Vegetation Category 1 (yellow) and small areas of Vegetation Category 2 (brown) plus minimal buffer areas (red).

This Planning Proposal is consistent with the objectives of this Direction as it does not encourage the establishment of incompatible land uses and appropriate development of the land can occur through the application of the provisions contained within Planning for Bushfire Protection 2006.

5.1 Implementation of Regional Strategies

Planning Proposals must be consistent with a regional strategy released by the Minister for Planning.

As detailed at Q3, this Planning Proposal is justifiably inconsistent with the overall vision, land use strategy, policies, outcomes and actions identified in the South Coast Regional Strategy.

6.3 Site Specific Provisions

This Direction applies when a relevant planning authority prepares a Planning Proposal that will allow a particular development to be carried out. The objective of this Direction is to discourage unnecessarily restrictive site specific planning controls.

This Planning Proposal does not seek to include additional uses beyond what is permitted within the land use table.

Section C – Environmental, Social and Economic Impact

Q7. 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?

There is no critical habitat in the Bega Valley Shire. With regard to threatened species, populations or ecological communities, all the proposed sites will enable rural living sites to be occupied over existing cleared agricultural land. Therefore, it is unlikely that threatened species or habitats will be adversely affected.

Q8. Are there any other likely environmental effects as a result of the planning proposal and how are they proposed to be managed?

Nil.

Q9. Has the planning proposal adequately addressed any social and economic effects?

The proposed re-zoning will have positive social and economic effects as it will encourage appropriate rural residential subdivisions.

Section D – State and Commonwealth Interests

Q10. Is there adequate public infrastructure for the planning proposal?

No additional public infrastructure requirements for the subject areas are required.

Q11. What are the views of State and Commonwealth public authorities consulted in accordance with the Gateway determination?

Consultation with State and Commonwealth public authorities has not yet been undertaken. The level of consultation will be determined by the NSW Department of Planning and Environment when it makes its Gateway Determination.

Site 2 – Sapphire Coast Drive, Tura Beach ('Mandeni') 214 Ha Lots 471 & 472 DP1043030

Key Outcomes:

1. ***Protection of high value old growth red bloodwood eucalypt forest, Merimbula Star-hair and other threatened species;***
2. ***Transfer of existing development potential from high quality forest to a less constrained part of the property (where the Racecourse concept plan is proposed);***
3. ***The proposed re-zoning is likely to produce a maximum lot yield of 36 lots (plus residue lot) based on existing concept plans consisting of;***
    - ***15 x 1 Ha rural residential lots in the western half of the subject land known as 'The Racecourse'***
    - ***21 x 0.5 - 0.6 Ha lots in the eastern half of the subject land known as 'The Golf Course' (approved under DA2008.443)***

Current LEP 2002 zoning

1(a) Rural General Zone (MLS 120 Ha)

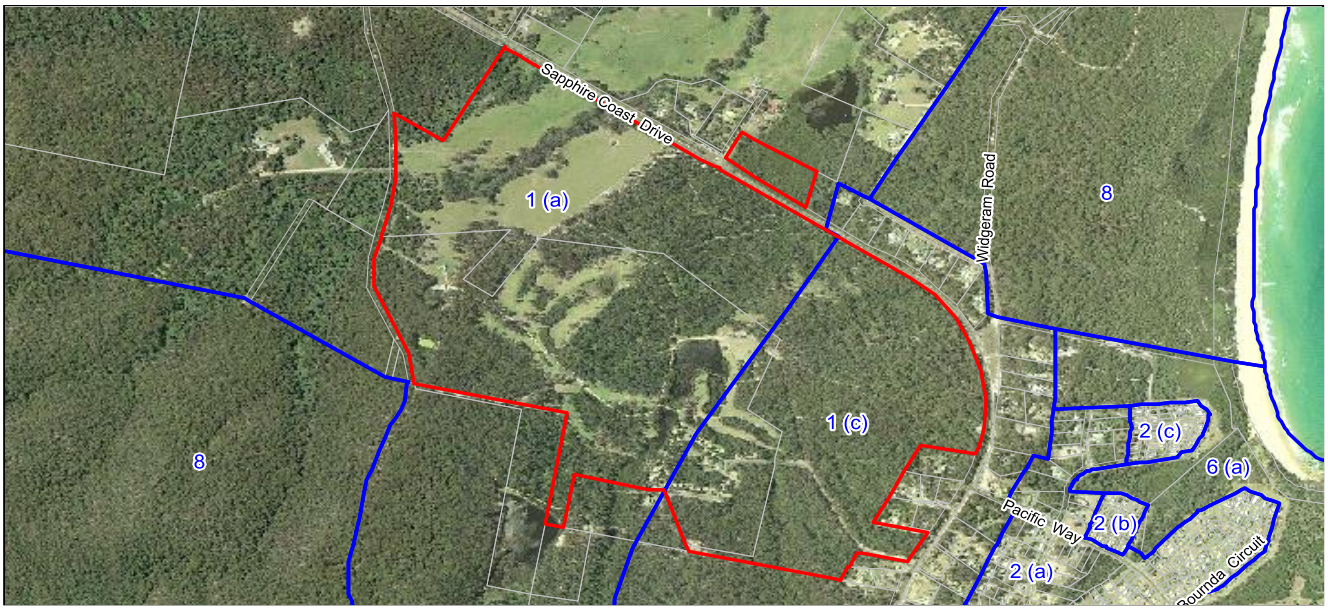
1(c) Rural Small Holdings Zone (MLS 5000m2)

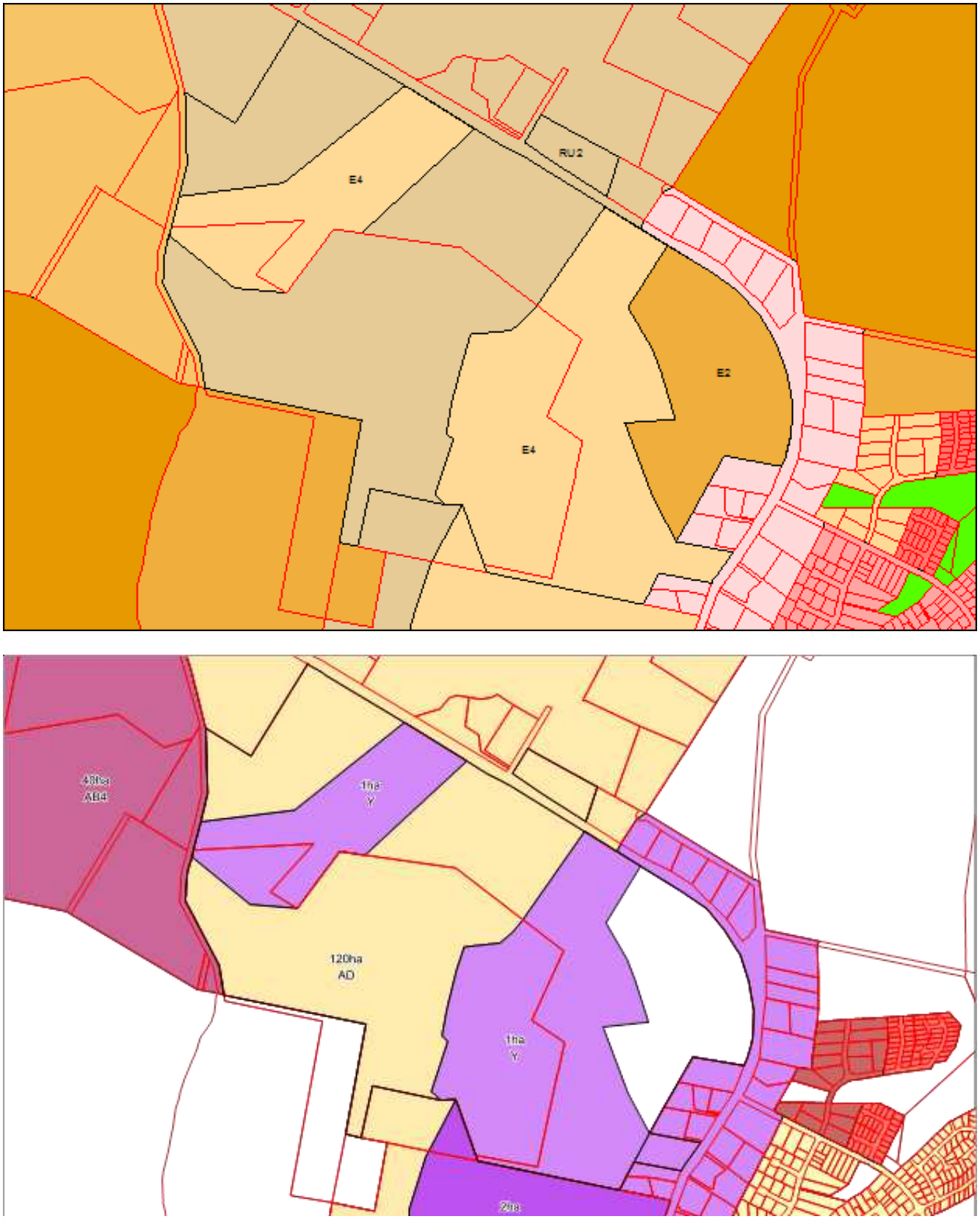
Proposed LEP 2013 re-zoning

RU2 Rural Landscape (MLS 120 Ha)

E4 Environmental Living (MLS 1 Ha)

E2 Environmental Conservation (no lot size)





Figures 7 – 9: Current Zoning 2002 LEP, Proposed Zoning 2016, Proposed MLS 2016

Background – (2012 – 2018)

Mandeni was deferred from the BVLEP 2013 to allow for the owner to prepare a comprehensive masterplan for the property.

Key aspects to be covered in the masterplan were the relocation of the proposed 41 lots away from high conservation value forest and a detailed socio-economic and servicing strategy, to enable consideration to be given for the subdivision of the existing tourist cabin development.

The Council no longer requires the masterplan as an additional 31 lot community title development has been abandoned.

In 2010, Lots 470, 471 and 472 DP 1043030 (214 Ha) were proposed to be zoned partly E4 Environmental Living with a 2 hectare minimum lot size and RU2 Rural Landscape with a minimum lot size of 120 under Draft BVLEP 2010.

During the exhibition of Draft BVLEP 2010, Council received a submission requesting:

- a rural residential zone with a minimum lot size of 1-2 hectares for the Racecourse Site to allow for future rural residential subdivision
- A minimum lot size of 500 square metres for the Cabins site to allow for future residential subdivision
- The common property be zoned E2 with no further subdivision potential.

Figure 10: Mandeni Subdivision Plan 2011 73 lots - submission to CLEP 2011

Golf Course Development (DA 2008.0443) - Approved

- **21 Lot plus residue subdivision (see Figure 11)**
- **PVP requirements to compensate for 2.12 Ha of clearing of native vegetation for road and powerlines**
-

Figure 11: Golf Course DA concept plan - 2008.443 Lot sizes 5200m2 to 6200m2

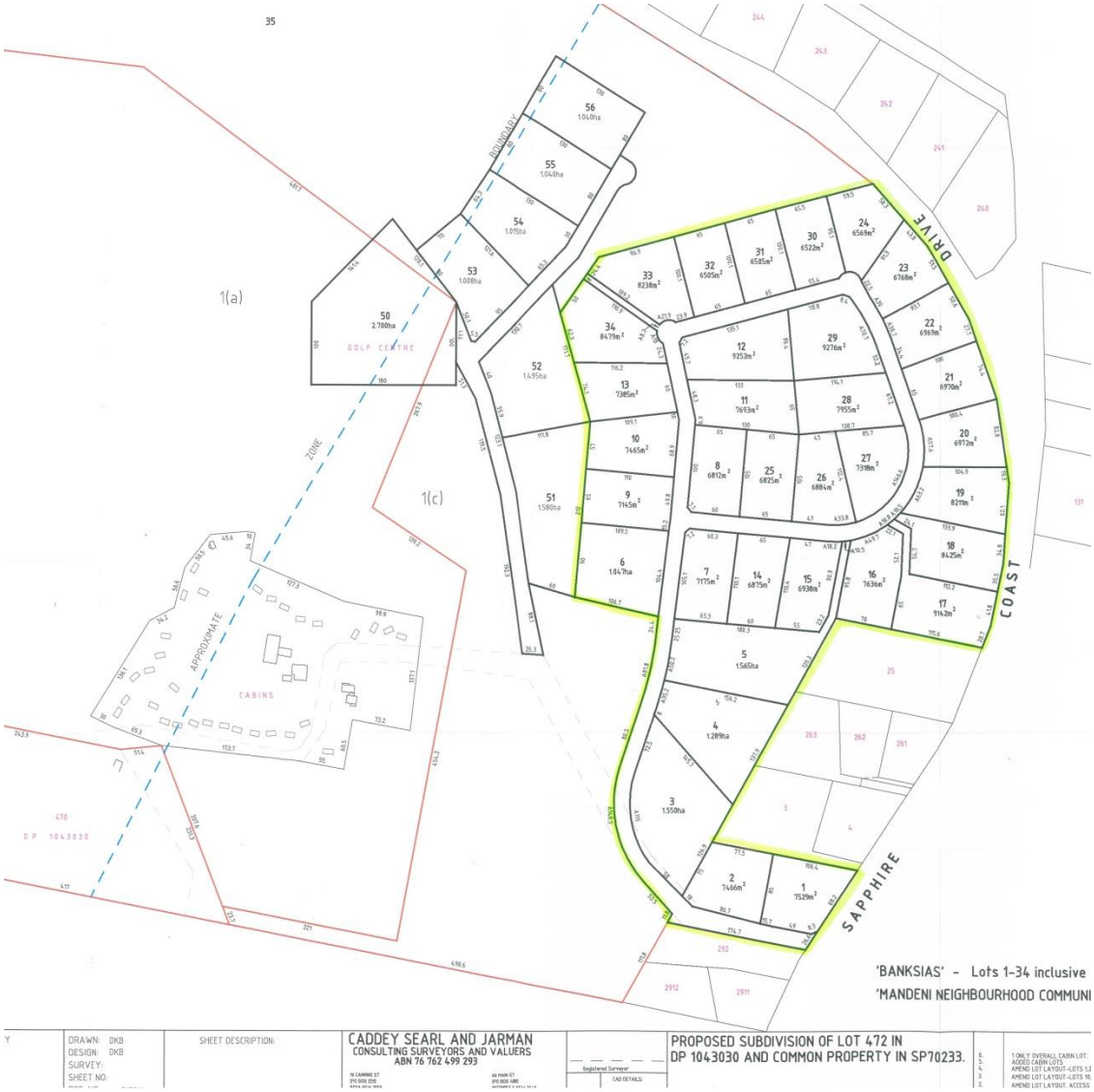


Figure 12: Original proposal 41 lots - eastern section over 1 c) zone - June 2008

Original 41 lot subdivision over eastern section of the subject land

This concept plan was abandoned after major concerns about loss of high quality habitat forest in the eastern section of the subject site.

The 31 lot Community Title proposal

A proposal was forwarded to Council in 2011 to strata title over 31 timber cabins under the guise of 'affordable housing'. The holiday cabins and managers residence were to be converted into permanent dwellings for sale.

This raised various issues regarding

- public transport access is poor;
- access during emergencies;
- adequate water supply;

- effluent treatment and disposal evaluation, given the need for upgrade of existing effluent treatment and disposal system;
- bushfire risk;
- socioeconomic assessment for vulnerable people in a 'remote' location;

These issues were not resolved by the available information, hence a masterplan was called for.

Council no longer requires a masterplan from the applicant as the community title subdivision plans for the 31 cabins remains undecided by landholder and the revised "Golf Course" proposal takes into account protecting the highest value native vegetation (under the proposed E2 zone).

It is proposed to undefer this section of the property to the exhibited E4 zoning. Should the owner wish to continue to pursue the subdivision of the cabins in the future, they are able to submit a planning proposal based on the requested socio-economic and servicing studies.

2018 Planning Proposal

After ongoing consultation with the land owner, the above recommendation for the application of RU2, E4 and E2 zones and 120ha and 1ha lot sizes are supported having regard to the Golf Course and Race Course proposals.

It is understood that should the landowner wish to continue to pursue the subdivision of the cabins, this area of land could be the subject of a future planning proposal.

Explanation of Potential Lot Yield

In summary this Planning Proposal would allow a lot yield of 36 rural residential lots, based on current concept plans.

- Proposed E4 zone eastern section - The Golf Course concept = 21 x 0.5 - 0.6 Ha lots
- Proposed E4 zone western section - The Racecourse concept = 15 x 1 Ha lots
- 36 rural living lots proposed across entire site plus residue lots.

a) 'The Golf Course' development – concept plan submitted 2008 and later modified.

DA 2008.443 approved 21 lots (plus a residue) all approximately 5200m2 to 6200m2 under LEP 2002 1 c zoning.

Minimum Lot Size (MLS) under current 1 c zoning (LEP 2002)

Size of land under 1 c zoning = 60 Hectares (approx.)

The point scoring system under Development Control Plan No. 9 resulted in a suggested minimum lot size of 5000m2. The original subdivision plan from June 2008 showed 41 lots at around 8000m2.

In summary, the MLS currently available for the owner is 5000m2 in the existing 1 c zone.

The potential lot yield not taking into consideration threatened native vegetation or other constraints under 1 c zoning = 70 lots (approx.)

The sizes of the proposed 21 lots have been subsequently reduced to between 5200m2 to 6200m2.

The proposed MLS of 1 Ha for the E4 zone (52 Ha) in the eastern half of the site will ensure that these lots cannot be further subdivided.

b) <u>The 'Racecourse' – concept plan submitted 2011 and surveyed 2014</u>

In the exhibited maps for the CLEP 2010, this 'racecourse' part of Mandeni was shown as RU2 with a MLS of 120 Hectares.

The 'Racecourse' area of the site has a proposed 'masterplan' of 17 lots of approximately just over 1 Ha in size. This subdivision concept plan has been formally presented to Council and it was determined that **Lot 213 and Lot 211 were not acceptable outcomes** in terms of native vegetation loss and would have to be deleted from any future Development Application.

The relocation of the existing development entitlements to the 'racecourse paddock' was supported on the proviso that the relocated lots would not be located within the forest fringe. The relocation of the development entitlements will require an amendment of the exhibited zoning from RU2 to E4 for this part of the property, which now forms part of this planning proposal.

Figure 13: Original 17 lot subdivision concept from 2011 – "The Racecourse"

Section A – Need for the Planning Proposal

Q1. Is the planning proposal a result of any strategic study or report?

No. This current proposal is as a result of landowners being able to submit reviews for zonings during the draft LEP 2010 consultation process.

Q2. Is the planning proposal the best means of achieving the objectives or intended outcomes or is there a better way?

Yes. It is considered that this Planning Proposal is the most appropriate and available means of achieving the objective.

Section B – Relationship to Strategic Planning Framework

Q3. Is the Planning Proposal consistent with the objectives and actions of the applicable regional or sub-regional strategy?

South Coast and Tablelands Regional Plan 2036

Direction 28 of the SCTRP states that:

> 'Locate new rural residential areas close to existing urban settlements to maximise efficient use of existing infrastructure and services… to avoid and minimise potential land use conflicts with productive, zoned agricultural land and natural resources… to avoid areas of high environmental, cultural and heritage significance, important agricultural land and areas affected by natural hazards.' p.28

This planning proposal proposes to locate additional rural residential land within the existing catchment of Bournda/Tura Beach area.

This planning proposal is **justifiably inconsistent** with the SCTRP as it proposes to remove 27 Hectares of grazing land from the property (currently 1 (a) zoning) and re-zone it to E4 Environmental Living.

In addition, this proposal is **justifiably inconsistent** with this direction as it seeks to rezone land to Environmental Living which is heavily vegetated. Please see Appendix 4 - the Environmental Assessment Report by Local Environmental Solutions January 2013 - attached to this planning proposal. This loss of native vegetation is off-set by the imposition of an E2 zone over a portion of the currently zoned 1 (c) land.

Q4. Is the Planning Proposal consistent with a council's local strategy or other local strategic plan?

This planning proposal recommendations for this site deviate from the **Merimbula Structure Report of 2008.** This report recommended that land remain in a rural and rural residential zone as a 'holding' action until the landowner has a clearer plan for the site. This planning proposal is not consistent with this 2008 strategy.

The Merimbula Structure Report of 2008 (amended 2015) considers this site specifically and states on p.32 that;

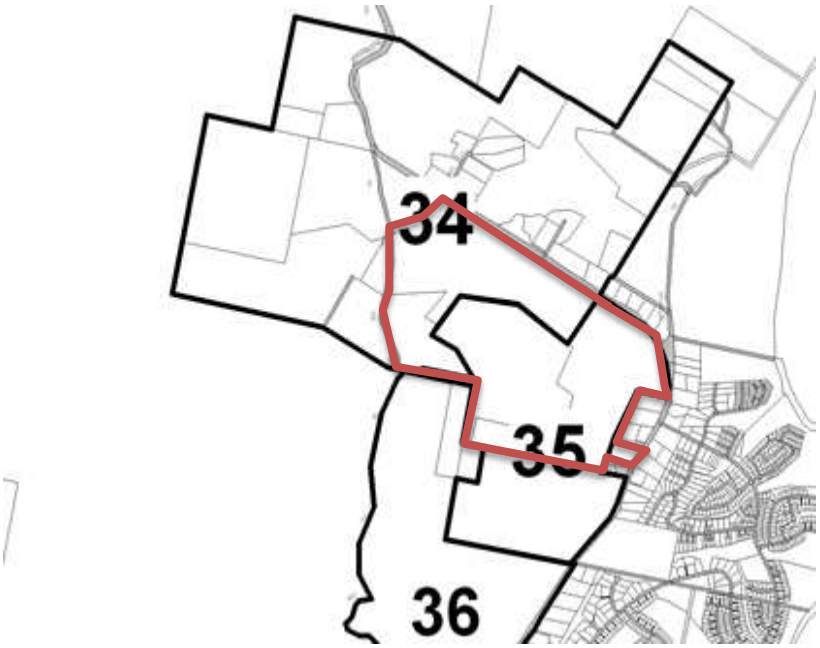


Figure 14: Area 34

Area 34

This area comprises 1(a) Rural General zoned lands to the east and west of Sapphire Coast Drive. The lands are in fragmented ownership and do not represent holdings of value to professional agriculture.

The land west of Sapphire Coast Drive is mostly heavily forested with topography either moderate to steep or compromised by many drainage lines. Part of the land also includes freshwater swamps and low lying areas unsuitable for development. The area is part of the Sandy Creek Catchment which drains to Bournda Lagoon in the Bournda National Park. This is a sensitive ICOL (intermittently closed and open coastal Lake), that suffers algal outbreaks due to excessive nutrients in the catchment. For these reasons further residential development should not be encouraged in this area.

Recommendation for Area 34: That the section of Area 34 west of the former Tathra Road be zoned E3 with a minimum area of 40ha on the lot size map.

That the section of Area 34 east of the old Tathra Road be zoned RU2 and retain the 120ha minimum in the CLEP as a holding action to allow landowners time to make submission to the five year review regarding possible further minor environmental living and ecotourism opportunities.

Area 35

This area comprises a section of 1(a) Rural General zoned lands which has been developed for tourism purposes, and a section of undeveloped 1(c) Rural Small Holdings zoned land in the east near Tura Beach.

Parts of the current 1(c) Rural Small Holdings zone have native vegetation constraints and smaller sections contain vegetation likely to be of value. The area also drains to Bournda Lagoon in the Bournda National Park. This is a sensitive ICOL (intermittently closed and open coastal Lake), that suffers algal outbreaks due to excessive nutrients in the catchment.

There is a need to resolve how much rural residential living might be accommodated in the 1(c) section of this area; however this would require a planning study financed by the landholders to resolve which areas are suitable for development and what the minimum lot size should be.

Recommendation for Area 35: That the section of Area 35 currently zoned 1(a) be zoned RU2 in the CLEP and the owner be allowed time to make submission to the five year review regarding the long term zoning.

That the section of Area 35 currently zoned 1(c) be zoned E4 in the CLEP with a 2ha minimum as a holding action. That the DCP contain constraints on any further subdivision of this section until a concept plan for the full zone has been prepared by the owners to Council's satisfaction.'

Q5. Is the Planning Proposal consistent with applicable State Environment Planning Policies?

This Planning Proposal is **justifiably inconsistent** with the State Environmental Planning Policies (SEPPs) Rural Lands as the hectare sizes involved do not equate to a larger viable holding (120 Hectares).

The Rural Planning Principles are as follows:

the promotion and protection of opportunities for current and potential productive and sustainable economic activities in rural areas,

(b) recognition of the importance of rural lands and agriculture and the changing nature of agriculture and of trends, demands and issues in agriculture in the area, region or State,

(c) recognition of the significance of rural land uses to the State and rural communities, including the social and economic benefits of rural land use and development,

(d) in planning for rural lands, to balance the social, economic and environmental interests of the community,

(e) the identification and protection of natural resources, having regard to maintaining biodiversity, the protection of native vegetation, the importance of water resources and avoiding constrained land,

(f) the provision of opportunities for rural lifestyle, settlement and housing that contribute to the social and economic welfare of rural communities,

(g) the consideration of impacts on services and infrastructure and appropriate location when providing for rural housing,

(h) ensuring consistency with any applicable regional strategy of the Department of Planning or any applicable local strategy endorsed by the Director-General.

Response:

The total loss of currently cleared agricultural land to rural living development will be approximately **27 Hectares** over the area marked as the "Racecourse" associated with a subdivision of 15 x 1 Ha lots – not considered a significant loss. 120 Hectare holdings are a planning benchmark for a viable grazing property.

SEPP No. 44 Koala Habitat Protection

This SEPP aims to encourage the proper conservation and management of areas of natural vegetation that provide habitat for koalas to ensure a permanent free-living population over their present range and reverse the current trend of koala population decline

This planning proposal is consistent with the SEPP as the sites are not considered core Koala habitat due to the low probability of Ribbon gum or Red gums being present on site and the lack of recent records which indicates the absence of a breeding population of Koalas.

SEPP No. 55 Remediation of Land

This SEPP introduces planning controls for the remediation of contaminated land. The policy states that land must not be developed if contamination renders it unsuitable for a proposed use. If the land is unsuitable, remediation must take place before the land is developed.

Bega Valley Shire Council's records indicate that none of the subject land is contaminated.

Q6. Is the Planning Proposal consistent with applicable Ministerial Directions?

This Section addresses consistency with applicable Section 117 Directions. Attachment 3 contains a complete list of all 117 Ministerial Directions applicable within the Bega Valley Shire.

1.2 Rural Zones

This Direction applies when rezoning or removing general rural lands.

This planning proposal is **justifiably inconsistent** with this direction as it zones 27 Hectares of land rural residential (which is currently cleared and could be used for grazing livestock). It is considered that the proposed re-zonings do not break up any substantial grazing enterprises.

Please note this figure of 27 Hectares only relates to the currently cleared former grazing land on the western half of the site and does not relate to the total size of proposed E4 zoned land.

1.3 Mining, Petroleum Production and Extractive Industries

This Direction applies when a relevant planning authority prepares a planning proposal that would have the effect of prohibiting the mining of coal or other minerals, production of petroleum, or winning or obtaining of extractive materials, or restricting the potential development of resources of coal, other minerals, petroleum or extractive materials which are of State or regional significance by permitting a land use that is likely to be incompatible with such development.

The objective of this Direction is to ensure that the future extraction of State or Regionally significant reserves of coal, other minerals, petroleum and extractive materials are not compromised by inappropriate development.

This planning proposal is consistent with this Direction.

1.5 Rural Lands

This Direction applies when a relevant planning authority prepares a planning proposal that will affect land within an existing or proposed rural or environment protection zone or that changes the existing minimum lot size on land within a rural or environment protection zone.

The objectives of this Direction are to protect the agricultural production value of rural land and facilitate the orderly and economic development of rural lands for rural and related purposes.

This planning proposal is inconsistent with this Direction as it affects rural zoned land and proposes to increase the permissible density of land that is currently used for grazing.

This **inconsistency is justified** as the provisions of the planning proposal conform to the Rural Planning and Rural Subdivision Principles listed in State Environmental Planning Policy (Rural Lands) 2008.

The proposed re-zonings do not significantly compromise the production value or development of rural land in a Shire wide context for rural purposes, as only **27 Hectares** of land is proposed to be removed from broad acre grazing.

No intensive agricultural pursuits are removed or compromised by these re-zonings. In particular, this planning proposal will:

- Not fragment high quality agricultural land;
- Not cause additional rural land use conflicts, particularly between residential land uses and other rural land uses;
- Provide rural residential opportunities compatible with the natural and physical characteristics of the land and that will integrate with surrounding and existing rural residential developments; and
- Provide rural residential opportunities in areas close to the existing town centre of Tura Beach and Merimbula that are well serviced and capable of meeting the daily needs of residents.

2.1 Environment Protection Zone

This Direction applies when a relevant planning authority prepares a Planning Proposal. The objective is to protect and conserve environmentally sensitive areas.

This planning proposal is **justifiably inconsistent** with this Direction approximately **12 Hectares** of native vegetation will be destroyed over the area marked E4 in the eastern section of the subject land as a result of the approval of 21 x 0.5 Ha lots (DA2008.443) under the LEP 2002.

The zoning of the forested land which has the *highest conservation value* will be protected by the E2 Environmental Conservation zoning**.**

Please refer to the Environmental Assessment (2013) by Local Environmental Solutions at **Appendix 4** in this Planning Proposal which outlines the environmental impact of a proposed 21 lot x 0.5 Ha subdivision (under 1 c Rural Small Holdings zoning) where the proposed eastern half of the E4 zone is proposed to be re-zoned from 1 c land. This document gives valid reasons as to the placement of the proposed E2 Environmental Conservation zone.

This area has old growth red bloodwood eucalypts which are the preferred habitat for the Yellow-bellied Glider which is a threatened species. Merimbula Star-Hair, another threated species, was also located on the land during studies for the Property Vegetation Plan. The vegetation type is not considered an Endangered Ecological Community.

This original PVP was required to off-set the proposed 2.12Ha of clearing for the original roads and cul-de-sacs associated with DA2008.443. The level of clearing required for the roads of the subdivision has now been reduced, but the PVP is still on the title.

This PVP is now redundant as the original proposal was for a more numerous lot and road configuration and will need revising when associated with any revised subdivision DA.

The off-set area on "Manna Park" still applies to that land but is no longer owned by the Mandeni estate. The legal status of the existing PVP will not be impacted by the proposed re-zoning. They are separate and distinct matters.

2.2 Coastal Management

This Direction applies when a relevant planning authority prepares a Planning Proposal that applies to the land identified by the State Environmental Planning Policy (SEPP) (Coastal Management) 2018.

Site 2 is mapped as a Coastal Environment Area. The management objectives for the coastal environment area are as follows:

(a) to protect and enhance the coastal environmental values and natural processes of coastal waters, estuaries, coastal lakes and coastal lagoons, and enhance natural character, scenic value, biological diversity and ecosystem integrity,
(b) to reduce threats to and improve the resilience of coastal waters, estuaries, coastal lakes and coastal lagoons, including in response to climate change,
(c) to maintain and improve water quality and estuary health,
(d) to support the social and cultural values of coastal waters, estuaries, coastal lakes and coastal lagoons,
(e) to maintain the presence of beaches, dunes and the natural features of foreshores, taking into account the beach system operating at the relevant place,
(f) to maintain and, where practicable, improve public access, amenity and use of beaches, foreshores, headlands and rock platforms.

This planning proposal is consistent with these objectives as the proposed zonings and minimum lot sizes allows for development in areas that already contain existing development and cleared inland

areas so as to continue to protect the coastal values of the surrounding area, protect the scenic values of the area and enhance biological diversity and ecosystem integrity by containing the development potential to areas that are already developed or areas that will cause minimal disturbance to the surrounding coastal environmental.

Site 2 has not been identified as land affected by a current or future coastal hazard in a local environmental plan or development control plan, or a study or assessment undertaken.

2.3 Heritage Conservation

This Direction applies when a relevant planning authority prepares a planning proposal. The objective is to conserve items, areas, objects and places of environmental heritage significance and indigenous heritage significance.

This planning proposal is consistent with this Direction as it includes provisions to protect and conserve identified places or items of significant heritage value.

Consultation with NSW Office of Environment and Heritage dated 19 March 2018 advises that Aboriginal sites have previously been recorded within the site and consist of stone artefact scatters and were recorded during previous archaeological assessments.

A review of Council's BVLEP 2002 and BVLEP 2013 identified that the subject lands retain no items of European heritage.

3.1 Residential Zones

This Direction applies when a relevant planning authority prepares a Planning Proposal that will affect land within an existing or proposed residential zone or other zone in which significant residential development is permitted or proposed to be permitted.

The objectives of this Direction are to encourage a variety and choice of housing types to provide for existing and future housing needs, make efficient use of existing infrastructure and services and ensure that new housing has appropriate access to infrastructure and services and minimise the impact of residential development on the environment and resource lands.

This Planning Proposal is consistent with this direction as it does not propose any significant urban development in a residential zone or future urban residential zone.

3.4 Integrating Land Use and Transport

This direction applies when a relevant planning authority prepares a Planning Proposal that will create, alter or remove a zone or a provision relating to urban land, including land zoned for residential, business, industrial, village or tourist purposes. The objective of this Direction is to ensure that urban structures, building forms, land use locations, development designs, subdivision and street layouts achieve a number of planning objectives.

This Planning Proposal is consistent with this direction as adequate road infrastructure is available to support small scale rural residential developments. All sites are in close proximity to power and communications.

4.4 Planning for Bushfire Protection

This Direction applies when a relevant planning authority prepares a Planning Proposal that will affect, or is in proximity to land mapped as bushfire prone land. The objectives of this Direction are to protect life, property and the environment from bush fire hazards, by discouraging the establishment of incompatible land uses in bush fire prone areas, and encourage sound management of bush fire prone areas.

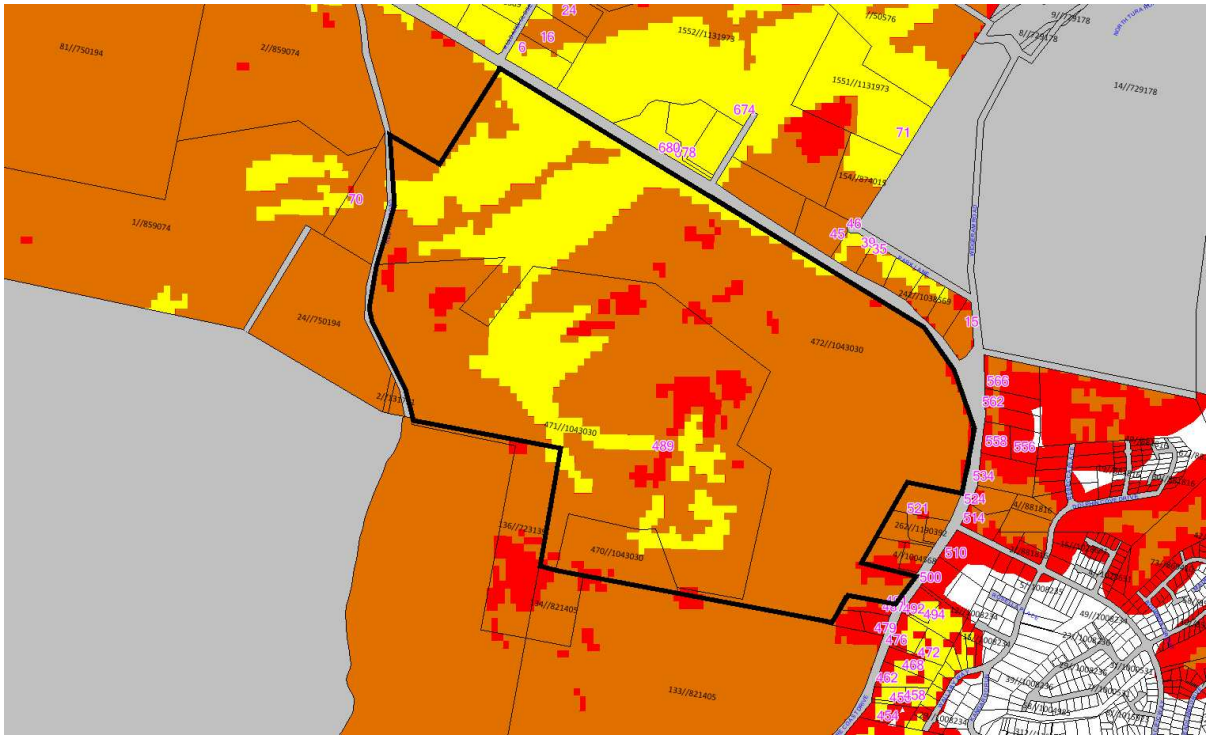


Figure 15: Bushfire Map - the vast majority of the property is classified as Vegetation Category 1, with some buffer zones over the cleared lands and Vegetation Category 2 on the remainder.

This Planning Proposal is consistent with the objectives of this Direction as it does not encourage the establishment of incompatible land uses and appropriate development of the land can occur through the application of the provisions contained within Planning for Bushfire Protection 2006.

5.1 Implementation of Regional Strategies

Planning Proposals must be consistent with a regional strategy released by the Minister for Planning.

As detailed at Q3, this Planning Proposal is justifiably inconsistent with the overall vision, land use strategy, policies, outcomes and actions identified in the South Coast Regional Strategy.

6.3 Site Specific Provisions

This Direction applies when a relevant planning authority prepares a Planning Proposal that will allow a particular development to be carried out. The objective of this Direction is to discourage unnecessarily restrictive site specific planning controls.

This Planning Proposal does not seek to include additional uses beyond what is permitted within the land use table.

Section C – Environmental, Social and Economic Impact

Q7. 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?

This planning proposal proposes to introduce an E4 zone (Environmental Living) which would allow dwelling houses on lots down to a size of 1 Hectare) and generally increase intensity of dwelling houses over previously cleared land (about 27 Ha) and about currently vegetated land (about 12 Hectares).

In relation to the proposed 21 lot subdivision over the proposed E4 zone (which will involve the eventual disturbance / removal of 12 Hectares of vegetation) it states on page 52 of the ***Environmental Assessment Report (see Appendix 4 by Local Environmental Solutions);***

> 'the development will impact on species which require hollows, a mature sub-canopy dense riparian vegetation and connectivity. These effects have been reduced significantly by the proposed lot layout and design, which allows for the retention of extensive, continuous and high quality habitat, a s well as significant biological features.'

Therefore, it is **justifiably inconsistent** with the direction.

The land to be zoned E2 Environmental Conservation is considered to have high habitat value for the Yellow-bellied glider and the Merimbula Star Hair. The proposed zoning will protect these values.

Please see Appendix 4.

Q8. Are there any other likely environmental effects as a result of the planning proposal and how are they proposed to be managed?

Nil.

Q9. Has the planning proposal adequately addressed any social and economic effects?

The proposed re-zoning will have positive social and economic effects as it will encourage small scale increases in population in appropriate rural residential subdivisions which are;

- within 3 km of Tura Beach Shopping Centre (eastern section of E4 zone)
- within 5 km of Tura Beach Shopping Centre (western section of E4 zone)

Section D – State and Commonwealth Interests

Q10. Is there adequate public infrastructure for the planning proposal?

No additional public infrastructure requirements for the subject areas are required.

Q11. What are the views of State and Commonwealth public authorities consulted in accordance with the Gateway determination?

Consultation with State and Commonwealth public authorities has not yet been undertaken. The level of consultation will be determined by the NSW Department of Planning and Environment when it makes its Gateway Determination.

Part 4 – Mapping

Changes to the proposed map sheets will be undertaken in a suitable format for public exhibition once the Gateway Determination is issued.

This Planning Proposal will result in changes the following properties on the following BVLEP 2013 maps:

LAP_001

Amend map sheet LAP_001 by deleting:

DM Deferred Matters for

1) **Lot 721 DP 826975, 2529 Princes Highway, Millingandi,**

2) **Lot 471 - 472 DP 1043030, Sapphire Coast Drive, Tura Beach.**

LZN_020

Amend map sheet LZN_020 by applying:

- E3 Environmental Management to part of Lot 721 DP 826975
- E2 Environmental Conservation to part of Lot 721 DP 826975

LSZ_020

Amend map sheet LSZ_020 by applying:

- AA2 7 Hectares to part of Lot 721 DP 826975

LZN_020B

Amend map sheet LZN_020B by applying:

- E3 Environmental Management to part of Lot 721 DP 826975
- E2 Environmental Conservation to part of Lot 721 DP 826975

LSZ_020B

Amend map sheet LSZ_020B by applying:

- AA2 7 Hectares to part of Lot 721 DP 826975

LZN_020C

- Amend map sheet LZN_020C by applying:
- RU2 Rural Landscape and E4 Environmental Living to Lot 471 and Lot 472 DP 1043030.
- E2 Environmental Conservation to Lot 472 DP 1043030

LSZ_020C

Amend map sheet LSZ_020C by applying:

- AD 120 Ha to RU2 Rural Landscape Lot 471 and Lot 472 DP 1043030.
- Y 1 Ha to E4 Environmental Living Lot 471 and Lot 472 DP 1043030.

Part 5 – Community Consultation

The Gateway Determination will confirm community consultation requirements. It is likely that the Proposal will be exhibited as a 'low' impact proposal for a period of not less than 14 days in accordance with Section 5.5.2 of *A Guide to Preparing LEPs.*

Public exhibition of the planning proposal will include notification on the Bega Valley Shire Council website, notification in the newspapers that circulate widely in the area (Merimbula News Weekly, Eden Magnet and Bega District News) and in writing to affected and adjoining landowners.

Information relating to the Planning Proposal will also be on display at the following Bega Valley Shire Council customer service centres:

Place	**Address**
Bega	Zingel Place Civic Centre, Bega NSW 2550
Tura Beach	Tura Murrang Library, Tura Beach Drive, Tura Beach 2548
Eden	Cnr Imlay and Mitchell St, Eden NSW 2551
Bermagui	Bunga St Library, Bermagui NSW 2546

Part 6 – Timeline

The Project Timeline will assist with tracking the progress of the Planning Proposal through the various stages of consultation and approval. It is estimated that this amendment to *Bega Valley Local Environmental Plan 2013* will be completed by July 2018.

Council requests delegation to carry out certain plan-making functions in relation to this proposal. Delegation would be exercised by Council's General Manager or Group Manager Planning and Environment.

Table A: Approximate Project Timeline

Key Stages of Consultation and Approval	Estimated Timeframe
STAGE 1 – Submit Planning Proposal to the Department	January 2018
STAGE 2 – Receive Gateway Determination	February 2018
STAGE 3 – Preparation of documentation for Public Exhibition	February 2018
STAGE 4 – Public Exhibition of the Planning Proposal	March 2018
STAGE 5 – Review/consideration of submissions received	April 2018
STAGE 6 – Council Report	April 2018
STAGE 7 – Meetings	May 2018
STAGE 8 – Forward Planning Proposal to Department of Planning and Infrastructure with request amendment is made	May 2018
STAGE 9 – Date Council will make the Plan (if delegated), including any required consultation with the Parliamentary Counsel	June 2018
STAGE 10 – Anticipated date Council will forward Plan to the Department for notification	June 2018

9.3. Confirmation of Land Use Zonings - Millingandi

This report seeks to confirm the proposed zonings for Lot 721 DP 826975, Millingandi as part of finalisation of outstanding deferred matters from the Bega Valley Local Environment Plan 2013.

Director Planning and Environment

Background

At its meeting of 20 July 2016 Council considered a report "8.2 Strategic Direction for nine Deferred Sites in Bega Valley Local Environment Plan 2013", which recommended appropriate land use zones and minimum lot sizes to nine sites across the Shire, that are deferred from the Bega Valley Local Environmental Plan 2013.

Following Council's adoption of the report, the Planning Proposal covering 3 of the deferred sites (Boydtown, Mandeni and Millingandi) was forwarded to the Department of Planning's Gateway for approval to proceed to Public Exhibition. During this process the Department advised Council of a minor omission with regard the Millingandi site in Council's resolution.

With regard to the Millingandi site Council resolved;

1 e) ***Site 5 - Princes Highway, Millingandi***

That the land be zoned E3 with a 7ha minimum lot size.

*2. That staff be authorised to forward Planning Proposals to the Department of Planning fo*r Gateway determination for Sites 1 - 6 as per the zoning and lot sizes resolved above.*

3. That following Gateway determination the Planning Proposals be placed on public exhibition and, following the exhibition period, a further report be submitted to Council for incorporation of the subject land into Bega Valley Local Environmental Plan 2013.

The Planning Proposal intended to zone the majority of the lot E3, with a standard E2 buffer being applied to the Millingandi Creek, floodplain, Merimbula estuary foreshore and wetlands consistent with Council's Policy for E2 zones (see Figure 1). Whilst the E2 zone was identified on the map attached to the draft Planning Proposal, the E2 zone was not mentioned in the report discussion or the subsequent resolution. The addition of the "E2 zone" to a resolution for this site does not impact on the proposed lot size or lot yield for this site.

In order to clarify this matter, prior to Public Exhibition, the Department of Planning has requested Council confirm the zoning for the Millingandi by way of resolution.

It is important to progress this matter which will also allow the other sites (Boydtown and Mandeni) covered by this Planning Proposal to proceed to Public Exhibition and ultimately to finalisation of their status in the Bega Valley Local Environmental Plan 2013.

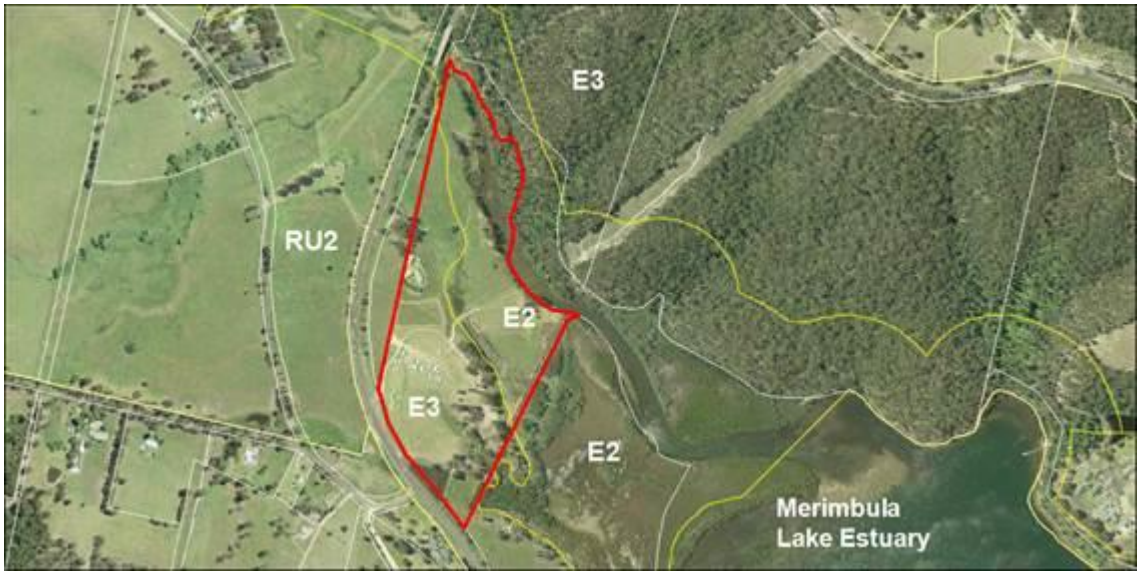


Figure 1 – Millingandi deferred site proposed zoning

Conclusion

The NSW Department of Planning and Environment has sought confirmation of Council's position with regard the zoning for the Millingandi deferred site. This minor amendment will allow for the public exhibition and finalisation of this site and two other sites.

Attachments

Nil

Recommendation

1. That Council advise the Department of Planning and Environment that it confirms the following zonings be applied to the Millingandi site as follows:

   a) **Lot 721 DP 826975, Millingandi**; apply E3 and E2 zones.

9.3 Confirmation of Land Use Zonings - Millingandi

71/17 RESOLVED on the motion of Crs Tapscott and Dodds

That Council advise the Department of Planning and Environment that it confirms the following zonings be applied to the Millingandi site as follows:

a) **Lot 721 DP 826975, Millingandi**; apply E3 and E2 zones.

IN FAVOUR: Crs Bain, Nadin, Griff, McBain, Seckold, Tapscott, Dodds and Allen

AGAINST: Nil

ABSENT: Cr Fitzpatrick

8.2. Strategic Direction for nine Deferred Sites in Bega Valley Local Environmental Plan 2013

This report seeks Council's resolution of a strategic direction for nine sites currently deferred in Bega Valley Local Environmental Plan 2013 and to proceed with the preparation of Planning Proposals for six of those sites.

Director Planning and Environment

Background

The gazettal of Bega Valley Local Environmental Plan (BVLEP 2013) left a number of sites throughout the Shire as 'Deferred Matters' as the zonings and/or lot sizes proposed by landowners represented a significant departure from the exhibited draft Bega Valley Local Environmental Plan (draft BVLEP 2010) or required more detailed investigations.

Council is requested to resolve a strategic direction for each of the following nine (9) sites and for planning proposals to be prepared for Sites 1 to 6 .

Site #	Subject Site
1	Boydtown Property (excluding the area around the Seahorse Inn)
2	Summerhill Rd, South Pambula
3	Princes Highway, South Pambula
4	Old Mill Road, Wolumla
5	Princes Highway, Millingandi
6	Mandeni, Sapphire Coast Drive
7	Wolumla - Candelo Road, Wolumla
8	Clarke Street, Wolumla
9	Scott Street, Wolumla

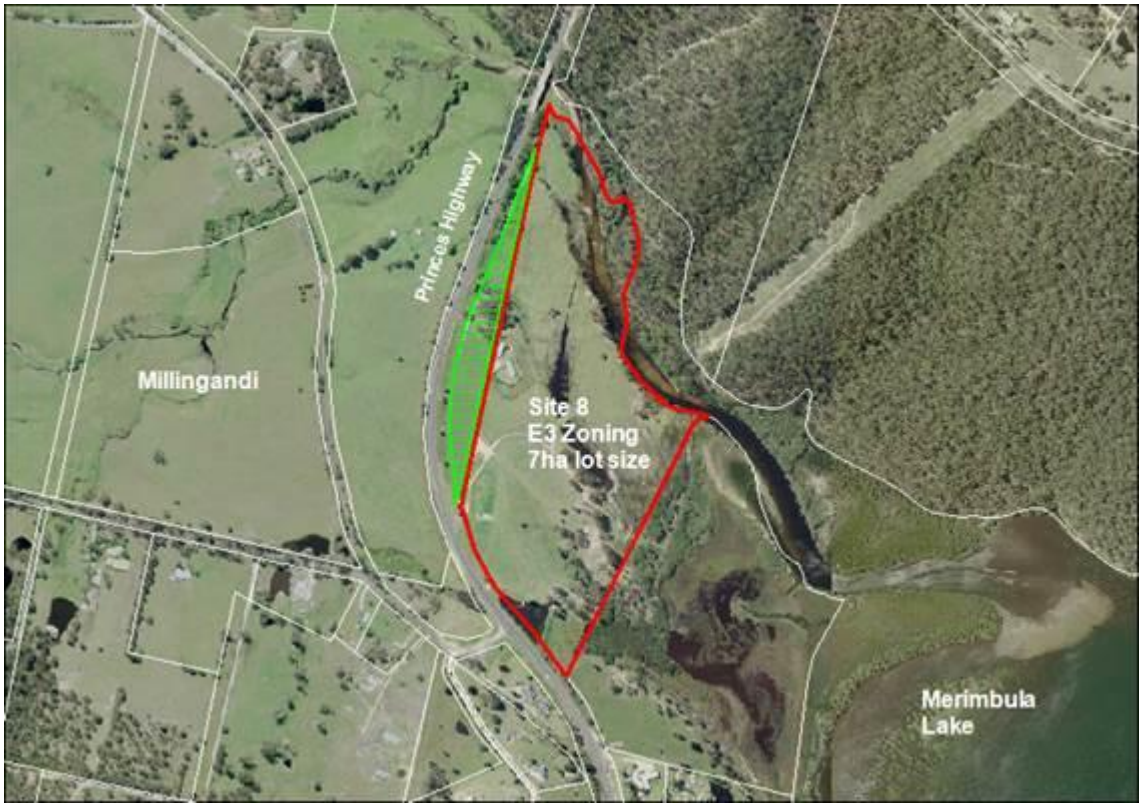
Proposed Strategic Direction

Site 5 - Princes Highway, Millingandi

Site 5 covers an area of 18ha on the western side of Merimbula Lake adjacent to Millingandi Creek. The site was exhibited with an E3 zoning and a 120ha minimum lot size, which would prevent any further subdivision. The site was deferred following an address to Council in which a 5ha minimum lot size was requested. The 5ha minimum lot size was supported by Council, provided an On-site Sewage Management (OSSM) report was prepared to confirm the site's suitability for further subdivision.

The OSSM report has recently been completed and indicates that Site 5 is only suitable for one (1) additional lot, unless adjoining land (shaded green on the figure below) can be acquired to provide for further effluent treatment capacity. The owner of the site is currently negotiating to purchase the neighbouring land. Should this purchase be achieved, the OSSM report indicates the newly expanded property has the capacity for a maximum of three (3) lots (including the existing dwelling).

Council officers recommend the land retain its E3 zoning with a 7ha minimum lot size, providing for one (1) additional lot. Should the neighbouring land be purchased and incorporated into Site 5, the 7ha lot size would result in a total of two (2) additional lots.



Recommendation: That the land be zoned E3 with a 7ha minimum lot size.

	Draft BVLEP 2010	**Recommendation for 2016 Planning Proposal**
Zones	E3	E3
Lot Sizes	120ha	7ha

Site 6 - Mandeni, Sapphire Coast Drive

Site 6 was deferred from BVLEP 2013 to allow for the owner to prepare a comprehensive masterplan for the property. Council requested that key aspects to be covered in the masterplan were to include the relocation of existing approved lots away from high conservation value forest and a detailed

socio-economic and servicing strategy, to enable consideration to be given for the subdivision of the existing tourist cabin development. Council has yet to receive an updated masterplan for the site.

Council has previously considered the relocation of the existing development entitlements and subdivision of the cabins through a workshop and site visit. The relocation of the existing development entitlements to the 'racecourse paddock' was supported on the proviso that the relocated lots would not be located within the forest fringe. The relocation of the development entitlements will require an amendment of the exhibited zoning from RU2 to E4 for this part of the property. The high conservation value forest currently zoned E4 in the eastern section of the property would be changed to E2.

Due to the lack of a socio-economic and servicing strategy being received to support the cabin subdivision, it is proposed to "un-defer" this section of the property to the exhibited E4 zoning. Should the owner wish to continue to pursue the subdivision of the cabins, they are able to submit a planning proposal in the future based on the requested socio-economic and servicing studies.

8.2 Strategic Direction for nine Deferred Sites in Bega Valley Local Environmental Plan 2013

The Chairperson asked the Acting Director, Planning and Environment if any new matters had been raised in the address to Council. The Acting Director advised that in his opinion no new matters had been raised. Further the Acting Director provided advice and clarification to Councillors relating to the matters raised.
RESOLVED on the motion of Crs Britten and Fitzpatrick
That Council the matters be dealt with today, and that Item a) Site 1, be dealt with separately.

IN FAVOUR: Crs McBain, Tapscott, Seckold, Britten, Mawhinney, Taylor, Fitzpatrick and Allen

AGAINST: Cr Hughes

109/16 RESOLVED on the motion of Crs Britten and McBain

That in relation to :

a) **Site 1 – Boydtown Property (excluding the area around the Seahorse Inn)**
That the land north of Nullica Short Cut Rd be zoned RU2 (120ha) and E2 (no lot size); the remainder of the land west of the Princes Hwy be zoned E3 (10ha) and E2 (no lot size); and the south eastern section of the property adjoining the Towamba River estuary be zoned E3 (40ha) and E2 (no lot size).

Council adopts the recommendation and defer implementation until 8 August, 2016 to allow the Developer to gain written advice from the Department of Planning that the Department will revisit the E-zones for Boydtown. If such advice is received the matter to be relisted for the meeting to be held on 10 August 2016.

IN FAVOUR: Crs McBain, Tapscott, Seckold, Britten, Mawhinney, Taylor and Allen

AGAINST: Crs Hughes and Fitzpatrick.

Recommendation

Crs Fitzpatrick and Mawhinney

1. That the zoning and lot sizes for Site 1 be as per the previous resolution number 109/16.

a) **Site 1 – Boydtown Property (excluding the area around the Seahorse Inn)**

That the zoning and lot sizes for Sites 2 - 6 be as follows:

b) **Site 2 - Summerhill Rd, South Pambula**
That the land be zoned E4 with a 1ha lot size applied to the substantially cleared, eastern section of the property and a 5ha minimum be applied to the western, more heavily vegetated section of the property.

c) **Site 3 - Princes Highway, South Pambula**
That the site be zoned E4 with a 5ha minimum lot size and the consultant acting for the owner be advised and encouraged to submit a revised Planning Proposal based on this zoning and lot size.

d) **Site 4 - Old Mill Road, Wolumla**
That the land fronting Old Mill Road be zoned E4 with a 2ha lot size. The remainder of the property be zoned E3 with a 30ha lot size.

e) **Site 5 - Princes Highway, Millingandi**
That the land be zoned E3 with a 7ha minimum lot size.

f) **Site 6 - Mandeni, Sapphire Coast Drive**
That the land be zoned and lot sized E4 (1ha), RU2 (120ha) and E2 (no lot size).

2. That staff be authorised to forward Planning Proposals to the Department of Planning for Gateway determination for Sites 1 - 6 as per the zoning and lot sizes resolved above.

3. That following Gateway determination the Planning Proposals be placed on public exhibition and, following the exhibition period, a further report be submitted to Council for incorporation of the subject land into Bega Valley Local Environmental Plan 2013.

Confirmation of E2 and E3 zoning for the Millingandi Site 26 April 2017 to correct the error in the above resolution which excluded the E2 Zoning from the text.

9.3 Confirmation of Land Use Zonings - Millingandi

71/17 RESOLVED on the motion of Crs Tapscott and Dodds

That Council advise the Department of Planning and Environment that it confirms the following zonings be applied to the Millingandi site as follows:

a) **Lot 721 DP 826975, Millingandi**; apply E3 and E2 zones.

IN FAVOUR: Crs Bain, Nadin, Griff, McBain, Seckold, Tapscott, Dodds and Allen

AGAINST: Nil

ABSENT: Cr Fitzpatrick

Attachment 2 - State Environmental Planning Policies

State Environmental Planning Policy		Compliance
SEPP No. 1	Development Standard	N/A
SEPP No. 4	Development without Consent and Miscellaneous Exempt and Complying Development	N/A
SEPP No. 6	Number of Storeys in a Building	N/A
SEPP No. 15	Rural Land Sharing Communities	N/A
SEPP No. 19	Bushland in Urban Areas	N/A
SEPP No. 21	Caravan Parks	N/A
SEPP No. 22	Shops and Commercial Premises	N/A
SEPP No. 26	Littoral Rainforests	N/A
SEPP No. 29	Western Sydney Recreational Area	N/A
SEPP No. 30	Intensive Agriculture	N/A
SEPP No. 32	Urban Consolidation (Redevelopment of Urban Land)	N/A
SEPP No. 33	Hazardous and Offensive Development	N/A
SEPP No. 36	Manufactured Home Estates	N/A
SEPP No. 38	Olympic Games and Related Projects	N/A
SEPP No. 39	Spit Island Bird Habitat	N/A
SEPP No. 41	Casino/Entertainment Complex	N/A
SEPP No. 44	Koala Habitat Protection	Consistent
SEPP No. 47	Moore Park Showground	N/A
SEPP No. 50	Canal Estate Development	N/A
SEPP No. 52	Farm Dams and Other Works in Land and Water Management Plan Areas	N/A
SEPP No. 53	Metropolitan Residential Development	N/A
SEPP No. 55	Remediation of Land	Consistent
SEPP No. 56	Sydney Harbour Foreshores and Tributaries	N/A
SEPP No. 59	Central Western Sydney Regional and Open Space and Residential	N/A
SEPP No. 60	Exempt and Complying Development	N/A
SEPP No. 62	Sustainable Aquaculture	N/A
SEPP No. 64	Advertising and Signage	N/A
SEPP No. 65	Design Quality of Residential Flat Development	N/A
SEPP No. 70	Affordable Housing (Revised Schemes)	N/A
SEPP No. 74	Newcastle Port and Employment Lands	N/A
SEPP	Housing for Seniors or People with a Disability 2004	N/A
SEPP	Building Sustainability Index: BASIX 2004	N/A
SEPP	Major Development 2005	N/A
SEPP	Development on Kurnell Peninsula 2005	N/A
SEPP	Sydney Region Growth Centres 2006	N/A
SEPP	Mining, Petroleum Production and Extractive Industries 2007	Consistent
SEPP	Infrastructure 2007	N/A
SEPP	Temporary Structures 2007	N/A
SEPP	Kosciuszko National Park – Alpine Resorts 2007	N/A
SEPP	Rural Lands 2008	Consistent
SEPP	Affordable Rental Housing 2009	N/A
SEPP	Western Sydney Employment Area 2009	N/A
SEPP	Exempt and Complying Development Codes 2008	N/A
SEPP	Western Sydney Parklands 2009	N/A
SEPP	Coastal Management (2018)	Consistent

Attachment 3 - List of applicable s.117 Ministerial Directions

Section 117 Direction	Compliance
1. Employment and Resources	
1.1 Business and Industrial Zones	N/A
1.2 Rural Zones	Justified Inconsistency
1.3 Mining, Petroleum and Extractive Industries	Consistent
1.4 Oyster Aquaculture	N/A
1.5 Rural Lands	Justified Inconsistency
2. Environment and Heritage	
2.1 Environment Protection Zone	Justified Inconsistency
2.2 Coastal Management	Consistent
2.3 Heritage Conservation	N/A
2.4 Recreation Vehicle Areas	N/A
3. Housing, Infrastructure and Urban Development	
3.1 Residential Zones	N/A
3.2 Caravan Parks and Manufactured Home Estates	N/A
3.3 Home Occupations	N/A
3.4 Integrating Land Use and Transport	N/A
3.5 Development Near Licensed Aerodromes	N/A
3.6 Shooting Ranges	N/A
4. Hazard and Risk	
4.1 Acid Sulphate Soils	Justified Inconsistency
4.2 Mine Subsidence and Unstable Land	N/A
4.3 Flood Prone Land	N/A
4.4 Planning for Bushfire Protection	Consistent
5. Regional Planning	
5.1 Implementation of Regional Strategies	Consistent
5.2 Sydney Drinking Water Catchment	N/A
5.3 Farmland of State and Regional Significance on the NSW Far North Coast	N/A
5.4 Commercial and Retail Development along the Pacific Highway, North Coast	N/A
5.5 Second Sydney Airport: Badgerys Creek	N/A
6. Local Plan Making	
6.1 Approval and Referral Requirements	N/A
6.2 Reserving Land for Public Purposes	N/A
6.3 Site Specific Provisions	Consistent
7. Metropolitan Planning	
7.1 Implementation of the Metropolitan Plan for Sydney 2036	N/A

Attachment 4 – Environmental Assessment for Site 2 – Sapphire Coast Drive, Tura Beach ('Mandeni') 214 Ha Lots 471 & 472 DP1043030

See PDF file entitled

'The proposed Mandeni Neighbourhood Community Lot 472 Environmental Assessment'

attached to this planning proposal.

Commercial-in-Confidence

The Proposed Mandeni Neighbourhood Community
Lot 472

Environmental Assessment

Prepared by *Local Environmental Solutions*
Jim Shields and Elisabeth Larsen
January 2013

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GLOSSARY OF ACRONYMS AND ABBREVIATIONS

BMAD	Bell Miner Associated Dieback
BVSC	Bega Valley Shire Council
DECCW	Department of Environment, Climate Change and Water NSW
CRA	Comprehensive Regional Assessment
EEC	Endangered Ecological Community
EP&A Act	Environmental Planning and Protection Act 1979 NSW
EPBC Act	Environmental Protection and Biodiversity Conservation Act 1999 Cth
FSCBW	Far South Coast Birdwatchers
FM Act	Fisheries Management Act 1994 NSW
KTP	Key Threatening Process
LEP	Local Environmental Plan
LES	Local Environmental Solutions
PVP	Property Vegetation Plan
RFA	Regional Forest Agreement
SRCMA	Southern Rivers Catchment Management Authority
TSC Act	Threatened Species Conservation Act 1995 NSW

1. INTRODUCTION

This Environmental Assessment has been prepared for Mandeni Cabins Pty. Ltd., 489 Sapphire Coast Drive, Merimbula. The report has been prepared by Local Environmental Solutions, an enterprise which conducts research, operations and educational projects involving natural resource management (NRM). LES does some of the same work as NRM consultants, but we operate at a professional level with regard to research approvals, operational capability and educational expertise. We differ from a consulting business in that we use triple bottom line accounting, which takes social and environmental values into consideration as well as economic values.

The Assessment applies to the Mandeni Neighbourhood Community Development Application on Sapphire Coast Drive, near Merimbula, Bega Valley Shire, NSW. The aim of the assessment is to consider the effects on threatened species, endangered ecological communities and other listed biological entities with regard to the development proposal.

The report will address the environmental effects resulting from implementing the Mandeni Neighbourhood Community proposal (Chapter 7, The Seven Part Test).

The Environmental Assessment is structured as follows:
Chapter 2 describes the Development Proposal in terms relevant to biodiversity,
Chapter 3 describes the methods, techniques, sites and resources used to assess biodiversity,
Chapter 4 presents the assessment results,
Chapter 5 discusses the results in terms relevant to impacts on biodiversity,
Chapter 6 provides information on regional conservation and local land management, and
Chapter 7 present the results of the Seven Part Test of Significance for the Threatened Species Conservation Act NSW 1995.

1.1 Summary of Relevant Legislation

The purpose of this Environmental Assessment is to determine if approval can be given for the proposal to proceed in accordance with the relevant legislation and their attendant regulations. These are summarized in dot point form below.

- *Environmental Planning and Protection Act 1979 NSW (EP&A Act)*
  This is the overriding act in NSW for protecting the environment in the course of development activities. It requires consideration of the *Threatened Species Conservation Act*, which is the main focus of this report.

- *Threatened Species Conservation Act NSW 1995 (TSC Act)*
  The TSC Act gives provisions for listing species, populations, ecological communities and key threatening processes on its Schedules as Vulnerable, Endangered, or Critically Endangered. Once listed, the further provisions of this act must be followed with regard

to species, populations, ecological communities and key threatening processes that are listed on its Schedules.

- *Seven Part Test*
  To comply with NSW regulations (previous dot points), an *Assessment of Significance* (Seven Part Test) must be applied to all entities listed on the schedules of the TSC Act. The objective of the Assessment of Significance is to improve the standard of consideration afforded to threatened species, populations and ecological communities, and their habitats through the planning and assessment process, and to ensure this consideration is transparent. The Assessment of Significance is the main objective of this report, and is presented in Chapter 7.

- *Native Vegetation Conservation Act NSW 2003 (Native Vegetation Act)*
  The provisions of this act control the clearing of native vegetation in NSW. The owner/proponent currently has an approved Property Vegetation Plan (PVP) for the construction of infrastructure for this project. The Native Vegetation Act may require a PVP for the further subdivision of the property. This report contains information sufficient to prepare a PVP if this is required.

- *Environmental Protection and Biodiversity Conservation Act 1999 (EPBC Act)*
  This is the act by which the Australian Government protects the environment from a national perspective. It also contains provisions aimed to conserve threatened species and ecological communities. The EPBC Act has a test to determine significance. The provisions of this test are, in the case of this proposal, less rigorous than the Seven Part Test of the TSC Act and consequently, to avoid repetition, the results are not presented in detail in this assessment.

- *Local Government Zoning Regulations*
  The relevant zoning regulations (Bega Valley Shire) will apply to the sub-division, as well as the provisions of the *Local Environmental Plan*. Consideration of the provisions of the LEP will form part of the Assessment of Significance.

2. THE DEVELOPMENT PROPOSAL

2.1 Site Description

Location and Regional Context

The Far South Coast Region of NSW has been variously defined but is generally taken to consist of the Bega Valley Local Government Area or the area covered by the Eden Comprehensive Regional Assessment (Eden Regional Forest Agreement 1999, Keith and Bedward 1999). The latter area (Eden CRA) is useful to consider when assessing environmental impacts as it was logically derived for land management purposes. It is this larger unit that will be referred to in the current Environmental Assessment. As part of the

Eden Regional Forest Agreement, minimum viable populations for listed species were calculated, and these are useful for assessing significant impact for the current proposal. The Mandeni Neighbourhood Community Development Application is located west of Sapphire Coast Drive, 5 km north of Merimbula, Bega Valley Shire, NSW. The subject site for the proposal is approximately 1.5 km west of the Pacific Ocean, on the inland side of the first major rise from Tura Beach. The area is gently to moderately sloping near the ridge (6-8°), becoming much flatter at the bottom of the drainage lines. Soils are typically sandy on the ridge top, tending to skeletal rocky soils down slope where they integrate with much heavier clays and loams on the flat portion of the study area. On the ridges, soils are derived from Ordovician metasediments and Upper Devonian sediments, and on the flatter areas rock parent material is derived from Early Devonian to Middle Devonian sediments (LES data and samples, Scott 1999).

Figure 1: Location of the subject site (detail in red) within the Bega Valley Local Government Area (Wolumla Mapsheet 1:25,000).

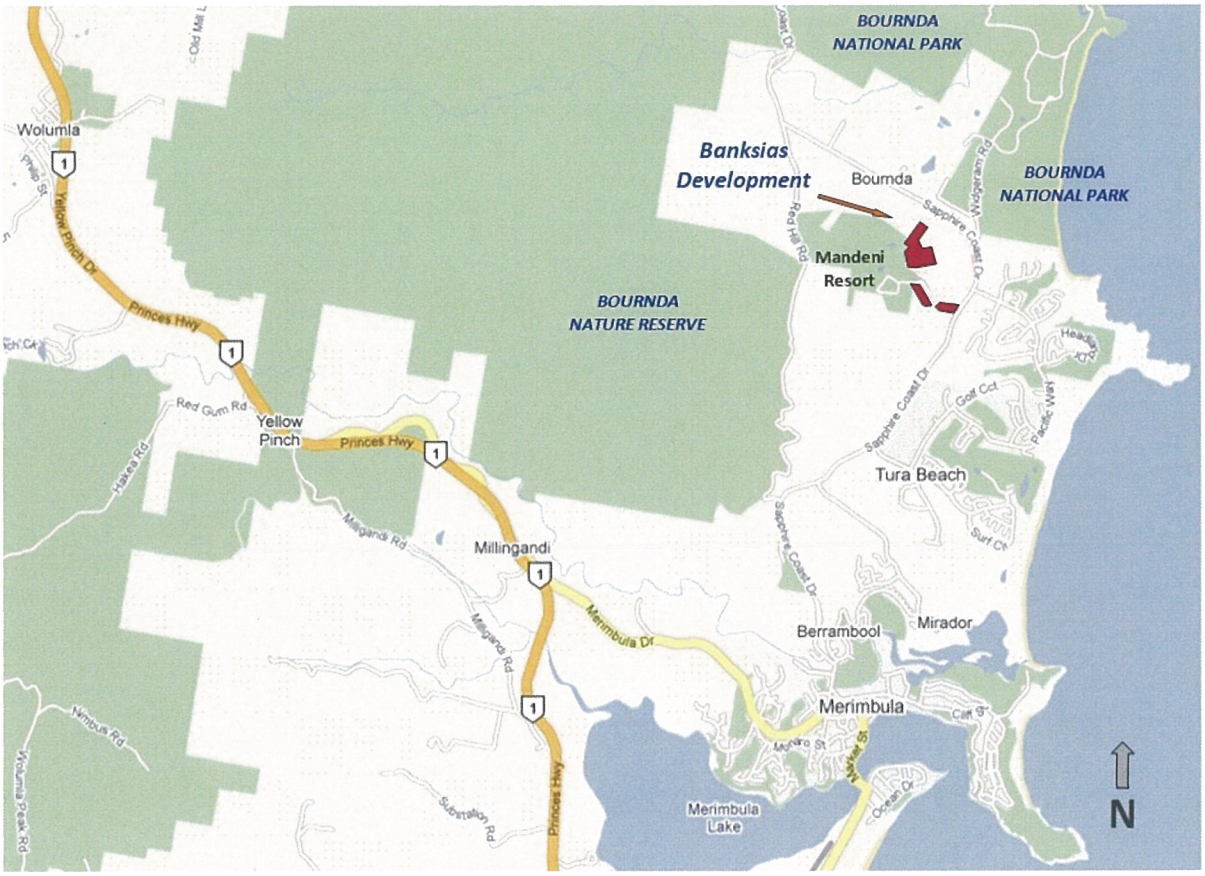


Figure 2: Aerial photograph showing the subject site (detail in red) within the existing urban development of North Tura Beach (Image courtesy of Google Earth).

Land Use

The local area was used extensively by the local Dyirringany Aboriginal people (Keith and Beward 1999) and a large tract of land to the south is now owned and managed by the local Aboriginal Land Council.

Early European use was for timber getting (sleepers, fuel wood for homes and the Merimbula bacon factory, Pambula Buttery, Munn's Maizena) and latterly grazing.

Since 1984, the subject site has been part of Mandeni Resort, a recreation and accommodation facility. To the southwest, 31 cabins have been constructed as well as residences for the manager and owner. Three large water impoundments, a golf course and a net work of bicycle trails have been established in the areas to the west and northwest. Directly northwest of the subject site, two open paddocks are used for grazing cattle. To the west of these is Manna Park, an area managed for its conservation values. It includes open fields (approximately 2 ha), a hostel, a community garden and sheds. However, the main part of the property (approximately 70 ha) is native vegetation managed for conservation. Manna Park is adjacent to and contiguous with Bournda Nature Reserve.

Biodiversity

The subject site and study area for this report supports a diverse range of wildlife. The Far South Coast Birdwatchers (FSCB) have listed 135 species of birds prior to this study, and

there are at least 14 species of native mammals recorded. Feral and introduced species include the Red Fox (*Vulpes vulpes*) and European Rabbit (*Oryctolagus cunniculus*). Feral Cats (*Felis cattus*) occur in the area, as well as stray dogs, and the Dingo (*Canis familiaris dingo*) has been recorded in recent times (R. High pers. com., photograph circa 1994). Very high numbers of Eastern Grey Kangaroos (*Macropus giganteus*), Red-necked Wallabies (*M. rufogriseus*), Australian Wood Ducks (*Chenonetta jubatta*) and rabbits occur, due to the watered grass on the golf course and natural grazing in open areas. This assessment provides documentation of the biodiversity present in and around the study area.

2.2 Proposal Description

The proposed subdivision consists of 21 lots ranging in size from 6 188 m^2 to 5 148 m^2 and occupies 11.3 ha in total. These lots are to be developed as the Mandeni Neighbourhood Community ("Mandeni Community") (see **Figure 3** and **Figure 4**).The proposed Mandeni Community will be separated from the current Mandeni Resort.

The subdivision was designed to maximise retention of mature trees and native understorey, while complying with bush fire management requirements. Lots have been kept as small as possible to allow a reasonable building site and Asset Protection Zone (APZ) without impacting significantly on the existing environment. Lots have been located in areas that will avoid harm to the existing flora and fauna.

Mandeni Community will be held under Community title as opposed to Freehold title.

Figure 3: Indicative lot layout of the proposed subdivision of Lot 472 (Mandeni Community). Wolumla Mapsheet, 1:7,500.

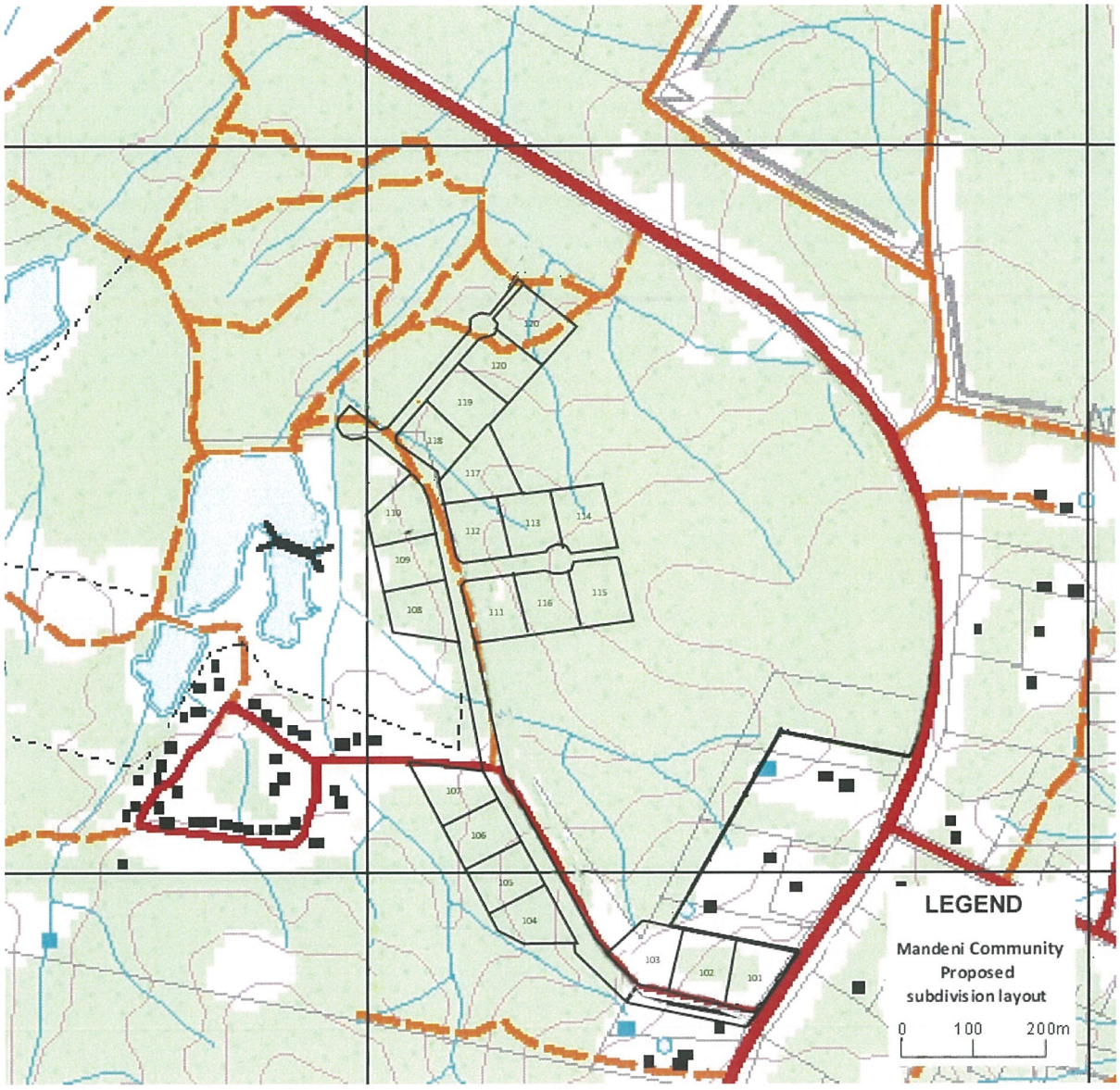
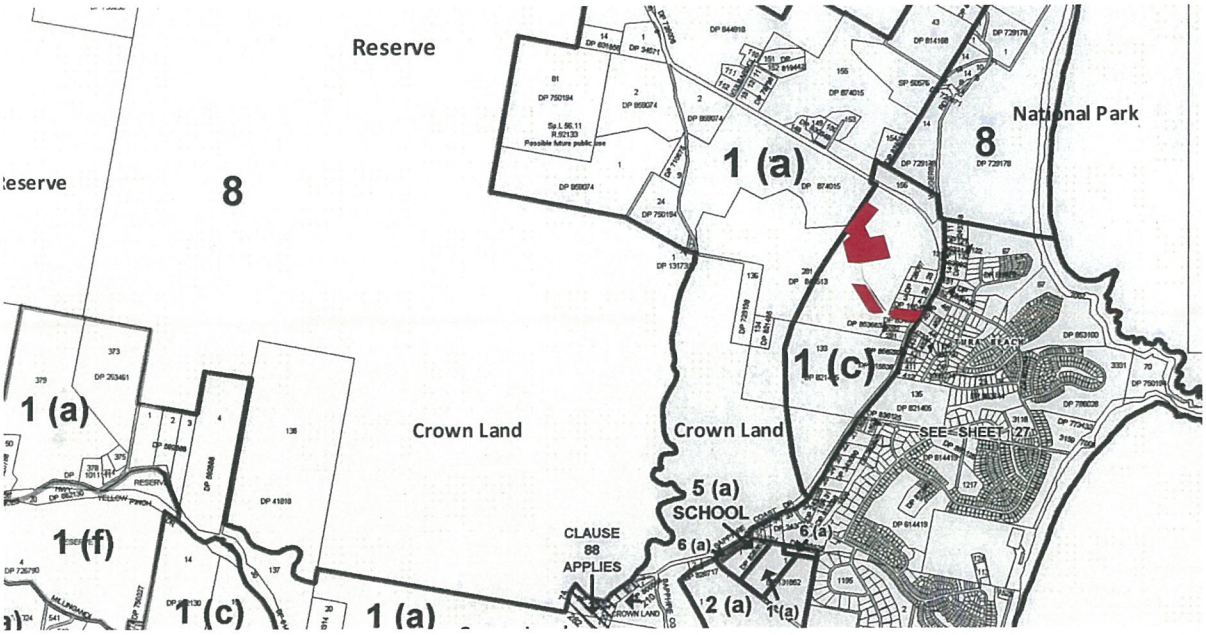


Figure 4: Indicative lot layout of the proposed subdivision of Lot 472 (Mandeni Community). Aerial photograph. Image courtesy of Google Earth.

Figure 5: Location of the subject site on the Composite Field Zoning Map, Local Environmental Plan, Bega Valley Shire Council. (Wolumla Mapsheet, 1:7,500).



2.3 Development Activities

Site Preparation and Construction

Building activities will conform to the site plan set out by Caddy, Searl and Jarman 2012 (see **Figure 6**). An access road will be constructed by the current owner. Power supply to the development will be installed according to the site plan prepared by Caddy, Searl and Jarman (2 October 2012).

Dwellings will be constructed on site following government regulations for construction, on-site sewer facilities, on-site water supply and fire management. Vegetation will be cleared to create building sites, lawns, gardens and appropriate Asset Protection Zones (APZ). Due to the large size of each block, it will not be necessary to remove all native vegetation. Forest structure and continuity will be retained by confining the building envelope and APZ to the front of each building block (see **Figure 6**). It is anticipated that the total APZ for each lot will be 30 m.

Building activities will conform to the plan set out by Caddy, Searl and Jarman (2 October 2012) as shown in **Figure 6** in this document.

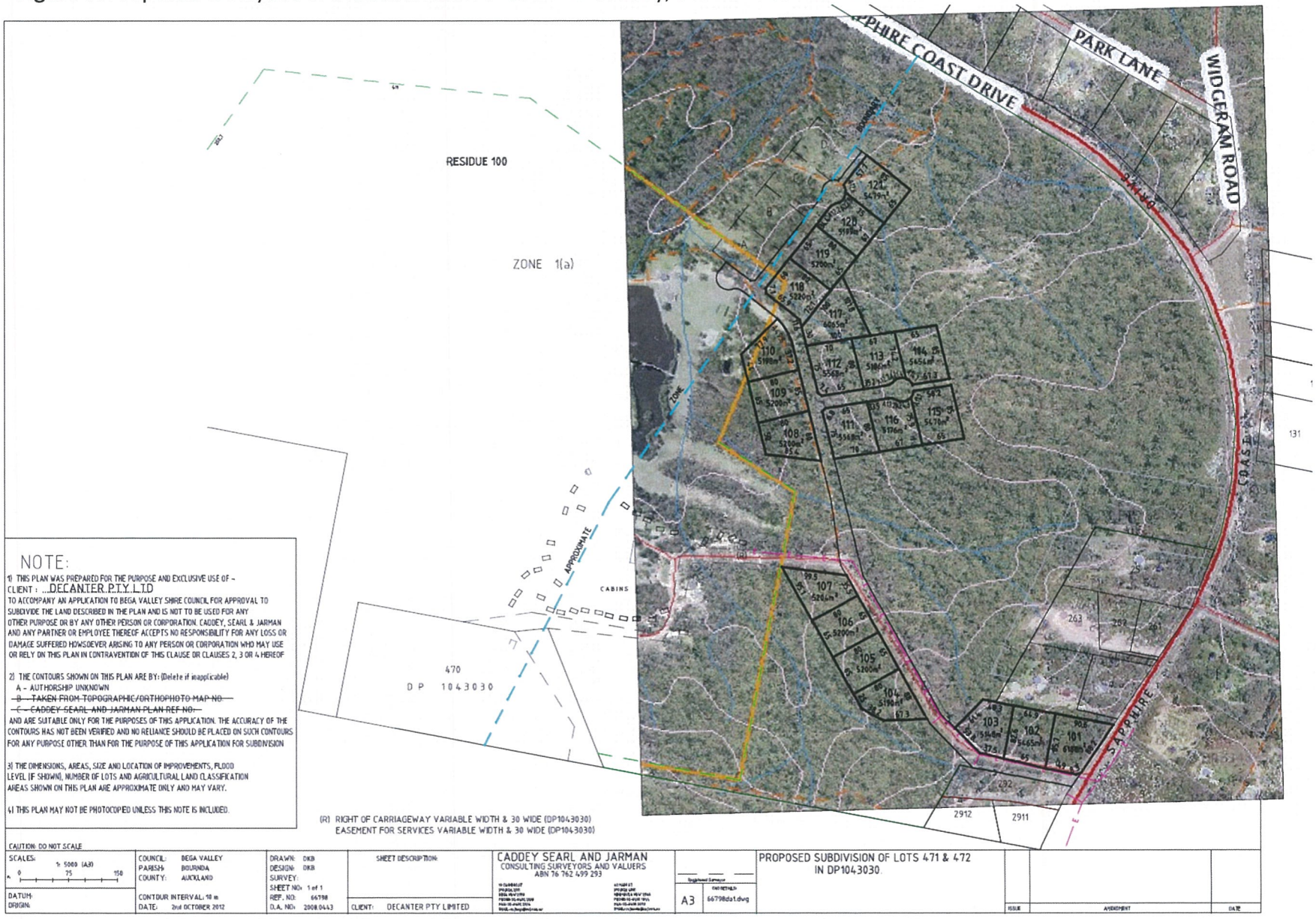
Long Term Use and Conservation Planning

The Mandeni Community will be used for permanent housing. It is intended to complement and enhance the natural vales of the surrounding public and private property. The blocks are suitable for retirement living.

In the first instance, the proponent would prefer to put in place a covenant restricting pets (dogs or cats) as a condition of purchase. The Mandeni Community can establish this through neighbourhood rules which are proposed to include a prohibition on fences that restrict wildlife movement. Dog ownership will be limited to one per lot and buried cables will be allowed for their control. This is practicable for the Mandeni Community but would be difficult to implement in a subdivision with normal Torrens title provisions.

This plan includes provisions to protect flora, fauna and native vegetation by retaining key areas throughout the subdivision and by management plans for threatening processes. Old growth attributes are protected by a continuous band of forest (200+metres in width) along Sapphire Coast Drive (**Figure 6**). East-west habitat connection occurs at the ends and through the subject site. These retained areas have been planned to include significant environmental features using information acquired for the long-term management of the property and in the course of this Environmental Assessment. Habitat features which are permanent (stream courses, native riparian vegetation) or which take long time periods (>80 years) to regenerate such as tree hollows were used to select areas for retention within the proposal. All or most of these areas are suitable for building blocks within normal standards for construction and have been retained for their nature conservation values as part of the planning process. Key threatening processes (Loss of Tree Hollows, Predation by the Red Fox, Bell Miner Associated Dieback) are addressed through funded management plans. The following sections detail the logic and data on which these plans were made as required by the 7 Part Test.

Figure 6: Proposed lot layout of the subdivision of Lot 472. Caddey, Searl and Jarman 2012.



3. ENVIRONMENTAL ASSESSMENT: METHODOLOGY

3.1 Literature Review and Data Acquisition

Literature

Results from the Comprehensive Regional Assessment (CRA) of 1997, Eden Forestry EIS (1996), Department of Environment and Climate Change (DECC) Wildlife Atlas, and the Southern Rivers Catchment Management Authority (SRCMA) were searched for species listed on the Schedules of the *NSW Threatened Species Conservation Act (1995).* Relevant scientific literature was consulted including unpublished reports (as noted in the bibliography of this document). The records of the Far South Coast BirdWatchers (FSCBW) for this area were assembled and individual members were interviewed for personal notes on rare species and habitat use.

Previous Field Surveys

The Mandeni-Manna Park properties have been the subject of many formal and informal biodiversity surveys over the past 15 years. The owners are personally interested in nature conservation and have supplied information to inform this report. Local naturalists and naturalist groups have visited the area and supplied information to enhance management for conservation value. Students from the University of New South Wales and Macquarie University have carried out field trips to study flora and fauna on the subject site and the study areas since 2005. The flora and fauna have been assessed on-site by transect based botanical surveys (2006-2007), transect based bird surveys (2005-2010), bird banding (2005-2010), and nocturnal surveys (2007, 2010) for fauna.

Previous General and Historical Surveys

The biodiversity and environment features of Mandeni and Manna Park have been documented by the current owners and local interest groups. The data and information from these general or historical surveys has been documented as described below. The specific surveys carried out by LES are described in the next section (3.2).

Assessments of Habitat and Forest Health

The habitat and forest health of the property has been assessed by its owners and various consultants since 1988. The results of these assessments have been recorded in interviews and incorporated into this assessment. In addition, historical data has been acquired by interviews with older residents of the district and local residents.

Flora inventories

Since 1988, plants have been sampled and assessed on an ad hoc basis by the owners, local orchid enthusiasts and other groups interested in natural history.

Amphibians and Reptile Searches

An assessment of potential and actual amphibian populations on the property was made in 2004 (LES 2005).

LES personnel and other naturalists have compiled records of notable reptiles on site since 2004. The owners and managers of Mandeni Resort and Manna Park Hostel have been interviewed to obtain notable and reliable information on reptiles, particularly the larger snakes and lizards.

Bird surveys

The study area has been the site of many official field trips and individual visits by members of the Far South Coast BirdWatchers Club since it started in 1996. The owners and managers have contributed information, particularly with regard to nests, roosts and feeding areas used by birds.

Birds were sampled on site by direct observation during the course of all work.

Mammal surveys

Pest mammals have been managed on the property and consequently some assessment of their population size and distribution has been conducted by the owners of Mandeni and their employees. Specifically, introduced species (fox, cat, dogs, rabbits) have been identified and measures taken to eradicate them, whilst Macropods (primarily the Eastern Grey Kangaroo and to a lesser extent the Red-necked Wallaby) have been assessed with regard to pastured damage. The Common Wombat is a favoured species on the property and their presence has been noted by the owners and their employees since 1988.

3.2 Survey Location and Timing

The study area for Environmental Assessments is defined as the area where both direct and indirect impacts will occur, and the subject site is defined as the area where development impacts will be direct e.g. where the development will take place. LES conducted a gap analysis after reviewing the general and historical information, and then defined the study area for this Environmental Assessment. The study area was defined as Mandeni and Manna Park plus the 200 m that adjoin the property boundaries. This study area definition was derived from the territory sizes of the relevant fauna, the type of development and the current human footprint in this part of the Bega Valley Shire.

All of the current surveys described below were conducted between 1 February 2010 and 1 May 2010. Although this was late summer-early autumn, temperatures were warm (15-30^{o} C). Migratory species of birds were present on the study area and in the district generally (the Rufous Fantail for example) up until mid-April. There were several large rainfall events, which created abundant surface water, and, with the warm temperatures provided excellent conditions for surveying insectivores such as bats and frogs. The high rainfall caused an out-of-season flowering event for many plants, which assisted with flora surveys. The flora data for this report was largely compiled historically by LES in the course of other projects (September 2005, November 2006, December 2007), and the current surveys were used to supplement that data set.

3.3 Survey Methodology

To complete the specific environmental surveys for the Mandeni Community Neighbourhood Development, plot based surveys were used as well as targeted surveys to locate listed biological entities and other environmental features of interest (habitat trees, feed trees, owl roosts, and bandicoot/potoroo digs amongst others). Plot based surveys allow for more accurate estimates of population size (abundance) and extent of occurrence (distribution).

Each study plot consists of a transect 500 m in length. A sample point is established 50 m from the start of the transect (Point 1) and Points 2-5 are then established at 100 m intervals. The transect ends 50 m past Point 5. In the field, flagging tape and reflective tape are used to mark Points 1-5, the start, and the end of the transect. Habitat assessment and forest health measurements were taken at each point. Fauna surveys were undertaken along transects and at the points as described in the following sections (see **Appendix A: Location of survey transects**).

Many important habitat resources occur sporadically across the landscape and are not well-sampled by plot based surveys. To target these important environmental features, all gully lines were searched for signs of bandicoot/potoroo (conical digs) and owl roost/nest sites. Stands of Allocasuarina were searched for Glossy Black Cockatoo feed trees (e.g. Allocasuarina trees with more than 20 crushed cones) (Clout 1989). Specific notes on tree species, understory species and the ground layer of vegetation were taken to facilitate identification of vegetation communities. These features were noted when encountered in the course of other works as well.

Other targeted surveys are discussed in the sections below.

3.4 Targeted Surveys

Habitat Parameters and Forest Health

Habitat parameters and forest health were measured on all plots. At each Point along transects, forest mensuration data was collected on the 10 nearest canopy trees (diameter at breast or DBH, height, and health assessment). This method allows the calculation of stems per hectare (tree density) and basal area (the area covered by tree stems within each hectare). The ground and shrub vegetation was measured on a ten square metre plot at each of the points. Measures taken were: total plant species, ground cover, shrub index, leaf litter, fallen debris, logging debris and eucalypt regeneration (seedling count).

- Total plant species (TPS) is a count of all plant species occurring within the 10 metre square sample plot.
- Ground cover is an assessment of the total amount of plant cover less than 1 metre in height within the sample plot ranging from 1 (bare ground) to 4 (full ground cover).
- Shrub index (1-3 m) is also an assessment of vegetation density, where 1 indicates open space with no shrub cover and 4 means that the understory is completely closed (no visible space between shrubs).

- Vigour is an assessment of tree health, where 1 indicates that the tree is dead or dying (less than 90% canopy present), 2 indicates a tree in poor health (89-50% dead canopy), 3 means moderate to good health (49-10% dead canopy) and 4 indicates a tree with no die back or dead branches (9-0% dead canopy).
- Leaf litter index is an assessment of the area of the sample plot that is covered by leaves, ranging from 1 (zero or very little) to 4 (full cover by leaf litter).
- Fallen debris index is an assessment of the area of the sample plot that is covered by fallen woody debris, ranging from 1 (zero or very little) to 4 (full cover by fallen debris).
- Logging debris index is an assessment of the area of the sample plot that is covered by logging debris ranging from 1 (zero or very little) to 4 (full cover by logging debris).

Hollow Trees

The hollow tree resource on the subject site was measured by direct count. Two observers traversed the entire area in March 2010 and recorded the tree species, diameter at breast height over bark (DBH), height, vigour (as described above), and size of hollow. As this requires inspection of all large trees, Yellow-bellied Glider feed trees were searched for at the same time.

Assessment of the hollow resource in the study area was carried out by an experienced observer (J. Shields) traversing the terrain on foot, by road and by bicycle. Bournda Nature Reserve to the west and north, adjoining parts of the community of Tura Beach, Vacant Crown Land (VCL), land owned by the Aboriginal Council to the south and Crown Land to the east of Sapphire Coast Drive and south of Tura Beach Shopping Centre were traversed. Spot counts of hollows were made and an annotated map was prepared.

Vegetation

The subject site has been surveyed by transects (LES 2005, this report) where all species of plants encountered were identified and given an abundance rating. This information was used to identify ecological communities and occurrence of listed plants. Random meanders were conducted across the entire Banksias development area to further identify areas where plants of interest occur (LES 2009-10).

Amphibians and Reptiles

Amphibians were the subject of targeted surveys in February, March and April 2010. Frog surveys were conducted on nights directly after or during rainfall events. Spotlight and call playback surveys were carried out at all major water bodies near the site and on the project area. Forty pit traps were installed to sample both reptiles and amphibians (see **Appendix B1: Location of pit traps**). Reptiles were targeted in the random meander surveys of the entire subject site.

Birds

The avian community was surveyed along transects by recording all birds seen and heard at each point. The distance from the point to the bird was estimated and recorded in pre-set distance categories (0-5m, 5-10 m, 10-20 m, 20-30 m, 30-50 m) in corresponding columns on

a data sheet. Birds seen or heard beyond 50 m from the point were noted but not counted individually. At least two counts were made on all transects.

Targeted surveys were made along creek lines and in all moist areas (tea-tree) on the study area to find listed species associated with these habitats (Eastern Bristle-bird (*Dasyornis brachypterus*), Eastern Ground Parrot (*Pezoporus wallicus wallicus*), and Turquoise Parrot (*Neophema pulchella*). Open areas were searched for listed woodland species such as the Speckled Warbler (*Chthonicola sagittata*) and Diamond Fire-tail (*Stagonopleura guttata*).

Terrestrial Mammals

Mammals were surveyed with a variety of techniques. Elliot traps were used to survey small mammals (<250g) and cage traps were used to survey medium sized species. Elliot traps were set on Transects 2 and 6. Traps were clustered in two locations in high quality habitat along creek lines on Transect 6. One cluster of traps was set in similar riparian habitat on Transect 2, whilst the second cluster was located in wetland/forest between Point 2 and 3. Five cage traps were set in conjunction with each cluster of Elliot traps (see **Appendix B2: Location of mammal traps**).

Terrestrial mammals were also recorded when they were observed during the spotlight surveys described below.

Arboreal Marsupials and Nocturnal Birds

Arboreal marsupials were sampled by spotlighting on Transects 2, 3, 4, 6 and 7. Call playback surveys were carried out at the same time. Surveys were conducted between 1 March and 30 April 2010. Each survey started after night-fall (when colours cannot be discerned). Calls of the Yellow-bellied Glider and Koala were played from a portable CD player as well as the calls of the Powerful, Barking, Masked and Sooty Owls (the Barking Owl only in suitable open areas near Transect 2). Transects were walk-spotlighted at the rate of 10 minutes per 100 m, excluding recording time for observations.

Bats

Bats have been surveyed in the study area during field trips by Macquarie University (2006, 07, 08, 09) primarily using ultra-sound technology (ANABAT® recorders and data loggers). These recording were made at the Manna Park Hostel, 1700 m to the northwest of the subject site.

For the purpose of this assessment, bats were surveyed on the subject site using harp traps (Tideman and Woodside 1978). One trap was located at the top of the ridge between Transect 6 and Transect 7. The other trap was located in ti tree-swamp sclerophyll forest between Point 1 and Point 2 on Transect 2 (see **Appendix B2: Location of harp traps**).

Traps were opened on 4 March 2010 and closed on 8 March 2010.

Scat and Sign Survey

The subject site was surveyed for introduced mammals, quolls and dingoes with searches for scats, tracks and other signs (prey remains, owl pellets) from Dec 2009 to April 2010. To obtain some estimate of abundance, 4 timed searches (1 hour) were conducted on Transects 2, 3, 4, 6 and 7 in March 2010. The entire transect was searched for scats and tracks. The latter were targeted by searching portions of the transect that has sandy or moist soils.

4. ENVIRONMENTAL ASSESSMENT: RESULTS

4.1 Vegetation

The botanical surveys documented the occurrence of 144 plant species. The plant species found are listed in **Appendix C**. Only one species is listed as *Vulnerable* on the TSC Act, the Merimbula Star-hair (*Astrotricha Wallagaraugh*), which was found to be relatively uncommon across the subject site, and common to abundant across the rest of the study area.

Orchids

Orchids are difficult to survey as they are inconspicuous most of the year and then only flower briefly. Many orchids are listed on the Schedules of the TSC ACT, including the Leafless Tongue Orchid (*Cryptostylis hunteriana*) which is predicted to occur on the study area. To ensure that the entire suite of orchids is found, surveys of a site over several flowering seasons are necessary (Bishop 1996). LES identified an orchid enthusiast (H. Robinson) who has inspected the access road on most work days over the past six years (2004-2010). On 29 April 2010, we conducted a field search with her to identify locations where orchids flower regularly (see **Table 1**). The Leafless Tongue Orchid was not found.

Table 1: Orchid species list

Common name	Scientific name	Grid Reference (WGS84)
Donkey Orchid Wax Lip Orchid Bronze Beak Orchid	*Diuris spp* *Glosso spp* *Lyperanthus suaveolensdia*	7760518 5917820
Large Tongue Orchid Parsons Band Orchid	*Cryptostylis subulata* *Eriochilus cucullatus*	7760402 5917834
Parsons Band Orchid	*Eriochilus cucullatus*	7760334 5917903
Flying Duck Orchid Copper Bearded Orchid Pink Fingers Orchid	*Caleana major* *Calochilus campestris* *Caladenia carnea*	7760319 5917986
Large flying duck orchid Large Tongue Orchid Copper bearded Orchid	*Caleana major* *Cryptostylis subulata* *Caleana major*	7760081 5918127

4.2 Ecological Communities

At least 5 recognisable ecological communities occurred on the study area out of the 90 (approximately) that have been described in the literature (primarily Keith and Bedward 1999, Miles 2007) (see **Figure 7**). These are:

Coastal Dry Shrub Forest (Type 32)
This type occurs at the bottom of the slope of the ridge on the eastern boundary of the study area, where it integrates with *Lowland Dry Shrub Forest* upslope and *River Flat Eucalypt Forest* downslope. It occurs adjacent to and intermingles with *Bega Wet Shrub Forest*. The vegetation type also occurs on the northern edge of the subject site. Indicator species for this type, found on the subject site, are Woollybutt (*Eucalyptus longifolia*), Yellow Stringybark (*E. muelleriana*), Hickory Wattle (*Acacia falciformis*), Black Sheoak (*Allocasuarina littoralis*), and the Blue Flax Lily (*Dianella caerulea*). It has been estimated that this vegetation type originally covered 24,500 ha on steep dry slopes of the coastal foothills mostly on Ordovician meta-sediments, of which only 5% has been cleared. It is well represented in current reserves (24%). ForestsNSW manages 75% of the remainder three-quarters where threats are low, and the remaining one-quarter on private lands, where it is under moderate threat from clearance. This vegetation type is endemic to the region and restricted elsewhere. Effects from this proposal will be indirect.

The stands of this ecological community on the study area are regrowth from extensive ring-barking and felling approximately 60 years ago (as indicated by stumps and dead stags). A few large live trees were retained in past operations and many large dead trees are still standing after ringbarking. One area (approximately 1 ha) has been cleared recently (between Dec 2005 and Oct 2006, Google Earth) and supports vigorous regrowth (primarily Wollybutt). In this area, at least two individual specimens of hybrid *C. gummifera / C. maculata* occur.

Bega Wet Shrub Forest (Type 19)
This type also occurs at the bottom of the eastern slope of the study area, where it integrates with *Lowland Dry Shrub Forest* upslope and *River Flat Eucalypt Forest* downslope. Indicator species for this ecological community, which occur on the subject site, are *Eucalyptus elata* (River Peppermint), *E. bosistoana* (Coastal Grey Box), *Angophora floribunda* (Roughbarked Apple), and *Acacia mearnsii* (Black Wattle). This type occurs on sheltered slopes within drier areas on granite and meta-sediments at 40-180 m elevation (Keith and Bedward 1999, Binns 1987). It is possible that there were 47,700 ha present in the Eden CRA area before European settlement and of this 65% has been cleared. It is not well represented in existing reserves (4%). The remaining 31% is found on private land where it is under a high level of threat from clearing, grazing and weed invasion. This proposal will not impact directly on this vegetation type (Fig. 6, Fig. 7///)

Lowland Dry Shrub Forest (Type 46B)
This vegetation type occurs along Sapphire Coast Drive at the east of the study area along the top of the ridge. Lowland Dry Shrub Forest extends down from the road/ridge line for

about 150 m to the west. Indicator species for this type, found on the subject site, include Red Bloodwood (*Corymbia gummifera*), Silvertop Ash (*Eucalyptus sieberi*), Blackbutt (*E. pilularis*), White stringybark (*E. globoidea*), Roughbarked Apple (*Angophora floribunda*), Sunshine Wattle (*Acacia terminalis*), *Correa reflexa,* Black sheoak (*Allocasuarina littoralis*), Hairpin Banksia (*Banksia spinulosa*), Common Heath (*Epacris impressa*), Rice Flower (*Pimelea linifolia ssp linifolia*), and Thyme Pink-bell (*Tetratheca thymifolia*). In the Eden CRA area, it is possible that 16 000ha occurred, generally on Devonian meta-sediments or Tertiary alluvium. It is found near the coast and into hinterland areas up to 250m (Keith and Bedward 1999, Miles 2007). About 5% has been cleared and 40% is contained in reserves. About two-thirds of the remainder is in State Forests and the rest is on private land. This private land is under moderate threat from clearing. The subject site for this proposal is located primarily within this vegetation type.

River-flat eucalypt forest on coastal floodplains of the NSW North Coast, Sydney Basin and South East Corner bioregions (Endangered Ecological Community)

This vegetation type community is on the flat topography to the north and west boundary of the subject site. This area supports the Endangered Ecological Community "River-flat eucalypt forest on coastal floodplains of the NSW North Coast, Sydney Basin and South East Corner bioregions" It is described by DECCW 2010 as:

> "As the name suggests, this EEC is found on the river flats of the coastal floodplains. It has a tall open tree layer of eucalypts, which may exceed 40 m in height, but can be considerably shorter in regrowth stands or under conditions of lower site quality. While the composition of the tree stratum varies considerably, the most widespread and abundant dominant trees include *Eucalyptus tereticornis* (forest red gum), *E. amplifolia* (cabbage gum), *Angophora floribunda* (rough-barked apple) and *A. subvelutina* (broad-leaved apple). *Eucalyptus baueriana* (blue box), *E. botryoides* (bangalay) and *E. elata* (river peppermint) may be common south from Sydney, *E. ovata* (swamp gum) occurs on the far south coast, *E. saligna* (Sydney blue gum) and *E. grandis* (flooded gum) may *occur north of Sydney, while E. benthamii is restricted to the Hawkesbury floodplain.*
>
> A layer of small trees may be present, including *Melaleuca decora, M. ericifolia, M. styphelioides* (prickly-leaved teatree), *Backhousia myrtifolia* (grey myrtle), *Melia azaderach* (white cedar), *Casuarina cunninghamiana (river oak) and C. glauca (swamp oak).*
>
> Scattered shrubs include *Bursaria spinosa, Solanum prinophyllum, Rubus parvifolius, Breynia oblongifolia, Ozothamnus diosmifolius, Hymenanthera dentata, Acacia floribunda* and *Phyllanthus gunnii.*
>
> The groundcover is composed of abundant forbs, scramblers and grasses including *Microlaena stipoides, Dichondra repens, Glycine clandestina, Oplismenus aemulus, Desmodium gunnii, Pratia purpurascens, Entolasia marginate (Entolasia stricta), Oxalis perennans* and *Veronica plebeia*. The composition and structure of the understorey is influenced by grazing and fire history, changes to hydrology and soil salinity and other disturbance, and may have a substantial component of exotic shrubs, grasses, vines and forbs. "

This vegetation type occupies most of the area to the north and east of the proposed Mandeni Community, occurring on the creek flat that flows from west to east through the study area. It is intermingled with very small patches of the vegetation type *Floodplain Wetland* (discussed in the following section). Stand structure indicates that the vegetation has been partially and sporadically "opened up" for grazing by ring-barking, and there has been some harvest for timber products, as indicated by stumps from both chain-saw and

hand felling. However, large remnant stems are abundant, particularly of Woollybutt (*E. longifolia*). Many stems indicate by their size and growth form that they are over 180 years' old, thus pre-dating European settlement. There are also many dead stems as a result of recent (post 1985) Bell Miner Associated Dieback (LES 2005). Most of this area is retained as native vegetation as an offset in the CMA Vegetation Management Plan.

Floodplain Wetland (Type 60)

This community occurs in drainage lines on heavy organic clay soils in coastal areas and in the farming areas of the Bega Valley. It may consist of sedge or rush beds, grassy or sedgy wet meadows or dense thickets of swamp paperbark (*Melaleuca ericifolia*). It is reduced at present by clearing for agriculture and by gully incision into formerly swampy drainage lines. Very small patches (<100 m^2)of this vegetation type occurs on the subject site intermingled with the preceding vegetation type, "River-flat eucalypt forest on coastal floodplains of the NSW North Coast, Sydney Basin and South East Corner bioregions". The wetland on the subject site appears to be in relatively good condition with few weeds or introduced pasture grasses. The total extent of Type 60 vegetation is > 0.5 hectares. This proposal will effect this vegetation type directly.

Figure 7: Distribution of vegetation communities after Keith and Bedward (1999).

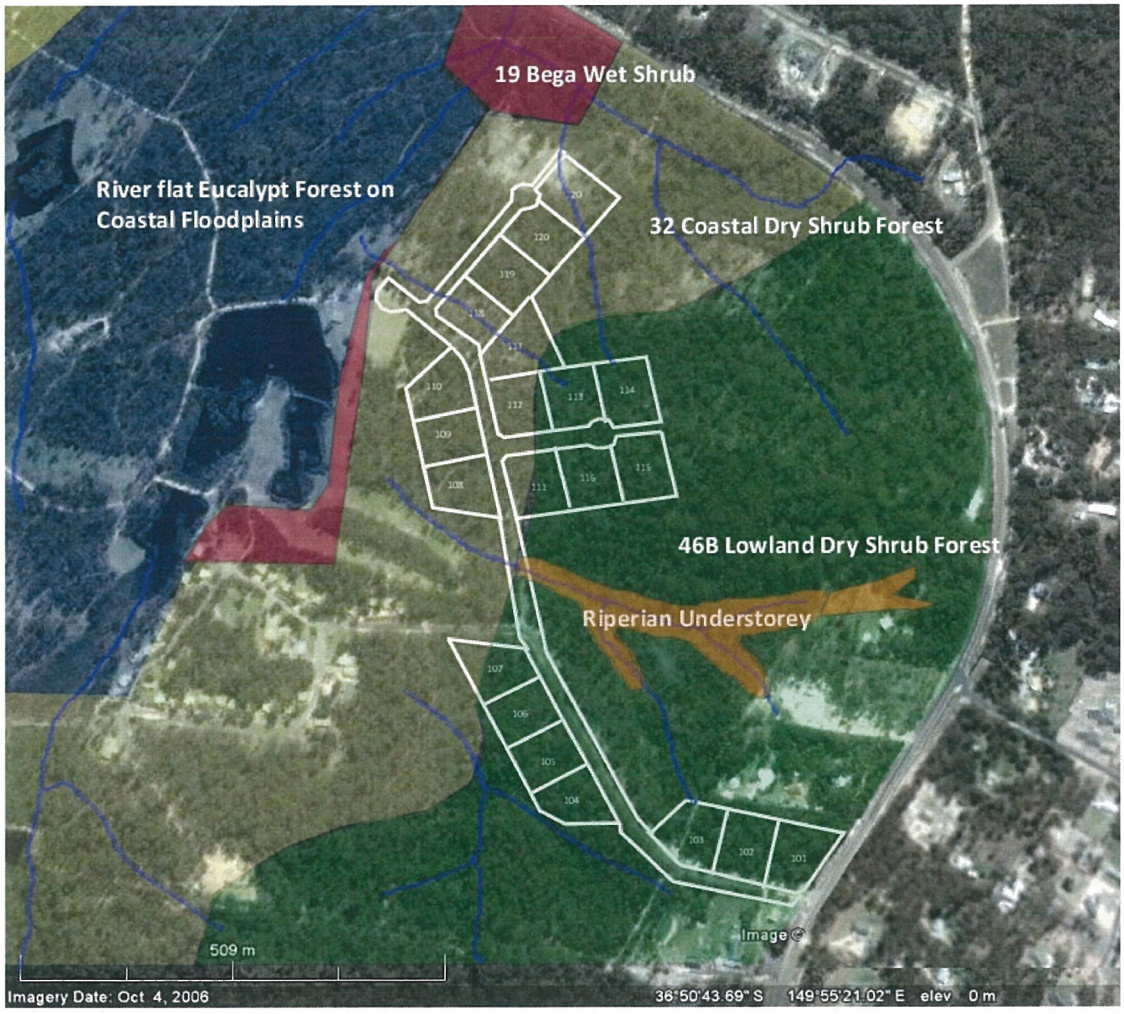
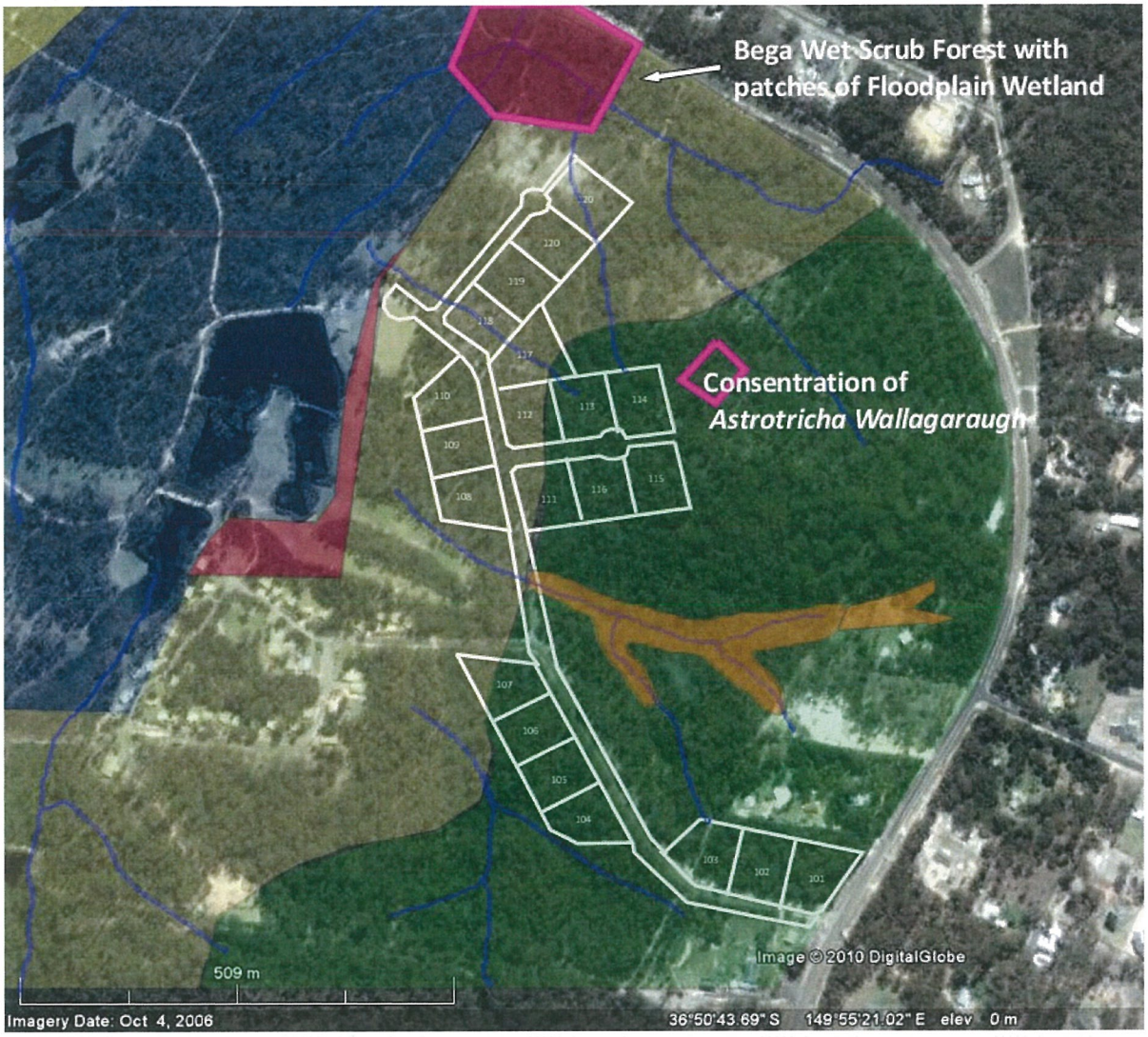


Figure 8: Distribution of vegetation communities after Keith and Bedward (1999) with proposed lot layout. Significant areas of vegetation outlined in pink.



19 Bega Wet Shrub Forest

River flat Eucalypt Forest on Coastal Floodplains

46B Lowland Dry Shrub Forest

32 Coastal Dry Shrub Forest

Significant areas of vegetation

Riparian Understorey

4.3 Habitat Features

Introduction

A variety of habitat features were measured to inform decisions about the significance of the proposal on the habitat of flora and fauna present on the site. This is required by the 7 Part Test. It is necessary to measure extent and quality of habitat present on the subject site and in the study area before an assessment of significance can be made. Habitat is defined as the biological and physical resources necessary to maintain a population of a species in a particular area. These resources are food, shelter and the opportunity to reproduce.

Habitat features or elements that provide these resources have already been discussed in terms of vegetation characteristics in previous sections. Here we present the results of measurements of three habitat features: Ground Cover, Sub-canopy and Shrubs, and Habitat Trees.

Ground Cover

Ground cover (plants less than 0.5 m in height, fallen debris, down logs) is variable across the study area, but in all places (except roads and lawns) occurs at rates normally found in similar stands of undisturbed natural vegetation. The ground layer is more open on areas closer to the ridge line along Sapphire Coast Drive (Lowland Dry Shrub Forest). The subject site occurs in this part of the studya area. The ground layer is very dense on the lower slopes and flat areas (River Flat Forest, Floodplain Wetland) where edaphic moisture is high. In these areas, dense stands of wiregrass (*Tetrarrhena juncea*) and bracken (*Pteridium esculentum*) occur, as well as other native grasses, sedges and moisture-adapted shrubs. Due to 1) natural accumulation, 2) debris from ring-barking and die-back and 3) natural mortality, there is copious large woody material throughout the subject site including large hollow logs on the ground.

Sub-canopy and Shrubs

The entire study area has a well developed sub-canopy. This is comprised of *Banksias spp., Allocasuarina littoralis,* and *Acacia spp.* up to 8 m in height with DBH ranging from 20 to 50 cm on the drier up-slope areas to the southeast and reaching 80 cm for some Banksias in moist areas. The shrub layer (1-4 m) in the mesic, undulating southeast section of the study area is very sparse, comprised of small wattles (*Acacia* spp), *Bursaria spinosa, Banksias* spp., Narrow-leaved Geebung, *Persoonia linearis* and *Grevillea* spp. The subject site is located in the mesic southern mid-slope part of the study area. In the flat, moist northwest section of the study area, the sub-canopy consists of regrowth stems of the Eucalypt species present, Muttonwood (*Rapaena* spp.), and large ti-tree stems (*Melaleuca* spp.) The shrub layer here is an extremely dense thicket of Ti-tree (*Melaleuca spp*) and Wattle (*Acacia* spp.) comprised of stems up to 20 cm in diameter and ranging from 2 to 5 m in height.

Habitat Trees

Habitat trees are canopy trees that contain hollows visible from the ground. Trees in this category with large healthy crowns provide more resources (food from insects or nectar) than trees with poorly developed or dead crowns.

The results of the hollow survey for the portion of the study area within the current property Mandeni (excluding the Golf Centre, the Race-course Paddock and other cleard areas) are presented in **Figure 9** and **Appendix F**. A total of 384 hollow bearing trees were found, primarily in Red Bloodwood (*Corymbia gummifera*, n=217, i.e. 56.5%), in dead stags (n=103, 26.8%), followed by Silvertop Ash (*Eucalyptus sieberi,* n=26, 6.8%).

The distribution of hollow bearing trees was determined by the presence of older (larger) bloodwoods, the presence of dead stags, and higher elevation (i.e. farther away from Red Hill Road). These conditions were found in three main concentrations: in a broad band (approx 150m wide) along the curve of Sapphire Coast Drive in the east, in a large cluster near the southern corner of the subject site, and in an oval shape east-south east of the Mandeni Community. These locations have been used to plan the location of this proposal, in accordance with the long term plans for the study area (see **Figure 6**).

Of the total of 384 hollow bearing trees, 26 (6.7%) showed obvious signs of usage (worn entrance, scratch marks, feed marks) of which 21 (80.7%) were *Corymbia gummifera.* In other words, 10% of the *C. gummifera* with hollows showed obvious signs of usage. This is an indicative figure, as many hollows that are actively used show no detectable signs when inspected from the ground (Mackowski 1984).

Of the total of 384 hollow bearing trees, n=222 (57.2%) had large hollows. One hollow bearing tree had more than 10 hollows. Sixty-two hollow bearing trees (16.1%) had between 4 and 10 hollows. Three hundred and eighteen hollow bearing trees (82.8%) had between 1 and 3 hollows.

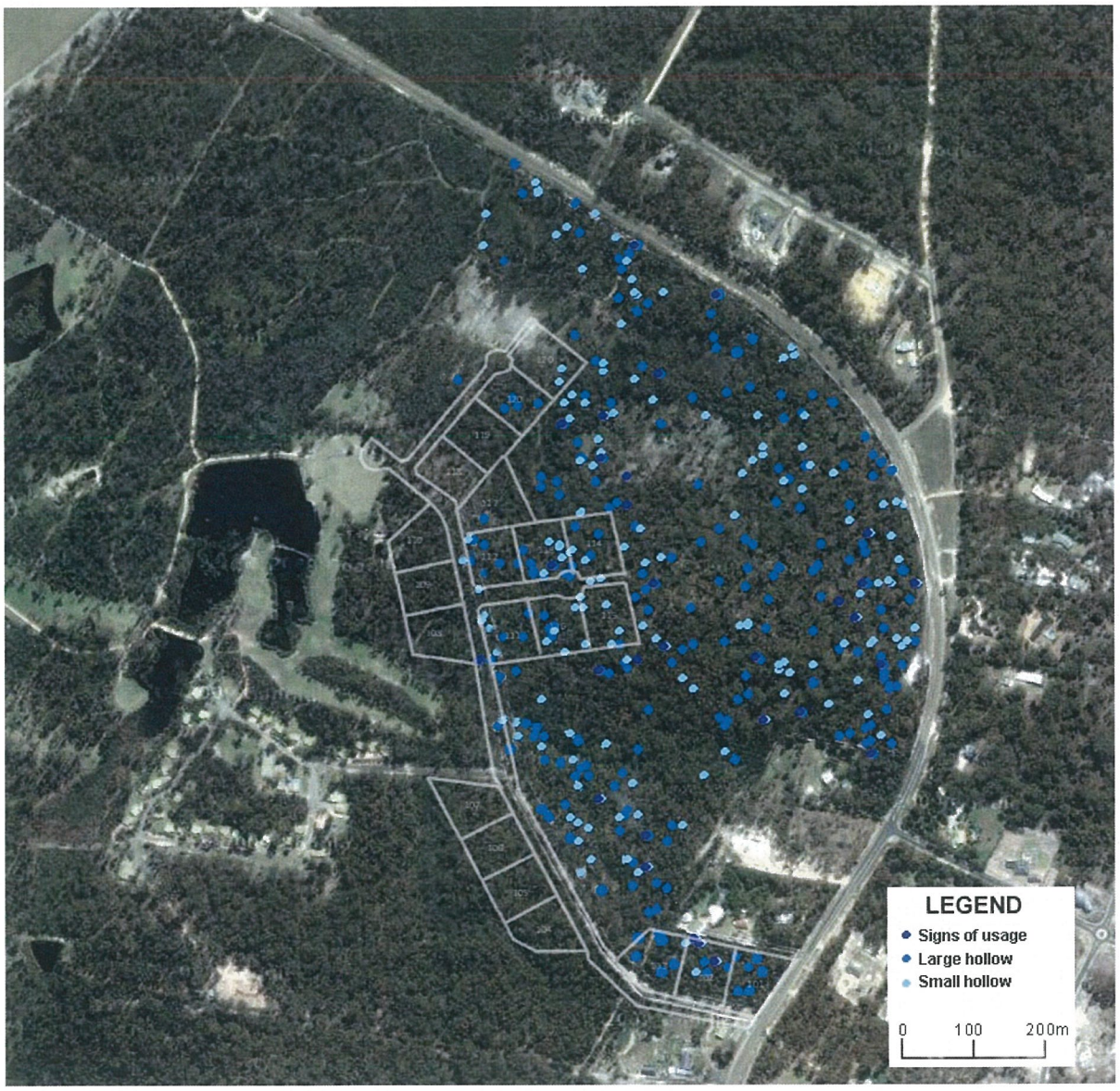
Similar rates of hollows were found to occur in native forest on the rest of the study area (e.g. Crown Land, Private Property and all other tenures within 200 m of the boundaries of Mandeni and Manna Park) by the LES assessment of these areas. However, much of the study area has been cleared for housing, agriculture and urban development (approximately 60%).

On the study area, 16 permanent artificial den sites (nest boxes) have been erected at Mandeni Resort and a further 4 at Manna Park, i.e. 500 m - 1500 m from the subject site. Within the Merimbula-Pambula-Wolumla area, a total of 97 similar den sites have been identified, at least 8 of them within a 2 km radius of the subject site (Botha 2007, Pessolt *in litt.*).

On the eastern part of the study area adjacent to the subject site, the stand of extremely large and old trees at the higher altitudes and along the curve of Sapphire Coast Drive comprises an extensive resource for nectar, pollen, eucalyptus nuts, and invertebrates.

Many of these trees did not have visible hollows and consequently do not appear in the data collected for measuring that resources. At least the same number (380+) of these large trees without hollows occurs on the ridge top forests. To the south of the subject site, but within the study area, occurs a similar stand of very large trees owned by the proponent. This area, zoned 1(c), is not planned for development and consists of approximately 10 hectares of large old trees. This land is not part of the Banksias proposal.

Figure 9: Hollow bearing trees



4.4 Forest Health and Structure

The health of the forest varied dramatically across the subject site. The ridge top and mid-slope forest have vigorous forest with healthy crowns and relatively few dead stems, whilst those on the lower slopes to the west and north have suffered severely from past Bell Miner Associated Dieback (BMAD) and other forms of damage (ring-barking, inundation). The stands in these areas have recovered over the past five years during which forest management has been monitored and carried out. These management actions include mosaic burns, reducing Bell Miner populations, and re-planting native vegetation. Most stems in the EEC *River-flat eucalypt forest on coastal floodplains* area now reveal healthy crowns or vigorous epicormic growth with the remainder in poor health or dead.

4.5 Fauna

Amphibians and Reptiles

There were a total of 7 species of frogs located in the study area. Three species of frogs were located on the study area, primarily associated with moist areas on the lower slopes and towards the western edge of the study area. Frogs were clearly associated with the water features of Mandeni Resort and with the ephemeral pool that occurred just to the west of Sapphire Coast Drive after the heavy rains in Feb - March 2010.

Peron's Tree Frog (*Litoria peronii*), the Common Toadlet (*Crinea signifera*), Bibron's Toadlet (*Pseudophryne bibronii*), Verreaux's Tree Frog (*Litoria verreauxii*), and the Striped Marsh Frog (*Limnodynastes peronii*) were found in moist sites (e.g. creek lines and drainage depressions) throughout the study area. The Eastern Banjo Frog (*Limnodynastes dumerilii*) was present in very small numbers (10-20 individuals) in the ephemeral breeding pond near Sapphire Coast Drive (see **Figure 10**).

The only listed species encountered was the Giant Burrowing Frog (*Heleioporus australiacus*) located as tadpoles in the large pool on the stream that flows into Mandeni from Manna Park; just at the point the stream crosses Red Hill Road.

The Mainland Tiger Snake (*Notechis scutatus scutatus*), Red-bellied Tiger Snake (*Pseudechis porphyriacus*), Eastern Brown Snake (*Pseudonaja textilis*) and Diamond Python (*Morelia spilota spilota*) have all been recorded on the study area on a yearly basis since 2005. The Red-bellied Tiger Snake and the Eastern Brown Snake are encountered commonly (1-5 individuals per season) in the course of yearly work, primarily in or near the moister areas of Mandeni and Manna Park. There is one resident Diamond Python at Manna Park Hostel. No snakes were encountered on the current surveys.

During the current survey, the following reptiles were detected:

- Eastern Water Skink (*Eulamprus quoyii*); in pitfall trap B19, on logs in wetter areas,
- Garden Skink / Copper-head Skink (*Lampropholis delicate*) in sunny patches amongst Bloodwood leaf litter.

- Copper tailed Skink (*Ctenotus taeniolatus*) in sunny patches of thin leaf litter, on lower slope.
- Jacky Lizard (*Amphibolurus muricatus*) seen leaping from *Acacia longifolia* branches in late afternoon sun (top of ridge near Sapphire Coast Drive), and near base of bloodwood in morning sun (low hill near tea-tree swamp).
- Lace Monitor / Goanna (*Varanus varius*), tracks on sandy soil, frequent claw / climbing marks on bloodwoods (entire site).

Historical and general surveys indicate that the Eastern Water Skink is very abundant in moist areas, where it comprises an important prey item for many bird species. The Lace Monitor is a common breeding resident across the study area, with known large individuals around the Hostel at Manna Park, BBQ area at Mandeni Resort and the owners' residence.

Birds

A total of 161 bird species have been observed in the study area, of which 120 were recorded on the study area (see **Appendix G: Bird species list**). Birds were much more abundant in the lower slopes and moister areas than on the ridge tops. Listed species on the study area include the Powerful Owl (*Ninox strenua*), Square-tailed Kite (*Lophoictinia isura*), Olive Whistler (*Pachycephala olivacea*), Swift Parrot (*Lathamus discolor*), Gang-gang Cockatoo (*Callocephalon fimbriatum*), Glossy Black Cockatoo (*Calyptorhynchus lathami*) and Varied Sitella (*Daphoenositta chrysoptera*). In this survey, other listed species found in the entire study area include the Sooty Owl (*Tyto tenebricosa*) and Masked Owl (*Tyto novaehollandiae*). There is an unconfirmed record of a Barking Owl (*Ninox connivens*) from 2007 (LES database). The Collared Sparrow Hawk (*Accipter novaehollandiae*) nested in the study area this year (2010). Although not detected on the study area, the Regent Honeyeater (*Xanthomyza Phrygia*) was recorded in October 2009 at Kalaru, some 12 km directly to the north. Other listed species occur within the district in close proximity to the study area (seabirds and shorebirds for example), but have little or no relevance to this assessment as no habitat occurs on the study area. Birds have been intensively sampled on the study area (LES 2005, 2008).

In the past, a very large colony of Bell Miners (*Manorina melanophrys*) occupied most of the study area and study area, and other species of forest dwelling birds were rare or absent (LES 2005). A program to remove Bell Miners was approved by DECCW in 2005, and consequently this species is no longer present on the upper slopes and remains in low numbers in moister areas of Mandeni Resort. The bird community has recovered in areas where this control operation has taken place and species that were extirpated or decimated have returned or recovered. The Varied Sitella, Black-faced Monarch (*Monarcha melanopsis*), and Large-billed Scrubwren (*Sericornis magnirostris*) were absent from (or undetectable) on the study area and study area before 2005, and all these species occur commonly in 2009/10 (this study). Of particular interest (although not listed) are the Yellow-tufted Honeyeater (*Lichenostomus melanops*) and the Bassian Thrush (*Zoothera lunulata*). Both species are limited in distribution in the study area, and were very rare at Mandeni (and the study area) before Bell Miner control operations in 2005/6. The Yellow-

tufted Honeyeater in particular has recovered over the past 5 years and is now present in a large breeding colony some 200 m west of the Mandeni Community.

Terrestrial Mammals

There were 6 species of terrestrial mammals recorded on the study area and 9 on the study area in this project.

The small mammal community was dominated by the Southern Bush Rat (*Rattus fuscipes*), which comprised about 50% of the captures. The Swamp Rat (*Rattus lutreolus*) was relatively common in moist areas, as was *Antechinus swaisonii*, the Swamp Antechinus. The most common marsupial captured was *Antechinus agilis*, which occurred throughout the study area. A single Eastern Pygmy Possum (*Cercartetus nanus*) was captured in a pit trap along Transect 2. This species was recorded at Mandeni Resort in 2006 (LES database), where there were three captures (in the same site on successive days) south west of the Mandeni Community (at "The Black Boys" feature on the golf course).

The Echidna (*Tachyglossus aculeatus*) has been recorded regularly in general and historical surveys over the study area. Echidna diggings near termite mounds were found throughout the study area and study area. Echidna scats were found along Transect 6. The Echidna is a common road kill on Sapphire Coast Drive.

Medium sized ground mammals captured on the study area were the Long-nosed Bandicoot (*Perameles nasuta*), the Long-nosed Potoroo (*Potorous tridactylus*), and the Common Brush-tailed Possum (*Trichosurus vulpecula*). Four individual Long-nosed Potoroos were captured on the study area, all around the moist areas of Transect 2 (i.e. the Mandeni Community). One Long-nosed Bandicoot was caught at this site as well. The Long-nosed Bandicoot was recorded on the spotlight transects (by call) throughout the study area and one individual was observed during random meanders. Digs characteristic of this group (potoroos/bandicoots) were abundant on the lower slopes and less common throughout the study area (see **Figure 10**).

The sign/scat survey located two individual red fox territories, one near Sapphire Coast Drive and the other in the forested portion of the Mandeni Community (scats and foot print). One cat was detected near Sapphire Coast Drive (foot print, Transect 7). One dog (feral or dingo) regularly used the entire area, with most tracks seen crossing or following the fire trail which Transect 2 follows (e.g. the western and northern side of the study area).

Macropods were relatively uncommon on the study area, but abundant across the wider study area. Approximately 7 resident Eastern Grey Kangaroos (*Macropus giganteus*) were regularly recorded, as were 10-14 Swamp Wallabies (*Wallabia bicolor*), 10-14 Red-necked Wallabies (*Macropus rufogriseus*). The Swamp Wallaby was mostly confined to the moist regions of study area and adjacent areas of the study area. However, the other two species are abundant on the adjacent areas of Mandeni Resort and the cleared paddocks to the north.

There is one unconfirmed record of a Spot-tailed Quoll (*Dasyurus maculatus*) at Manna Park. This species has been recorded in similar habitat within the Eden CRA area, and was once common in the district (Lunney and Leary 1988).

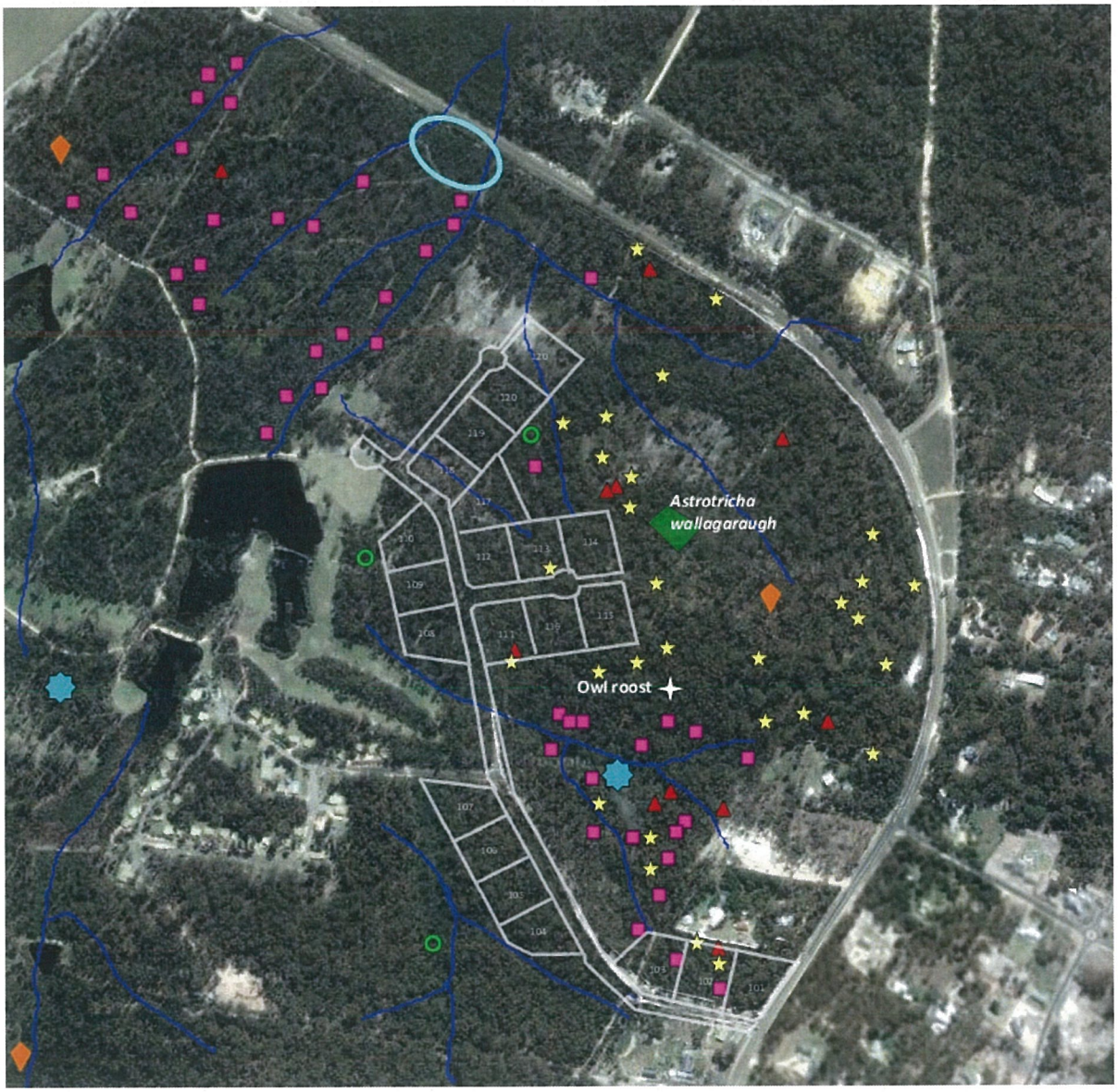
Rabbits occurred throughout the study area, but were most common in cleared areas or along roads.

Arboreal Marsupials

The most frequently recorded marsupial was the Yellow-bellied Glider (*Petaurus australis*), which was observed throughout the study area. Two den trees used by this species were located during nocturnal surveys. One wasnear Point 4, Transect 2) and the other was near Point 1, Transect 7. Numerous feed trees were located during the habitat assessment (see **Figure 10**). Other arboreal marsupials observed were the Sugar Glider (*Petaurus breviceps*), Feather-tail Glider (*Acrobates pygmaeus*), and Common Ringtail Possum (*Pseudocheirus peregrinus*). Although targeted by call-play back and scat search, the Koala was not recorded. Also notably absent was the Greater Glider (*Schonobates volans*).

Within the study area, the Yellow-bellied Glider is relatively common. Den trees or resident colonies are known at Manna Park, on Mandeni Resort, in Bournda Nature Reserve to the west (O'Connor 2007) and on BVSC land east of Sapphire Coast Drive/Tura Beach Flora Reserve.

Figure 10: Significant habitat features



- Potoroo/bandicoot diggings
- Hollow bearing trees with obvious signs of usage
- Yellow-bellied Glider feed trees
- Yellow-bellied Glider den trees
- Glossy Black Cockatoo feed tree
- Owl roost
- Eastern Pygmy Possum (in trap)
- Frog breeding site

Bats

Harp trapping on site recorded 7 species of microchiropteran bat. Species not listed on the TSC Act were Gould's Wattled Bat (*Chalinolobus gouldii),* Little Forest Bat (*Vespadelus vulturnus),* Chocolate Wattled Bat (*Chalinolobus morio*), Gould's Long-eared Bat (*Nyctophyllus gouldii*), and Lesser Long-eared Bat (*Nyctophyllus geofferyi*). Two of the species captured in Harp Trap 1, the Greater Broad Nosed Bat (*Scoteanax rueppellii)* and the Common Bent Wing Bat (*Miniopterus schreibersii*), are listed as Vulnerable by the TSC Act.

A total of 54 bats were captured on the study area: 46 in the Harp Trap 1 set near Transect 2 and 8 in the Harp Trap 2 set near Transect 7. Harp Trap 1 had a very high capture rate, reflecting the quality of the habitat for insectivorous bats in the very moist forest/wetlands occurring on the lower slopes.

The Grey-headed Flying Fox (*Pteropus poliocephalus*), which is listed as Vulnerable on the TSC Act, was recorded throughout the study area: 4 individuals were recorded, 2 on Transect 7 (near Sapphire Coast Drive) and 2 on Transect 4 (lower slopes). It is common to abundant in the study area and the Eden RFA area, with a major permanent camp located within 10 km at the Bald Hills to the west and in the town of Bega.

5. ENVIRONMENTAL ASSESSMENT: DISCUSSION

5.1 Vegetation, Habitat and Forest Health

Vegetation

The plant species found on the subject site are generally common and widespread in the region and locally. The Merimbula Star-hair (*Astrotricha wallagaraugh*) is only found in this locality, with records from south of Eden (Wallagaraugh River) and north to Kalaru (DECCW Atlas 2010) comprising its entire known range. It occurs very sporadically on the subject site but is common to abundant on the remainder of the study area and in the general area from the suburb of Tura Beach south to Merimbula. The Merimbula Star-hair on the subject site occurs as isolated stems. Elsewhere in the study area it occurs as single stems or clusters of 5-10 stems throughout. There is a one-hectare (approximate) patch where this species occurs as the dominant ground cover plant (see **Figure 8**). This area was burnt in the recent past (+/- 3 years ago). This patch does not occur within the subject site.

The microhabitat in which Merimbula Star-hair occurs locally is on road sides, in lawns and gardens, in Tura Beach Flora Reserve and in the Council reserves around Bournda National Park at Tura Head (LES data). It is usually associated with disturbance where it occurs in these areas.

The high number of orchid species recorded is an indication of survey effort as much as habitat suitability. The area was searched daily by an orchid enthusiast over the past six years. The area searched coincided with roads and walking tracks.

The distribution and abundance of tree species is discussed further in the next section.

Ecological Communities

The ecological communities on the study area are generally common and well represented in reserves. They are somewhat exceptional in that they contain Blackbutt (*E. pilularis*) which is near the southern end of its distribution, as a component of the community. Blackbutt occurs widely on the drier, upslope areas of the study area, where it crosses with the related Silvertop Ash (*E. sieberi*) to produce a (relatively common) hybrid known locally as "Black Ash".

The exception is the ecological community "*River-flat eucalypt forest on coastal floodplains of the NSW North Coast, Sydney Basin and South East Corner bioregions*" which has been listed as Endangered on the schedules of the TSC Act. It occurs on the flat, downslope areas of the study area. The same ecological community continues to the east across Sapphire Coast Drive and extends on eastward into Bournda National Park. This particular stand is notable for the rich mixture of Eucalyptus species it contains (*E. cypellocarpa, E. longifolia, E. bosistoana, E. ovata*) which comprise the overstorey. The shrub or small tree Muttonwood (*Rapanea variabilis*) is present as single stems and small stands, and the diversity of other rainforest species in the understorey is notable.

Habitat

Standard measures to evaluate habitat for biodiversity in NSW have been developed (Oliver 2002) and justified in terms of application for biodiversity offsets (Gibbons *et al.* 2009). These criteria were applied to the habitat(s) which occur on the study area. Most of the study area would receive a high score, with only the small area of regrowth at the end of Transect 7 and cleared patches near the Golf Centre receiving a low score. The regrowth area on the mid-slopes of the study area would receive a low-moderate score using the evaluation systems recommended by Gibbons *et al.* (2009). The subject site also received a low-moderate valuation on this system

Hollows and Habitat Trees

Hollows were not distributed evenly across the study area, but were most abundant along the ridge line to the east. This is the result of past management where trees were cleared or ring-barked to increase grazing productivity. This (apparently) was done by accessing the area from Red Hill Road (Sapphire Coast Drive was not yet constructed), and these eastern areas were not cleared or opened up as they were the last to be reached. In addition, these upslope areas are less productive for grazing than the flatter and moister areas downslope.

On the northern edge of the study area, many hollows have been created through the symptoms of BMAD.

Our results indicate that a large habitat resource – in addition to the hollow trees described above – exists along the ridge line in the form of mature trees with very large, well developed crowns but no visible hollows. These trees are important to the Swift Parrot, Regent Honeyeater, Gang-gang Cockatoo, Yellow-bellied Glider, Grey-headed Flying Fox, and many other species not listed on the Schedules of the TSC Act as a source of food

(nectar, sap, pollen, eucalyptus nuts, and invertebrates) as well as shelter. The resources in these locations will not be directly impacted by this proposal.

These habitat resources – hollows and habitat trees – are key elements of two Key Threatening Processes, *Land Clearance* and *Removal of Hollow Bearing Trees*, listed on the schedules of the TSC Act. These resources will be directly impacted by the development, as at least half the area on the subject site will be cleared for dwellings, roads and Asset Protection Zones. As noted above, the subject site will not directly impact on areas of concentrated habitat value, but will effect a small area of low-moderate habitat value.

With development of the subject site for residential use, it is inevitable that this resource will be depleted for the following reasons. Firstly, as already noted, a large proportion of each block will be cleared to meet construction and fire safety requirements. Human safety and property protection regulations will require further removal of senescent, dead and otherwise dangerous trees across the subject site. Although these old and "damaged" trees provide required habitat, they are not highly valued elements of a residential garden. Without specific restrictions to prevent it, these trees are inevitably removed from suburban areas on aesthetic grounds or for fire protection over the course of time. For example, the total effect of these factors in an area with similar sized (e.g. large) blocks in nearby Tura Beach, was that no trees with hollows remained in any of the 15 housing blocks surveyed, although they were common before development and remain so in nearby reserved areas (LES 2010). The current proposal directly impacts on a small portion of the resources in the study area and the region.

Sub-canopy and Shrub Layer

It is a notable feature that in the all of the forests in the study area there is a well developed sub-canopy which contains mature trees. The shrub layer also is well developed and mature. This micro-habitat provides additional foraging resources in the form of nectar, sap, pollen, eucalyptus nuts, invertebrates, fruit, and Casuarina nuts. This is important for the Swift Parrot, Regent Honeyeater, Gang-gang Cockatoo, Yellow-bellied Glider, Grey-headed Flying Fox, Eastern Pygmy Possum and many other species not listed on the Schedules of the TSC Act. This microhabitat contains at least some hollows and other features that can be used for shelter.

These habitat resources – multiple layers, alternate foraging resources – are key elements of two Key Threatening Processes, *Land Clearance* and *Removal of Hollow Bearing Trees*, listed on the schedules of the TSC Act. These resources will be directly impacted by the development, as at least half the area on the subject site will be cleared for dwellings, roads and Asset Protection Zones. Large banksias are considered to be a fire hazard, drop inconveniently large cones on lawns and consequently are preferentially removed from most residential gardens unless specifically protected. These resources will however be protected on the study area, particularly adjacent to and south of the subject site on 1(c) land to be retained. The current proposal directly impacts on a small portion of the resources in the study area and the region.

Ground cover

Ground cover across the study area is in excellent condition as a result of 20 years of conservation management. There is a mosaic of different vegetation types at ground level due to low intensity but regular fuel management fires. In moist areas, the ground cover is very dense, and there are numerous runways, potoroo/bandicoot digs, and little or no evidence of foxes or rabbits. The ground cover – particularly in stream courses and gully heads – provides shelter and foraging resources for many native species that are listed on the schedules of the TSC Act. It also provides protection against the operation of several KTPs, particularly those that address competition and grazing by feral animals (rabbits, goats, deer), damage by pigs and predation (cats, foxes, dogs).

This microhabitat contains many hollow logs, stumps, grass clumps, *Xanthorrea* clumps and other features that can be used for shelter.

These habitat resources are key elements of two Key Threatening Processes, *Land Clearance* and *Frequent Fire*, listed on the schedules of the TSC Act. These resources will be directly impacted by the development, as at least half the area on the subject site will be cleared for dwellings, roads and Asset Protection Zones.). The current proposal directly impacts on only a small portion of the resources in the study area and the region.

Forest Health and Structure

At present forest health is good to excellent throughout the study area, including the subject site. Some of the flat, moist areas to the northwest show clear evidence of past BMAD, and there is a cohort of dead stems from the period when this process was active and unchecked (1992 – 2005). The forest structure is well developed, with four clearly discernible and mature layers (ground, shrub, sub-canopy, and canopy). The presence of a mature sub-canopy is notable in that it provides additional and alternative supplies of nectar, pollen, fruit and nuts to that of the canopy (the latter being exclusively Eucalyptus species and *Angophora floribunda*).

Forest health will undoubtedly decline without further management procedures to control the Key Threatening Process of *Bell Miner Associated Dieback*, putting at risk the forest structure that is currently supporting many threatened species of fauna.

5.2 Fauna

Amphibians and Reptiles

There was a moderate suite of frog species present on the study area. Notably absent are the listed Green and Golden Bell Frog (*Litoria aurea*) and the Stuttering Frog, or Southern Barred Frog (*Mixophyes balbus*), in the Family Myobatrachidae, which might be expected to occur in the larger water courses. Both species have been recorded in the Eden RFA area (Eden CRA, 1998)

The Giant Burrowing Frog (*Heleioporus australiacus*), also in the Family Myobatrachidae, was recorded in the tadpole stage on the far western edge of the study area. It could be expected to occur throughout the study area, as recent radio tracking studies have found that this species uses habitat up to 500 m away from permanent water (Stauber 2006).

The Diamond Python (*Morelia spilota spilota*) is not listed but is a species of local interest (DECCW 2010). A very large individual is a resident near the Manna Park hostel, and one individual was observed on the study area in May 2009 (J. Shields, pers. obs.).

Birds

Threatened birds used the study area frequently. The Square-tailed Kite is a regular resident right across the study area, where it forages for small birds in the canopy (LES observations 2005-10). There is a known nest about 8 km to the south (J. Shields pers. obs., LES Database). The Olive Whistler was first identified from an individual caught at the Macquarie University field trip in 2009, and was subsequently recorded regularly in the ti-tree thickets on flat areas and well-grown sub canopy trees on the mid-slope and ridge. Swift Parrots used the study area regularly during June 2008 and June-July 2009 (LES observations 2005-2010) where they fed on nectar in the large trees along the ridge line. The maximum count was 75 individuals on 20 June 2009 (ibid.). The Gang-gang Cockatoo occurred regularly throughout the study area, feeding on the nuts of most Eucalypts but very extensively on those of the larger *Corymbia gummifera* on the study area. Two Glossy-black Cockatoo feed trees were located and the species was seen on the site on most days. There is a known nest site near the race track at Kalaru, and two family groups (parents plus young) used the study area during our surveys. The Regent Honeyeater was recorded in Kalaru (12 km north of the study area) feeding on flowering shrubs in a planted garden; it has been seen in the Bega Valley regularly but rarely over the past 20 years. The newly listed Varied Sittella was recorded regularly on the study area and twice on the study area, feeding on small moths on dead limbs of the *Corymbia gummifera* on the ridges and in smaller dead trees on the flatland.). The current proposal directly impacts on a small portion of the resources in the study area and the region.

Terrestrial Mammals

The listed Long-nosed Potoroo was recorded in our study. On the flat land to the north of the subject site it appears to be abundant (4 individuals captured, no recaptures), undoubtedly due the thick ground cover (shelter), moist habitat (productive foraging) and protection from introduced foxes and cats. Similarly, the Southern Brown Bandicoot, although not detected, would benefit from this protection in the upslope areas where there is abundant and appropriate habitat.

The abundance of larger species of macropods in the study area is a factor with regard to the distribution of dogs, and to a certain extent, foxes. These native species provide abundant foraging resources both as prey and as carrion from the frequent road kills on Sapphire Coast Drive.

Arboreal Marsupials

Within the Eden CRA the Yellow-bellied Glider is widely distributed, with some wide gaps where there is contiguous cleared country for more than 500 m. Within the study area, the Yellow-bellied Glider is relatively common. Den trees or resident colonies are known at Manna Park, on Mandeni Resort, in Bournda Nature Reserve to the west (O'Connor 2007) and on BVSC land east of Sapphire Coast Drive and the nearby Tura Beach Flora Reserve (this study).

The Yellow-bellied Glider occurred across the study area, avoiding only larger cleared areas and very young regrowth (e.g. large lawns, the golf course, the cleared area on the study area). This is due to abundant foraging resources in the mature, multi-layered forest and the widespread occurrence of hollows large enough for denning (this communal species often occupies a very large hollow or multiple hollows).

The Koala, although not detected, uses the Eucalypts on site for foraging quite readily (J. Shields, pers. obs.). The Brush-tailed Phascogale and Greater Glider, also not detected, occur in similar habitats elsewhere in the district.

Bats

The harp trapping survey revealed an abundant bat population, concentrated on the moist, flat parts of the study area. One of the threatened species – the Greater Broad-nosed Bat – is a (relatively) large predator, and the abundant foraging resources provided by the insects and other bats on the flat parts of the study area explain its presence. The other listed species, the Common Bentwing Bat, is truly common in this district, due to the large number of breeding sites available in the abandoned mines of Pambula Minefield and elsewhere in the region (Eden RFA).

The ANABAT® surveys conducted (**Appendix I**) recorded one possible listed species, Eastern False Pipistrelle (*Falsistrellus tasmaniensis*). The abundant hollows and insect fauna, particularly from the lower and flatter portions of the study area, provide suitable habitat for this species.

Introduced Mammals

The introduced mammals on the subject site and study area were widespread, but nowhere common, due to the presence of large areas of natural vegetation and the absence of highly suitable habitat. Rabbits were most common on the cleared parts of the study area (particularly the golf course and lawns of the resort), and present in very low densities on the subject site (1+ individuals). The distribution of foxes closely paralleled that of the rabbits (a preferred prey species), with only one track found on the study area.

At present, there is little to no effect of domestic dogs on the subject site or study area as they are generally prohibited. The proposal would allow dogs with restriction in the Mandeni Community. Regardless of restrictions, the presence of dogs decreases habitat value for ground dwelling mammals and birds directly and indirectly has a negative effect on most native species. The prohibition of cats at the Mandeni Community will have a positive

effect, particularly for birds, small mammals (Eastern Pygmy Possum, Feather-tail Glider), reptiles and frogs, on the subject site, but will have little effect on the wider study area (Meek 2003).

Domestic dogs on the subject site will create areas of nil habitat value and severely affect habitat connectivity for many species, particularly potoroos, bandicoots, and, should they occur, koalas and quolls. The current proposal directly impacts on a small portion of the resources in the study area and the region.

6. REGIONAL CONSERVATION CONTEXT AND LOCAL LAND MANAGEMENT

This section describes externalities which affect the assessment of the impact of the proposal. It establishes criteria which are useful to make the impact assessment transparent.

6.1 Regional Conservation Context

The Far South Coast of New South Wales is set in a forested landscape, with over 70% of the area under native vegetation (Eden RFA 1999). An extensive reserve system has been carefully planned on Crown Land (ibid.). The regional context therefore is different from other parts of NSW, where land clearances for agriculture or urban developments dominate the landscape (DECCW 2009, Gibbons *et al.* 2009). However, within BVSC, development pressure for clearance and effects of fragmentation are high near the coastline, and this is where most past development for residential and industrial use has concentrated (BVSC LEP 2002, Scott 1999).

6.2 Local Land Management

Merimbula/Tura Beach Land use

To assess impacts on biodiversity, local land use must be considered (EPA, TSCA, EPBC) The information we used to make our assessment is set out below and illustrated in **Figure 1, Figure 2** and **Figure 5.**

The two local suburbs (Merimbula and Tura Beach) are planned for future development as housing, recreation and light industry (BVSC LEP 2002). An area of about 3 ha located 1600 m to the southeast of the subject site has recently (Dec 2009) been cleared for the establishment of a shopping centre (Woolworths). Directly adjacent to this site to the southeast occurs BVSC land that is zoned 2(a) Residential Low Density continuously through to the recently established housing development at Mirador. To the southwest of the subject site occurs Vacant Crown Land and land held by the local Aboriginal Council, which is zoned 1(a) Rural. Further to the south is the Merimbula Tip. To the west, the study area adjoins Bournda Nature Reserve. To the northwest, the study area is banded by private land zoned 1(a) Rural for approximately 1 km. Bournda Nature Reserve and Bournda National Park are located further north and to the northeast.

At present, relatively large blocks of native vegetation, similar to the subject site, are present to the south and west in a continuous band through to Merimbula Lake and Millingandi (see **Figure 2**). These bands will be fragmented to varying degrees over the next 20 years (BVSC LEP 2002).

Hollows

The hollow resource is supplemented by an active program to erect nest/den sites at the study area and throughout the BVSC (Botha 2007, Pessolt *in litt.*) as described in Chapter 4. Results locally (Botha 2005) and elsewhere in NSW (Goldingay *et al.* 2005) indicate that such nest/den sites are regularly used and represent a supplemental shelter resource in areas where they are otherwise rare.

Pests

The study area has been subject to a long term pest management program in consultation with DECCW and through professional services by wildlife managers (LES 2005). This is particularly relevant to the low numbers of rabbits and foxes on the study area and subject site. A regular program of monitoring and baiting foxes, as well as rabbit control by shooting and removal of rabbit harbour, has been successful in keeping low numbers of pests.

There are wild dogs, possibly dingos, present in the study area. At present they appear to have little effect, although they may be significant predators of native herbivores. Deer were detected in the course of this survey (a Red Deer (*Cervus elaphus*) skeleton was found to the west of Manna Park Hostel). Deer have recently been listed as a Key Threatening Process.

Overabundant Native Wildlife and Safety

The grazing paddocks, golf course and lawns in the study area provide abundant resources for native herbivores. Grazing pressure from the Eastern Grey Kangaroo and the Red-necked Wallaby has been sufficient for the DECCW to grant culling licences in most years since 1980. As these paddocks are adjacent to Sapphire Coast Drive, road kills are frequent. The developments proposed could impact on this issue by increasing grazing areas (in lawns) and increasing traffic.

The management of the Bell Miner is discussed in Chapter 7: Seven Part Test, part (g), which deals with Key Threatening Processes.

Connectivity

The proposed land use in the surrounding area poses issues in connectivity for the locality of Merimbula-Tura Beach-Bournda. Connectivity through the Eden region generally is good due to historical land use and recent government initiatives. Areas where connectivity is disrupted are concentrated along the coast (towns, suburbs, recreational facilities) and across the Bega Valley (extensive dairy farms, other grazing, cropping, and inland residential developments). The subject site occurs in a current node of connectivity east–west (Bournda Nature Reserve to the Coastal Reserve and Bournda National Park). Direct north–

south connectivity for the subject site at present is broken by the cleared paddocks and residences along Sapphire Coast Drive. There is some connectivity to the north via the uncleared forest on private land, Manna Park, and recent offsets along Red Hill Road.

Long Term Use of Adjoining Land

The long term land use for the study area is to continue current occupation of the resort area, owner's residence and operation of the recreational facilities. The remaining area outside the subject site, but still on Mandeni, will be managed for nature conservation values, as will Manna Park. The owner's management objectives are to maintain and enhance biodiversity values. This includes continued monitoring and management of BMAD (a KTP), the hollow resources, fire management, weed management and, where feasible, enhancement of biodiversity values. These factors have been taken into account as they are part of a funded management plan.

A current proposal is to investigate, in partnership with the Potoroo Palace (at Yellow Pinch, Merimbula) and the appropriate Priority Action Statements (DECCW 2010), the re-establishment of species which have been extirpated or decimated in the district (Evans in litt. 2009, 2010). These species include the Eastern Quoll (*Dasyurus viverrinus*), Australian Bustard (*Ardeotis australis*), Tasmanian Bettong (*Aepyprymnus gaimardi*) and the Red-legged Pademelon (*Thylogale stigmatica*) (Lunney and Leary 1988). In August, 2010 formal proposals were developed with Potoroo Palace to begin this venture. These factors have NOT been taken into account as they are not part of a funded management plan. A positive step has been taken in the establishment and stocking of a captive breeding facility for the Rufous Bettong (*A. rufescens*) at Mandeni Resort.

Recent Biodiversity Offsets

Recent offsets by the owner for the construction of the road at the subject site are shown in **Figure 11**. These have been strategically selected as biodiversity offsets. They are to be managed in perpetuity for nature conservation values (PVP Mandeni 2009). They have been taken into consideration in assessing the impact on listed entities as they are approved by regulation.

Aquatic Habitat

The owner has constructed 3 water features on the resort section of Mandeni. They provide a wide diversity of habitat that would otherwise be absent for threatened species such as the Australian Bittern (*Botaurus poiciloptilus*). These resources are also beneficial to biodiversity, fauna in particular, in providing a regular supply of water during drought. They may be detrimental to native vegetation below the dams in that natural flows are disrupted. These factors have been considered in addressing the environmental impacts of the proposal.

Revegetation and Rehabilitation

The owner has a commitment to maintaining natural values on the study area. Strategic areas have been planted along Sapphire Coast Drive with native tree species (e.g. in

connecting corridors across the cleared paddocks, to the west of Sapphire Coast Drive). These will provide a north-south link within the next 20 years for forest dependent species.

On the Mandeni Resort, an area has been designated for revegetation of currently rare or extirpated forest trees and shrubs on the moist, flat portion of the study area, approximately 200 m west of the subject site. Native species have been established and weeds controlled across 2.5 ha. Species choice has been guided by NGH 2004, Miles 2007 and ForestsNSW 2001. Ten of the nest/den sites have been erected in remnant trees within this area. This area will provide a permanent source of both habitat for fauna and revegetation (from seed dispersal) for locally rare forest trees and shrubs (see **Appendix H**).

These factors affect the carrying capacity for biodiversity in the study area. They have been taken into consideration in assessing the impact on listed entities as they are part of a funded management plan.

Retained Habitat within the Proposal

The proposal has used the results of the environmental planning work done over the past 7 years to design the layout of housing blocks to minimise habitat loss, maximise abatement of threatening processes and provide long term continuity of key resources for threatened biological entities.

Where possible, key habitat for threatened species or groups of species has been retained in large continuous blocks. To the north, key habitat for bats and terrestrial mammals (the Long-nosed Potoroo in particular) has been protected in the moist environment along the creek flat. This area also contains a breeding site for frogs and a concentration of large, old Eucalypts which are used by the Yellow-Bellied Glider, Sooty Owl and Olive Whistler. Endangered and uncommon ecological communities are also protected by exclusion in the proposed development's design (**Figure 6**).

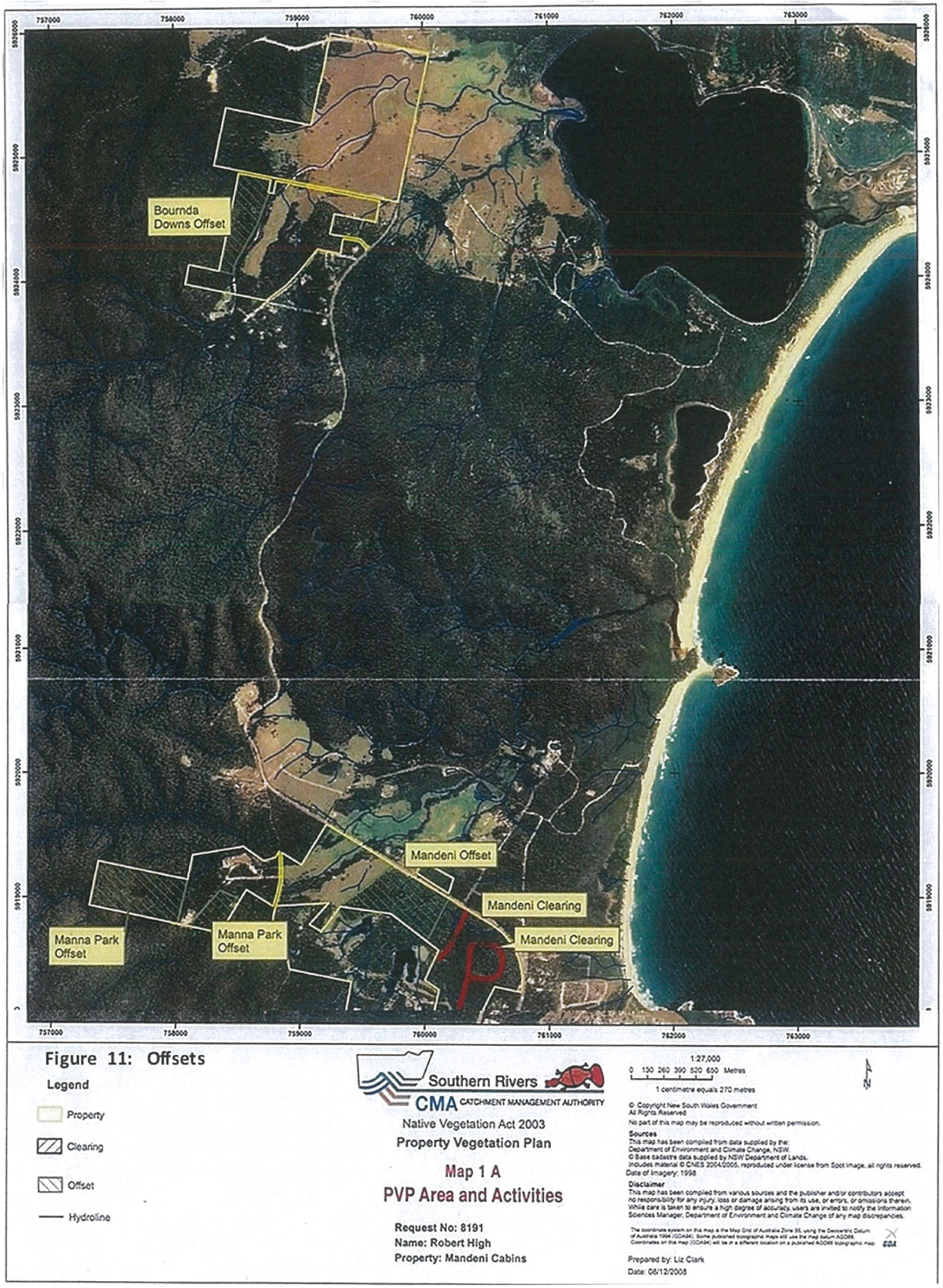
The results from the survey of large old trees and tree hollows were used to design a buffer strip within the study area. A 150+ m wide strip along the eastern boundary is protected from tree removal (in the 20 m closest to the housing envelopes, trees may be removed for safety reasons with BVSC approval). This width is 3 times greater than the minimum width calculations for sensitive species in these forests by Recher *et al.* 1987. All trees with hollows are entered into the data base that accompanies this report, so that monitoring enforcement of these rules is transparent to all relevant agencies and stakeholders. A 10m wide buffer strip in Lots 114 and 115 (**Figure 6**) connects to the protected Banksias Riparian Reserve through that part of the proposal area.

The proposal design also protects known habitat for the Eastern Pygmy Possum, Powerful Owl (roost site), Glossy Black Cockatoo (feed trees), Gang-gang Cockatoo (feed trees), the Long-nosed Potoroo and the Square-tailed Kite.

The retained areas in the centre and northern portions of the study area (**Figure 6**) protect more xeric habitats and species, including the hybrid *C. maculata/gummifera*, Flame Robin,

Varied Sitella and Merimbula Star-hair. This portion of the study area is particularly important because it contains large, winter-flowering trees which are used for foraging by the Swift Parrot, Regent Honeyeater, Yellow-bellied Glider, Sugar Glider, Grey-headed Flying Fox and other nectarivorous species.

Figure 11: Biodiversity offsets



7. SEVEN PART TEST AND EPBC CONSIDERATION

Threatened species impact assessment is an integral component of environmental impact assessment. The ultimate objective of the application of section 5A of the EP&A Act, the Assessment of Significance, is to improve the standard of consideration afforded to threatened species, populations and ecological communities, and their habitats through the planning and assessment process, and to ensure this consideration is transparent. Under the *Threatened Species Conservation Amendment Act 2002*, the factors to be considered when determining whether an action, development or activity is likely to significantly affect threatened species, populations or ecological communities, or their habitats (known previously as the "8-part test"), have been revised. This affects s5A EP&A Act, s94 TSC Act and s220ZZ *Fisheries Management Act 1994* (FM Act).

The revised factors maintain the same intent but focus consideration of likely impacts in the context of the local rather than the regional environment as the long-term loss of biodiversity at all levels arises primarily from the accumulation of losses and depletions of populations at a local level. This is the broad principle underpinning the TSC Act, State and Federal biodiversity strategies and international agreements. The consideration of impacts at a local level is designed to make it easier for local government to assess, and easier for applicants and consultants to undertake the Assessment of Significance because there is no longer a need to research regional and state-wide information. The Assessment of Significance is only the first step in considering potential impacts. Further consideration is required when a significant effect is likely and is more appropriately considered when preparing a Species Impact Statement.

The Assessment of Significance is applied to species, populations and ecological communities listed on Schedules 1, 1A and 2 of the TSC Act and Schedules 4, 4A and 5 of the FM Act. The applicant/proponent should develop a list of threatened species, populations and ecological communities which may be affected directly or indirectly, by the proposed action, development or activity. Adequate rationale should be provided to demonstrate how the list was derived. If adequate surveys/studies have been undertaken to categorically demonstrate the species does not occur in the study area, or if not resident, will not utilise habitats on site on occasion or be influenced by off-site impacts of the activity, that species does not have to be considered. Otherwise all species likely to occur in the study area (based on general species distribution information), and known to utilise that habitat type, should be assessed as if present.

7.1 Seven Part Test

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

The species for which this clause is relevant, and which are known to occur within the study area, are discussed in **Table 2**. The species for which this clause is relevant, but for which

there is no significant impact due to absence of habitat or which have been shown to be categorically absent by long term studies, are presented in **Appendix E**.

Table 2: Seven Part Test, *Part a) In the case of a threatened species, is the action proposed likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction?*

Species	Mandeni Community	The Study Area	Mitigation and management
	Population - Significant impact?	*Population - Significant impact?*	*Relevant factors*
Yellow-bellied Glider	The population east of Bournda Nature Reserve and south of Wallagoot Lane – **No significant impact**	The population east of Bournda Nature Reserve and south of Wallagoot Lane – **No significant impact**	Corridors, protection of known den sites, BMAD control
Eastern Pygmy Possum	The population east of Bournda Nature Reserve and south of Wallagoot Lane – **No significant impact**	The population east of Bournda Nature Reserve and south of Wallagoot Lane – **No significant impact**	Corridors, fire management, pet control, KTP pest control
Long-nosed Potoroo	The population east of Bournda Nature Reserve and south of Wallagoot Lane – **No significant impact**	The population east of Bournda Nature Reserve and south of Wallagoot Lane – **No significant impact**	Corridors, fire management, pet control, KTP pest control
Giant Burrowing Frog	The population on the subject site and study area – **No significant impact**	The population on the subject site and study area – **No significant impact**	Corridors, fire management, pet control, KTP pest control
Glossy Black Cockatoo	The population on the subject site and study area – **No significant impact**	The population on the subject site and study area	Protection of known nest and roost sites, feed tree management, hollow management
Gang-gang Cockatoo	The population on the subject site and study area – **No significant impact**	The population on the subject site and study area – **No significant impact**	Protection of known nest and roost sites, feed tree management, hollow management
Swift Parrot	The population that uses the subject site and study area – **No significant impact**	The population that uses the subject site and study area – **No significant impact**	Corridors, fire mgt., pet control, KTP pest control, increased forage resource (watered gardens)

Olive Whistler	The population on the subject site and study area – **No significant impact**	The population on the subject site and study area – **No significant impact**	Corridors, fire management, pet control, KTP pest control, riparian protection, BMAD control
Varied Sittella	The population on the subject site and study area – **No significant impact**	The population on the subject site and study area - **No significant impact**	Corridors, fire management, pet control, KTP pest control, large/old tree protection, BMAD Control
Powerful Owl	The population on the subject site and study area – **No significant impact**	The population on the subject site and study area – **No significant impact**	Protection of known nest and roost sites, hollow management, foraging resource management.
Sooty Owl	The population on the subject site and study area – **No significant impact**	The population on the subject site and study area – **No significant impact**	Protection of known nest and roost sites, hollow management, foraging resource management
Masked Owl	The population east of Bournda Nature Reserve and south of Wallagoot Lane – **No significant impact**	The population east of Bournda Nature Reserve and south of Wallagoot Lane – **No significant impact**	Protection of known nest and roost sites, hollow management, foraging resource management
Regent Honeyeater	The population that uses subject site and study area – **No significant impact**	The population that uses subject site and study area – **No significant impact**	Corridors, fire management, pet control, KTP pest control, BMAD control increased forage resource (watered gardens)
Common Bent-wing Bat	The population that uses the subject site – **No significant impact**	The population that uses the subject site – **No significant impact**	Corridors, fire management, pet control, KTP pest control, BMAD control, riparian protection
Greater Broad-nosed Bat	The population that uses the subject site – **No significant impact**	The population that uses the subject site – **No significant impact**	Corridors, fire management, pet control, KTP pest control, BMAD control, riparian protection

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

There are no endangered populations in the study area.

Part c) In the case of an endangered ecological community or critically endangered ecological community, is the action proposed:

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

The two listed EECs are unlikely to be placed at risk of extinction as the proposal does not require their modification or removal to proceed.

(ii) likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction?

The development may have moderate adverse impacts on both EECs as the water supply for the housing development will use some water that would otherwise act as a source of supply for these moisture-dependent ecological communities. However, the development is not extensive enough(11.3 ha) to divert major water flows away from the natural system. In addition, there may be some increase in run-off to the down stream areas as a result of road construction and other land-scaping operations (lawns, car-parks, driveways).

Part d) In relation to the habitat of a threatened species, population or ecological community:

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

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

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

The assessments for all parts of clause (d) of the Seven Part Test are given in the 3 tables below (Table 3-5) for the species where there could be a significant impact. The species for which this clause is relevant, but for which there is no significant impact due to absence of habitat or which have been shown to be categorically absent by long term studies, are presented in **Appendix E**.

Table 3: Seven Part Test, *Part d) i) In relation to the habitat of a threatened species, population or ecological community: to what extent is it likely to be removed or modified as a result of the action proposed?* *(Note that no habitat will be completely removed by the proposal. The following table presents a defensible, conservative estimate of the rate of modification. Actual modification is expected to be less than half the values presented to take a precautionary approach.)*

Species	Mandeni Community (direct effects)	Study Area (indirect effects)	Mitigation and management
Giant Burrowing Frog	5%	0.5%	Stabilised water regime, fire protection
Glossy Black Cockatoo	2%	0.05%	Fire protection, Casuarina management
Gang-gang Cockatoo	2%	0.05%	Fire protection, flowering resource management
Olive Whistler	2%	0.05%	Fire protection, BMAD management
Swift Parrot	2%	0.05%	Fire protection, flowering resource management
Varied Sittella	2%	0.05%	Fire protection, BMAD management
Powerful Owl	2%	0.05%	Fire protection
Masked Owl	2%	0.05%	Fire protection
Regent Honeyeater	2%	0.05%	Fire protection, BMAD management, flowering resource management
Yellow-bellied Glider	2%	0.05%	Fire protection, BMAD management, flowering resource management
Eastern Pygmy Possum	5%	0.05%	Fire protection, shrub/sub-canopy management
Greater Broad-nosed Bat	1%	0.05%	Fire protection, water supply
Long-nosed Potoroo	5%	0.05%	Fire protection, pest management
EEC: Coastal Floodplain Forest	5%	0.05%	Fire protection

Table 4: Seven Part Test, *Part (d) ii): In relation to the habitat of a threatened species, population or ecological community: to what extent is it likely to become fragmented or isolated from other areas of habitat as a result of the proposed action?* *(Note that no habitat will be completely isolated or fragmented by the proposal. The following table presents an estimate of the rate of isolation / fragmentation). The following table presents a defensible, conservative estimate of the rate of isolation/fragmentation. Actual isolation/fragmentation is expected to be less than half the values presented to take a precautionary approach.)*

Species	Mandeni Community (direct effects)	Study Area (indirect effects)	Mitigation and management
Giant Burrowing Frog	1%	0.1%	Corridor design, water supply, pest management
Glossy Black Cockatoo	0.1%	0.01%	Corridor design, hollows, feed trees
Gang-gang Cockatoo	0.1%	0.01%	Corridor design, hollows, feed trees
Swift Parrot	0.1%	0.01%	Corridor design, hollows, feed trees
Olive Whistler	0.1%	0.01%	Corridor design, BMAD
Varied Sittella	0.1%	0.01%	Corridor design, BMAD
Powerful Owl	0.1%	0.01%	Corridor design, hollows, prey management
Masked Owl	0.1%	0.01%	Corridor design, hollows, prey management
Regent Honeyeater	0.1%	0.01%	Corridor design, BMAD
Yellow-bellied Glider	0.1%	0.01%	Corridor design, hollows, feed trees
Eastern Pygmy Possum	1%	0.1%	Corridor design, pest management
Long-nosed Potoroo	1%	0.1%	Corridor design, pest management
Greater Broad-nosed Bat	0.1%	0.01%	Corridor design, hollows, feed trees
EEC: Coastal Floodplain Forest	0.01%	0.001%	Fire protection, BMAD

Part d) iii) In relation to the habitat of a threatened species, population or ecological community: what is the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species, population or ecological community in the locality,

Given the consideration with regard to the habitat to be removed, modified, fragments or isolated by the proposal, the importance rating to the long-term survival of the species, populations and ecological communities in the locality is very low or negligible. If options for rezoning and rehabilitating the subject site are approved or funded, it is possible that the importance of those areas will increase with approval of this development.

Part e) Is the action proposed likely to have an adverse effect on critical habitat (either directly or indirectly)?

There is no declared critical habitat in the subject site or study area.

Part f) Is the action proposed consistent with the objectives or actions of a recovery plan or threat abatement plan?

Recovery plans or Priority Action Statements have now been prepared for all listed entities, including those considered in this report. The previous parts of the Seven Part Test have defined impact with regard to loss of habitat and fragmentation, which are generally recommended against in recovery plans and priority action statements. Aside from these impacts, the proposal is consistent with the objectives or actions contained in those documents.

The actions in the plan are consistent with the Threat Abatement Plans that have been prepared for the Red Fox and the Plague minnow (*Gambusia holbrooki*).

Part g) Does the action proposed constitute or is it part of a key threatening process or likely to result in the operation of, or increase the impact of, a key threatening process?

The action proposed is part of at least two listed threatening processes, *Land Clearance* and *Loss of Tree Hollows*. The extent to which these processes impact on the subject site and the study area have been described in the discussion and in other pats of the Seven Part Test.

The current proposal (Mandeni Community) would contribute to the detrimental effects of Land Clearance and Loss of Tree Hollows. However, the development takes place in a region where 50% of the local government area is managed for nature conservation values and a further 20% is state owned multiple use forest. The key threat occurs on a local basis and takes effect at the level of local populations of flora and fauna. These impacts are the subject of parts a), b), c) and d) of this assessment.

With regard to Part G, and the KTPS for Land Clearance and Hollow Loss, any proposal which includes removal of large native trees must inherently be "part of a key threatening

process" effects of these two KTPs. The question is, "Does the "part" of the relevant KTPs "increased" by this particular proposal impact on the relevant biological entities protected, such that the KTP has a significant effect?" This particular proposal increases or is indeed "part of the relevant KTPs", but at a level well below significance for the biological entities protected.

The current proposal would not increase the effect of any Key Threatening Process.

With regard to the Key Threatening Processes of *foxes, rabbits, and deer*, the proposals could increase the pressure of these threats marginally if no management action were taken. That is, the presence of a matrix of lawns, gardens and native cover provides better habitat for these pests than does the present stand of contiguous native vegetation. This impact would be detectable in the absence of active, adaptive pest management. However, if the present level of management action continues, these KTPs would operate at the same levels as at present or be decreased.

With regard to the KTP of *Bell Miner Associated Dieback*, the situation is unusual. At present, the owners have devoted resources (human and physical) to management of this KTP under licence from the local DECCW office. This management represents costs valued at $380 000 in the start up phase (2005) and a mean annual input valued at $35 000 since then (2006-2010). If this management input ceases, the KTP will operate at greater levels in the next 1-5 years. The developments themselves could cause the KTP to operate at greater levels by the provision of artificial watering points (swimming pools, amenity watering points e.g. bird baths), which are used extensively by Bell Miners (LES 2010). The impact could be moderated by continued monitoring and management. This impact would be detectable in the absence of active, adaptive pest management. However, if the present level of management action continues, these KTPs would operate at the same levels as at present or be decreased.

The impact of all KTPs has been decreased by implementing better zoning for land use. The retention of contiguous blocks of native vegetation to the west and the establishment of rural residential conditions on areas now used for grazing (see Chapter 6) would allow more comprehensive and effective management of threats.
When considering these results, the difference between LES and an environmental consulting business must be taken into account as noted in the introduction. Our results are based on scientific research, by ourselves, our students, and our associates, instead of a short tem project designed and carried out to meet the needs of a developer. We have implanted operations (pest control, habitat manipulation) to deliver on-ground results on the study area over the past 8 years. Our conclusions about impacts and environmental changes need to be considered according to our capabilities and our demonstrated level of academic and professional expertise.

8. CONCLUSIONS

This Development Application comprises a significant rural-residential development in economic, environmental and social terms. The development is well located to serve the social and economic requirements of the locality and the region. That is it will fill a need for well planned housing with easy access to all facilities. The large size of the blocks is in stark contrast to the intensive development in most other parts of Tura Beach, and provides for the permanent retention of many natural resources *in situ*.

In environmental terms, the development will impact on species which require hollows, a mature sub-canopy, dense riparian vegetation and connectivity. These effects have been reduced significantly by the proposed lot layout and design, which allows for the retention of extensive, continuous and high quality habitat, as well as significant biological features.

The overall environmental impact of the proposed development is considered not to be significant.

In the long term, positive effects on biodiversity could occur if the cleared land in the study area is converted to rural residential use through zoning changes in the new Local Environmental Plan for BVSC. Further environmental gains could be made through long term funding of the management plans for habitat restoration and species rehabilitation which are described in this report. The owner intends to make a separate submission to Council, as part of the LEP study, to relocate concessional lots so as to retain more of the forested area adjacent to Red Hill Road.

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Personal communications

Rob High, Jim Shields, Heather Robinson

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Attachment 5 – Correspondence from NSW Office of Environment and Heritage dated 19 March 2018

NSW GOVERNMENT | Office of Environment & Heritage

DOC18/107862

[redacted]

Dear [redacted]

RE: Mandeni and Millingandi Planning Proposal

I am writing in response to your request for advice on the Planning Proposal (PP) described above. We have reviewed the PP and provide the following advice on biodiversity and Aboriginal cultural heritage issues.

Biodiversity

At Mandeni, we note that a 10–30m strip of the property vegetation plan (PVP) is proposed to occur in the western E4 zone (see Figure 1). Future subdivision of the western E4 zone would need to avoid subdividing the PVP as it would then need to be reapplied to each of the new Lots.

We also note that the subdivision in the eastern E4 zone (DA 2008.443) has approval. The *Biodiversity Conservation Act 2016* and the biodiversity offsets scheme commenced on the 25 August 2017. As a result, it is very likely that each new dwelling in the approved subdivision would need to offset their impacts. This will require a new fauna a flora assessment for each block and a Biodiversity development assessment report prepared by an accredited assessor in accordance with the Biodiversity Assessment method.

We note that proposed zoning for Millingandi will allow subdivision into two Lots. This should allow the location of dwellings that will not impact on either the SEPP 14 Wetland or the Acid Sulfate Soils.

Aboriginal cultural heritage

In relation to Aboriginal cultural heritage matters for this planning proposal; OEH advises that Aboriginal sites have been previously recorded within both subject lands. This is contrary to sections 2.3 (pages 12 and 30) which state that AHIMS revealed no items. The recorded sites at both subject areas consist of stone artefact scatters and were recorded during previous archaeological assessments.

OEH advises that while the current rezoning proposed may not specifically impact any Aboriginal objects, any future development resulting from this rezoning will require a comprehensive Aboriginal cultural heritage assessment to be undertaken.

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A comprehensive Aboriginal cultural heritage assessment will be essential for OEH to consider any subsequent development application that may require the issuing of an Aboriginal Heritage Impact Permit (AHIP). If impacts to either the known, or any new, Aboriginal objects cannot be avoided then an AHIP will be required to be issued by OEH. Further information regarding about Aboriginal heritage regulation in NSW can be obtained from the OEH website at:

http://www.environment.nsw.gov.au/licences/achregulation.htm.

If you would like to discuss this letter further, please contact Tobi Edmonds for biodiversity matters or Rose O'Sullivan (at Rose.OSullivan@environment.nsw.gov.au) for Aboriginal cultural heritage matters.

Yours sincerely

[redacted]

19/3/18

ALLISON TREWEEK
Senior Team Leader - Planning
Regional Operations - South East

Enclosure: Figure 1 – Proposed zoning showing conservation PVP and approved DA 2008.443

cc: Meredith McEntyre - Department of Planning
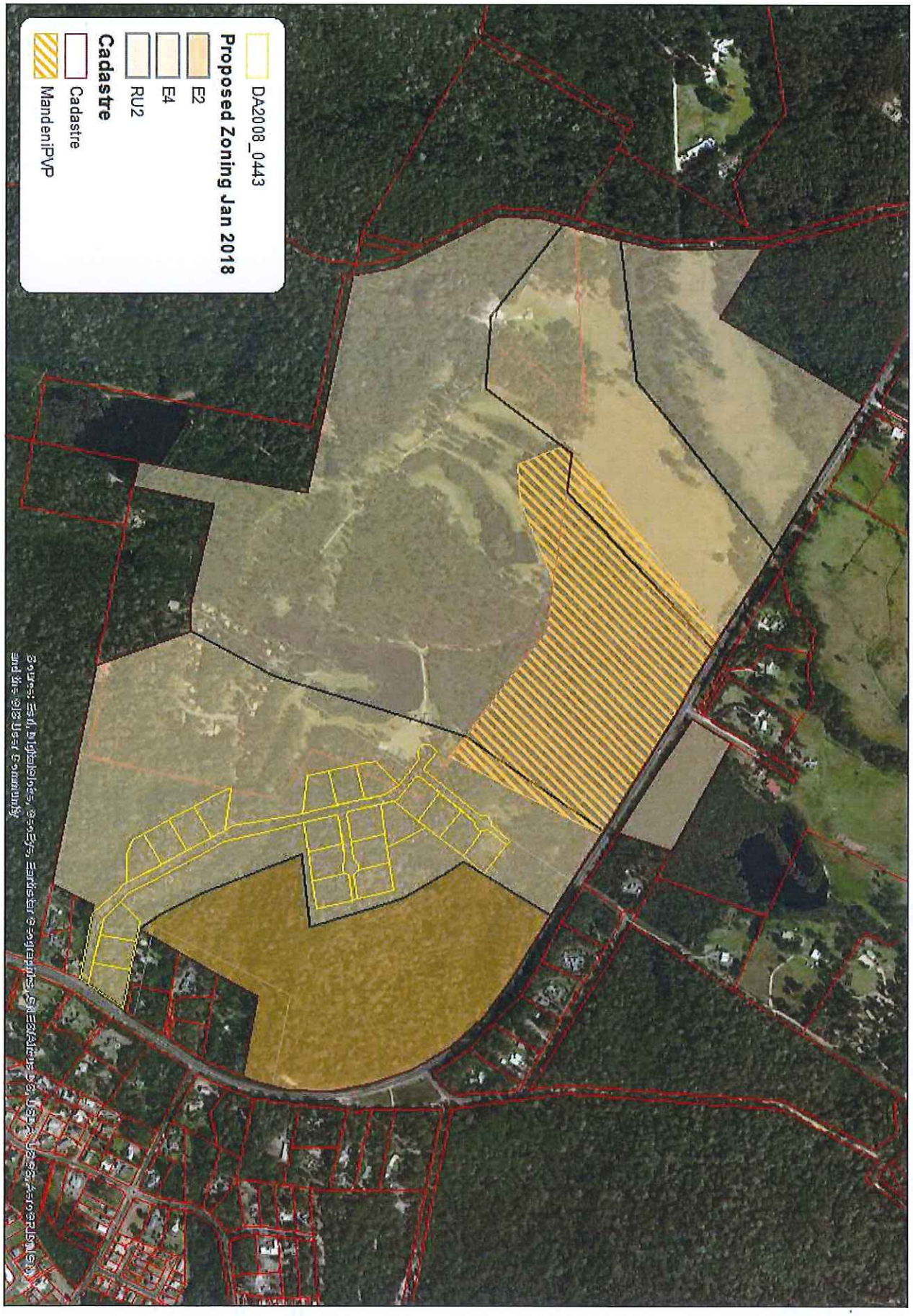
Figure 1 – Proposed zoning showing conservation PVP and approved DA 2008.443