

NOTICE OF MEETING



BIODIVERSITY AND SUSTAINABILITY ADVISORY COMMITTEE MEETING

A Biodiversity and Sustainability Advisory Committee Meeting of Byron Shire Council will be held as follows:

Venue	Conference Room, Station Street, Mullumbimby
Date	Thursday, 18 February 2016
Time	9.00am

A handwritten signature in black ink, appearing to read 'Shannon Burt', is located in the lower left area of the page.

Shannon Burt
Director Sustainable Environment and Economy

CONFLICT OF INTERESTS

What is a “Conflict of Interests” - A conflict of interests can be of two types:

Pecuniary - an interest that a person has in a matter because of a reasonable likelihood or expectation of appreciable financial gain or loss to the person or another person with whom the person is associated.

Non-pecuniary – a private or personal interest that a Council official has that does not amount to a pecuniary interest as defined in the Local Government Act (eg. A friendship, membership of an association, society or trade union or involvement or interest in an activity and may include an interest of a financial nature).

Remoteness – a person does not have a pecuniary interest in a matter if the interest is so remote or insignificant that it could not reasonably be regarded as likely to influence any decision the person might make in relation to a matter or if the interest is of a kind specified in Section 448 of the Local Government Act.

Who has a Pecuniary Interest? - a person has a pecuniary interest in a matter if the pecuniary interest is the interest of the person, or another person with whom the person is associated (see below).

Relatives, Partners - a person is taken to have a pecuniary interest in a matter if:

- The person's spouse or de facto partner or a relative of the person has a pecuniary interest in the matter, or
- The person, or a nominee, partners or employer of the person, is a member of a company or other body that has a pecuniary interest in the matter.

N.B. “Relative”, in relation to a person means any of the following:

- (a) the parent, grandparent, brother, sister, uncle, aunt, nephew, niece, lineal descends or adopted child of the person or of the person's spouse;
- (b) the spouse or de facto partners of the person or of a person referred to in paragraph (a)

No Interest in the Matter - however, a person is not taken to have a pecuniary interest in a matter:

- If the person is unaware of the relevant pecuniary interest of the spouse, de facto partner, relative or company or other body, or
- Just because the person is a member of, or is employed by, the Council.
- Just because the person is a member of, or a delegate of the Council to, a company or other body that has a pecuniary interest in the matter provided that the person has no beneficial interest in any shares of the company or body.

Disclosure and participation in meetings

- A Councillor or a member of a Council Committee who has a pecuniary interest in any matter with which the Council is concerned and who is present at a meeting of the Council or Committee at which the matter is being considered must disclose the nature of the interest to the meeting as soon as practicable.
- The Councillor or member must not be present at, or in sight of, the meeting of the Council or Committee:
 - (a) at any time during which the matter is being considered or discussed by the Council or Committee, or
 - (b) at any time during which the Council or Committee is voting on any question in relation to the matter.

No Knowledge - a person does not breach this Clause if the person did not know and could not reasonably be expected to have known that the matter under consideration at the meeting was a matter in which he or she had a pecuniary interest.

Participation in Meetings Despite Pecuniary Interest (S 452 Act)

A Councillor is not prevented from taking part in the consideration or discussion of, or from voting on, any of the matters/questions detailed in Section 452 of the Local Government Act.

Non-pecuniary Interests - Must be disclosed in meetings.

There are a broad range of options available for managing conflicts & the option chosen will depend on an assessment of the circumstances of the matter, the nature of the interest and the significance of the issue being dealt with. Non-pecuniary conflicts of interests must be dealt with in at least one of the following ways:

- It may be appropriate that no action be taken where the potential for conflict is minimal. However, Councillors should consider providing an explanation of why they consider a conflict does not exist.
- Limit involvement if practical (eg. Participate in discussion but not in decision making or vice-versa). Care needs to be taken when exercising this option.
- Remove the source of the conflict (eg. Relinquishing or divesting the personal interest that creates the conflict)
- Have no involvement by absenting yourself from and not taking part in any debate or voting on the issue as if the provisions in S451 of the Local Government Act apply (particularly if you have a significant non-pecuniary interest)

RECORDING OF VOTING ON PLANNING MATTERS

Clause 375A of the Local Government Act 1993 – Recording of voting on planning matters

- (1) In this section, **planning decision** means a decision made in the exercise of a function of a council under the Environmental Planning and Assessment Act 1979:
 - (a) including a decision relating to a development application, an environmental planning instrument, a development control plan or a development contribution plan under that Act, but
 - (b) not including the making of an order under Division 2A of Part 6 of that Act.
- (2) The general manager is required to keep a register containing, for each planning decision made at a meeting of the council or a council committee, the names of the councillors who supported the decision and the names of any councillors who opposed (or are taken to have opposed) the decision.
- (3) For the purpose of maintaining the register, a division is required to be called whenever a motion for a planning decision is put at a meeting of the council or a council committee.
- (4) Each decision recorded in the register is to be described in the register or identified in a manner that enables the description to be obtained from another publicly available document, and is to include the information required by the regulations.
- (5) This section extends to a meeting that is closed to the public.

BYRON SHIRE COUNCIL
BIODIVERSITY AND SUSTAINABILITY ADVISORY COMMITTEE MEETING

BUSINESS OF MEETING

1. APOLOGIES

2. DECLARATIONS OF INTEREST – PECUNIARY AND NON-PECUNIARY

3. ADOPTION OF MINUTES FROM PREVIOUS MEETINGS

3.1 Biodiversity and Sustainability Advisory Committee Meeting held on 12 November 2015

4. BUSINESS ARISING FROM PREVIOUS MINUTES

5. STAFF REPORTS

Sustainable Environment and Economy

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STAFF REPORTS - SUSTAINABLE ENVIRONMENT AND ECONOMY

Report No. 5.1

Environmental Levy Budget

Directorate:

Sustainable Environment and Economy

Report Author:

Sharyn French, Manager Environmental and Economic Planning

File No:

I2015/343

Theme:

Ecology

Planning Policy and Natural Environment

Summary:

This report provides information on the projects funded by the Environmental Levy in accordance with Council's policy.

RECOMMENDATION:

That the Biodiversity and Sustainability Advisory Committee note this report.

Attachments:

- 1 Policy Environmental Levy Implementation No 15/003 adopted after close of exhibition 7/5/2015 Res No. 15-094, E2015/31373 , page 7

Report

Council's adopted Environmental Levy Implementation Policy, **Attachment 1**, states:

5. POLICY STATEMENT

5.1. *The Biodiversity and Sustainability Advisory Committee will review the allocation of funds from the Environmental Levy, namely by:*

- 10 a) *Providing advice to Council on matters to be considered for funding from the Environmental Levy each year*
- b) *Reviewing the projects funded by the Environmental levy on a quarterly basis, following advice provided by Council staff and report progress to Council*
- 15 c) *Reviewing annually the draft budget for expenditure of the Environmental Levy and providing advice to Council on both the allocation and expenditure of funds consistent with the Environmental Levy Terms of Reference including prioritisation and monitoring environmental outcomes of Levy funded projects*

20 The following information on the 2015/16 allocation and expenditure of the Environmental Levy is provided for the Committees consideration.

Table 1: 2015/16 Environmental Levy allocation and expenditure

Activity	2015/16 Allocation \$	Expenditure to 31 January 2016	Comment
Staff wages	236,200	130,500	Funds Bush Regeneration Team, Environmental Administration Office and partly funds Coastal Estuary Officer and Sustainability Officer
Operational Costs - Bush Regeneration Team	5,200	3,497	Purchase of tools and supplies
Community Infrastructure Maintenance Program	9,200	954	Allocated to implementation of Roadside Vegetation Management Plan
CZMP for Byron Bay Embayment	39,900	38,084	Allocated to contract with Water Research Laboratory for preparation of the Coastal Hazard Management Study Byron Bay Embayment
Feral animal control program	12,500	850	Allocated to trapping program in conjunction with Koala Connections project and Local Land Services.
Low Carbon Strategy	10,000	500	Allocated to implementation of priority Low Carbon Strategy actions.
Land for Wildlife Program	17,100 (c/o 2014/15)	3,815	Council's contribution to \$98,000 NSW Environmental Trust grant, a 3 year project commenced January 2015.
Bangalow Waterfront Environmental Works	24,300 (c/o 2014/15)	500	Riparian restoration works associated with removal of Bangalow weir.
Vegetation Mapping Stage 2	20,000 (c/o 2014/15)	18,771	Allocated to consultants engaged in mapping review.
Flying Fox Plan of Management	33,300	10,225	Allocated to development of Mullumbimby Flying Fox Plan and implementation of high priority

BYRON SHIRE COUNCIL

STAFF REPORTS - SUSTAINABLE ENVIRONMENT AND ECONOMY

5.1

Activity	2015/16 Allocation \$	Expenditure to 31 January 2016	Comment
			actions.
TOTAL	407,700	207,696	

Council has commenced budget preparations for the 2016/17 financial year. In February and March, staff will finalise compiling the first draft 2016/17 budget for Councillors consideration at a Strategic Planning Workshop in late March and reporting to Council in early April. The draft budget will be exhibited in April/May for adoption by Council in June.

Less staff wages, there are approximately \$156,000 Environmental Levy funds available to deliver projects in 2016/17. These funds are proposed to be disbursed to the following projects:

- Biodiversity and Conservation Strategy review - \$20,000
- Updating vegetation mapping with 2015 high resolution aerial imagery- \$61,400
- Low Carbon Strategy actions - \$13,000
- Coastal Zone Management Plan actions (excluding '*coastal protection works*') \$39,900
- Roadside Vegetation Management Plan - \$9,200
- Wild dog and feral animal control - \$12,500

In line with the Environmental Levy Implementation Policy, the Biodiversity and Sustainability Committee should consider providing advice to Council on matters to be considered for funding from the Environmental Levy.

Financial Implications

The eventual budget determined for the Environmental Levy for 2016/17 will be resolved by Council in June 2016.

Statutory and Policy Compliance Implications

Nil

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BYRON SHIRE COUNCIL

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POLICY NO. 15/003

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ENVIRONMENTAL LEVY IMPLEMENTATION

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E2015/31373

BYRON SHIRE COUNCIL

STAFF REPORTS - SUSTAINABLE ENVIRONMENT AND ECONOMY INFORMATION ABOUT THIS DOCUMENT

5.1 - ATTACHMENT 1

Date Adopted by Council	7 May 2015	Resolution No.	15-094
Policy Responsibility	Manager Land and Natural Environment		
Review Timeframe	As required		
Last Review Date:		Next Scheduled Review Date	

5 **Document History**

Doc No.	Date Amended	Details Comments eg Resolution No.
E2014/44800	26 June 2014	Draft Version after Res 14-321
E2014/61683	11 September 2014	Draft incorporating Biodiversity & Sustainability Advisory Committee recommendations (public exhibition version Res 15-94)
E2015/31373	7/5/2015	Adopted after close of exhibition 7/5/2015 as per Res 15-094 no submissions received

Further Document Information and Relationships

Related Legislation*	Coastal Protection Act 1979
Related Policies	Byron Biodiversity Conservation Strategy Byron Low Carbon Strategy Coastal Zone Management Plans
Related Procedures/ Protocols, Statements, documents	

Note: Any reference to Legislation will be updated in the Policy as required. See website <http://www.legislation.nsw.gov.au/> for current Acts, Regulations and Environmental Planning Instruments.

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POLICY TITLE ENVIRONMENTAL LEVY IMPLEMENTATION POLICY

1. OBJECTIVES

1.1. To inform the allocation of revenue raised through the Environmental Levy in the Byron Shire Council local government area.

1.2. To outline the arrangements for allocating and managing the Environmental Levy funds

2. BACKGROUND

Byron Shire is well known for its diverse, natural environment including beautiful coastlines, lush rainforests, creeks, rivers and mountain ranges which form part of the remnants of the Wollumbin caldera. These environmental assets are supported by an active and aware community that values and promotes the protection and enhancement of the environment.

Following the adoption of the Byron Biodiversity Conservation Strategy in 2004 Council received approval from the NSW government to apply a special rate variation of 2% for four years to fund a Biodiversity Levy in order to implement the Byron Biodiversity Conservation Strategy. In 2008, the Biodiversity Levy was replaced with an Environmental Levy that continues to support the implementation of the Byron Biodiversity Conservation Strategy as well as Council's sustainability and coastal programs.

The Environment Levy is a key revenue source to assist in the implementation of Council endorsed environmental plans and strategies. The Levy has been essential to the successes achieved through the implementation of a range of biodiversity, coastal and sustainability programs and enabled Council to leverage significant additional funding via external grants.

3. PRINCIPLES

The Environmental Levy is to be used to fund activities which either:

3.1. Identify, maintain, protect or enhance native biodiversity, ecosystems and ecological processes.

3.2. Reduce Byron Shire's greenhouse gas emissions or improve the environmental sustainability and resilience of Council and the community.

3.3. Undertake studies and prepare plans for coastal processes, values and risks and implement those actions that address protecting or enhancing coastal biodiversity, ecosystems and ecological processes.

4. TERMS OF REFERENCE

The Environmental Levy will only be used to fund staff, priority actions and projects consistent with:

4.1. Developing and/or delivering the Byron Biodiversity Conservation Strategy

4.2. Developing and/or delivering the Roadside Vegetation Management Plan

4.3. Developing and/or delivering the Byron Shire Low Carbon Strategy

4.4. Developing Coastal Zone Management Plans (CZMP), including estuary management plans, and delivering actions that are consistent with the above Principles, and/or the objectives of the above strategies, but not the implementation of 'coastal protection works' as defined under the *Coastal Protection Act 1979*¹.

5. POLICY STATEMENT

5.1. The Biodiversity and Sustainability Advisory Committee will review the allocation of funds from the Environmental Levy, namely by:

- a) Providing advice to Council on matters to be considered for funding from the Environmental Levy each year
- b) Reviewing the projects funded by the Environmental levy on a quarterly basis, following advice provided by Council staff and report progress to Council
- c) Reviewing annually the draft budget for expenditure of the Environmental Levy and providing advice to Council on both the allocation and expenditure of funds consistent with the Environmental Levy Terms of Reference including prioritisation and monitoring environmental outcomes of Levy funded projects

5.2. All funds collected including any funds raised through Environment Levy business activities is held and accounted for separately from Council's general revenue.

5.3. Environment Levy funds should not be available at any time for expenditure as general revenue in accordance with principles of the Environmental Levy.

5.4. Any unspent funds at the end of financial year are to be returned to the Environment Levy budget.

5.5. The Environment Levy can be used for leveraging funding through grants and partnership opportunities offered by government and other organisations.

5.6. Funds from the Environment Levy may be quarantined or saved annually in order to compound funds over subsequent years to raise a larger sum of funds for designated projects or matching grants.

¹ Under Part 1, section 4 (1) of the *Coastal Protection Act 1979*, *coastal protection works* means activities or works to reduce the impact of coastal hazards on land adjacent to tidal waters and includes seawalls, revetments, groynes and beach nourishment.

Report No. 5.2 High Conservation Value (HCV) and Office of Environment and Heritage's High Environmental Value (HEV) methodology

Directorate: Sustainable Environment and Economy

Report Author: Sharyn French, Manager Environmental and Economic Planning

File No: I2015/1501

Theme: Ecology
Planning Policy and Natural Environment

Summary:

The methodology used to derive Council's High Conservation Value (HCV) vegetation, known as the Relative Ecological Values Matrix (REVM), is redundant. Some of the data sets used to inform HCV are no longer supported and the methodology is no longer considered current best practice. The Office of Environment and Heritage has developed a state wide model to map High Environmental Values (HEV). The HEV model has been used to inform the Department of Planning's *Draft North Coast Regional Plan* (to be released for comment in early 2016). This plan will replace the current *Far North Coast Regional Strategy* that Councils are required to consider when preparing local land use strategies.

The Office of Environment and Heritage's HEV model will be used to inform the preparation of Council's draft Rural Land Use Strategy, providing a consistent northern NSW approach to the identification of land with high environmental values and in accordance with the state government's regional plan.

RECOMMENDATION:

That the Biodiversity and Sustainability Committee note this report.

Attachments:

- 1 Relative Ecological Value Matrix (REVM) used to derive HCV, E2015/81496 , page 17
- 2 Figure 1. Relationship of vegetation mapping review to other projects, E2015/81622 , page 21
- 3 Confidential - Office of Environment & Heritage HEV High Environmental Value Methodology , E2015/81916

Report***Rural Land Use Strategy***

Council at the 29 October 2015 meeting resolved (15-569) to endorse the Site Suitability Criteria and Mapping Methodology (SSCMM) as a key document to inform preparation of the Rural Land Use Strategy.

The SSCMM included land with HCV as a constrained matter, thereby excluding it from future rural development.

Council at the 10 December 2015 meeting considered the endorsed the Rural Land Use Strategy Site Selection Criteria and Mapping Methodology and related maps and resolved to note that the 'HCV' mapping will be presented in conjunction with the draft Strategy to Council in early 2016 for adoption.

Relative Ecological Value Matrix (REVM)

The REVM used to derive HCV was prepared over 10 years ago as part of the *Byron Biodiversity Conservation Strategy, 2004*. **Attachment 1** contains a copy of the ecological criteria used to inform the HCV map layer. Areas with a combined score of 27 or more are regarded as HCV.

Vegetation Mapping Review

In 2015, Council commenced a review of the vegetation mapping. Vegetation mapping was initially carried out in 1999 as part of the *Byron Flora and Fauna Study* and was partly reviewed in 2007. The review has improved the accuracy of the mapping and reflects changes in vegetation extent and composition over time.

The review used a combination of aerial photograph interpretation (API) primarily using 2014 aerial data, existing information such as, vegetation survey data from various Council and state government projects, and on-ground site inspections.

Vegetation was mapped using the State Government's Vegetation Information System (VIS) Classification database to ensure consistency with NSW standards. This system uses three levels; vegetation formations, vegetation classes and plant community types. The plant community type classification provides the most detailed description of vegetation and was developed by the state government to provide a standard approach to vegetation classification and mapping.

The revised vegetation mapping for Stage 1 coastal lowlands and Stage 2 remainder of the Shire, have been publicly exhibited and are now final. However, before reporting the final results, Council resolved (15- 417) that following public exhibition of Stage 2 the vegetation mapping for both Stages 1 and 2 be reviewed against the 2015 Hi-Res Imagery from Land and Property Information (LPI) prior to reporting back to Council. Council has now received the new 2015 aerial imagery from LPI. Funding to review the vegetation maps against the 2015 aerial imagery will need to be considered in the 2016/17 budget process.

The vegetation mapping review data will be used to inform several pieces of work including the Rural Land Use Strategy, E Zones, and the review of the Biodiversity Conservation Strategy, see **Attachment 2**, Figure 1 which shows the relationship of the vegetation mapping to these projects.

Office of Environment and Heritage's High Environmental Value (HEV) Methodology

The Office of Environment and Heritage (OEH) have produced a methodology to identify land with high environmental values. Known as the HEV methodology this has been used by the Department of Planning in the *Draft North Coast Regional Plan* (to be released for comment in early 2016). This plan will replace the current *Far North Coast Regional Strategy* that Councils' are required to consider when preparing local strategies such as the Rural Land Use Strategy.

Confidential Attachment 3 lists the criteria to be used in preparing a HEV map.

REVM/HCV versus HEV methodology

In reviewing the REVM methodology to update the HCV layer with the new vegetation data, a number of issues became apparent. Most significantly, the Forest Ecosystems types, used in the REVM, is out-dated and no longer supported. The REVM was heavily based on Forest Ecosystem types which are limited in relevance (as they excluded rainforest and non-forest vegetation) and are out of date (their conservation significance is based partly on their reservation status which has changed over time). Additionally, and in comparing the two models (HCV and HEV) the following issues were identified:

- there is still no mapping available to complete those fields in the REVM that were marked as having no mapping available in 2004. These are the fields shaded in light grey in **Attachment 1**.
- the 2015 vegetation mapping review used the State Government's Vegetation Information System (VIS) Classification ensures Council follows a state wide consistent approach. VIS doesn't support the outdated Forest Ecosystem types; it doesn't translate its vegetation categories into Forest Ecosystems and cannot be attempted as there are vegetation categories that have no equivalent Forest Ecosystem.
- vegetation classification, as used by VIS, has moved towards using Plant Community Types and Keith classes. Office of Environment's HEV method fits with the approach used in Native Vegetation Plans and Biobanking, which rely on Plant Community Type classifications. In addition, the OEH methodology recognises private land with conservation commitments, riparian vegetation and key habitats. It may also tie in more easily with the state government's E Zone criteria.
- the plant community typing, the third and most detailed level used in VIS, is a work in progress. Whilst there are some vegetation types that have no current classification, OEH have a process to assess and determine new plant community types. Byron's vegetation mapping review identified potential new plant community types and some issues with the existing plant community descriptions for north-eastern NSW. These matters will be referred to OEH. Whilst there may be difficulties in using an incomplete plant community type classification for the purposes of HEV modelling, it is preferable to the use of Forest Ecosystems and should serve well into the future as new information becomes available the mapping can be readily updated.
- whilst the HEV model does not consider wildlife corridors (as does the REVM model), Council could chose to map wildlife corridors as a separate layer at a future stage. Council's Biodiversity and Sustainability Committee are reviewing Council's wildlife corridor methodology as part of the Biodiversity Conservation Strategy review. Information resulting from this review will be provided to Council in due course for consideration.
- it seems likely that the HEV model would pick up the areas identified as HCV in the 2004 Biodiversity Strategy, and there may be an expansion of high environmental value land across the Shire as a result of concerted community efforts to restore the land
- the HEV riparian buffers are based on 3rd order streams. The current Byron-Tweed drainage layer is in some instances up to 30m out, as such any application of buffers to this line cannot be satisfactory. The layer will need to be updated by air photo interpretation and GIS and re-aligned prior to identifying vegetation within 40m of streams. This could form part of a future HEV mapping update.

Conclusion

The REVM/HCV methodology is redundant. The Office of Environment and Heritage have developed a model to identify land with high environmental values. Known as the HEV model, it has been used by the Department of Planning to inform the soon to be released *Draft North Coast*

Regional Plan. Council's local strategies such as the *Draft Rural Land Use Strategy* need to be consistent with regional plans. Therefore, OEHs HEV model is being applied to inform the Site Selection Criteria and Mapping Methodology for the Rural Land Use Strategy.

- 5 The results of OEHs HEV methodology will be reported to Council early 2016 meeting, along with the draft Rural Land Use Strategy for consideration.

- 10 It is important to acknowledge that mapping is a reiterative process and that any information gaps in the HEV model will be updated as new information becomes available or when information changes such as amendments to listed species under the *Threatened Species Conservation Act*.

Financial Implications

- 15 Nil

Statutory and Policy Compliance Implications

- 20 The HEV methodology will be used to inform the Rural Land Use Strategy, E Zones, and the review of the Biodiversity Conservation Strategy.

Byron Biodiversity Conservation Strategy 2004

Table 1: Relative Ecological Value Matrix for the Byron Shire.

NB: mapping not yet completed or available for rows with light shading.

Mapping for patch/remnant size will be displayed separate to the Ecological Values Matrix and be used in association with distance from/proximity to ecologically resilient or ecologically threatened vegetation to prioritise restoration works.

Ecological criterion	Very high ecological value (HCV)	Relatively high ecological value	Medium ecological value	Lower ecological value	Very low ecological value
Points Value	27	9	3	1	0
A. Forest Ecosystems					
1. Growth stage of vegetation (based on Byron Flora and Fauna old growth mapping)	Old growth forest				Cleared land
2. Rare, endangered and vulnerable forest ecosystems (including rainforest) (based on conservation criterion as defined in JANIS)	Rare and Endangered forest ecosystems R & E FE's with 100 % target set	Vulnerable ecosystems (FE's with 60% target set) or ecosystems identified as being Severely Depleted (SD=> 55% cleared)			
3. FE with limited extent in Shire (except introduced scrub, forestry plantations & water surfaces)	< 100 & > 0 ha in Shire ie FE = < 0.19 % of Shire	> 100 & <= 500ha in Shire ie FE = < 0.96 % of Shire	> 500 & <= 1000 ha in Shire ie FE = < 1.92 % of Shire		
4. Adequacy of reservation (% of each forest ecosystem remaining on private property that needs to be formerly reserved to meet CRA reservation targets once all reservation categories on public land have been accounted for)	Currently very poor. > 60 % needs to be reserved to meet reservation targets.	Currently poor. >30 & <= 60 % needs to be reserved to meet reservation targets.	Currently moderate. > 10 & <= 30 % needs to be reserved to meet reservation targets.	Currently reasonable. <= 10 & > 0 % needs to be reserved to meet reservation targets.	Currently good. 0 - no reservation is required to meet targets.
5. % of FE cleared in Upper North East (based on CRA estimates of original vegetation at 1750 for the region – does not include rainforest, heath or wetlands)	> 70 % cleared. (< 30 % of the original forest ecosystem in the UNE region remains)	> 55 & <= 70 % cleared. (between 30 – 45 % of the original forest ecosystem in the UNE region remains)	> 40 & <= 55 % cleared. (between 45 - 60 % of the original forest ecosystem in the UNE region remains)	> 25 & <= 40 % cleared. (between 75 - 60 % of the original forest ecosystem in the UNE region remains)	<= 25 % cleared. (more than 75 % of the original forest ecosystem in the UNE region remains)
6. Locally endemic FE (> 75 % of FE distribution in Byron Shire compared to area in UNE)	> 75% of FE distribution in Byron Shire (excluding wattle)				
7. FE's whose target cannot be met wholly on public lands		Ecosystems identified as being Private Land Priority (PLP) for protection			

Byron Biodiversity Conservation Strategy 2004

Ecological criterion	Very high ecological value (HCV)	Relatively high ecological value	Medium ecological value	Lower ecological value	Very low ecological value
B. Native Fauna					
8. Fauna corridors Mapping shown as: vegetated corridor (habitat); and non vegetated corridor (environmental repair & enhancement)	➤ Vegetated identified corridors (derived and mapped by NPWS and refined by BSC - incorporates escarpment zone) ➤ Rivers (20 m buffer)	➤ Exotic Vegetated identified corridors ➤ Local corridors* * (local corridors currently unmapped – to be delineated by local groups/landholders in consultation with Council and have long term security of title and/or landuse via zoning, covenant or property management plan)	Non vegetated identified corridors		
9. Significant animal habitats. *Key fauna habitats based on NPWS derivation (ground truthed to BSC veg mapping). *Class 1 modelled habitat based on NPWS modelling (ground truthed to BSC veg mapping). *Shorebird roost/nest sites mapped by BSC.	Shorebird nest & roost sites Class 1 modelled habitat for select key threatened fauna species	Key fauna habitats derived by NPWS and refined by BSC to fit to native vegetation			
10. Grey – headed and Black Flying Fox maternity/roost sites (both are listed threatened species)	Identified maternity/roost sites for the Grey headed Flying Fox and Black Flying Fox				
11. Koala habitat Based on Byron Veg mapping modelled using Koala Habitat Categories developed by Australian Koala Foundation.	Identified core Koala habitat (SEPP 44)	Primary habitat (FE's = 73, 102, 142) Secondary habitat (class A) (FE = 154) Secondary habitat (class B) (FE's = 26, 95, 101, 109, 152)	Secondary habitat (class C) (FE's = 23, 37, 50, 65, 71, 74, 103, 106, 147, 148)	Tertiary habitat (FE's = 22, 76, 112, 143, 151, 169)	
12. Threatened animal species (based on methodology for North Ocean Shores LES) <i>Develop buffers for different guilds of species.</i>	Recorded locations and known habitat of animal species listed on the Commonwealth Environment Protection & Biodiversity Conservation Act	Recorded locations and known habitat of animal species listed on the NSW Threatened Species Conservation Act	Recorded locations and known habitat of animal species identified as regionally significant <i>(no mapping currently available)</i>		
C. Native flora					
13. Significant Byron Shire flora habitats. (based on CRA data – not available yet - to be prepared by NPWS)	Centres of endemism (habitats for plants restricted to the Tweed, Brunswick and Richmond Valleys or those that also have isolated outlying populations eg Dorrigo)				

Byron Biodiversity Conservation Strategy 2004

Ecological criterion	Very high ecological value (HCV)	Relatively high ecological value	Medium ecological value	Lower ecological value	Very low ecological value
14. Subject to threatening processes within Byron (FE negatively impacted by dieback, disturbance by fire, fragmentation, high levels of weed invasion and > 10 % in 2A zone)	> 10% of FE in Byron Shire occurs in 2A zone.		Weed = 5, 22, 65, 112, 141, 142, 143, 152, 154, 168. Dieback = 26, 73, 154. Fire = 5, 22, 50, 77, 112, 143, 152, 154, 168.	Subject to overall threats regionally (based on CRA data) Overall threat classes = clearing, logging, grazing, weed, burning, other)	
15. Other significant flora habitats		Key habitats (<i>no mapping currently available</i>)			
16. Rare and Threatened plant locations (point locations only – buffers to be determined) same methodology as for Nth Ocean Shores LES 1996	Recorded locations and known habitat of plant species listed on the Commonwealth Endangered Species Protection Act	Recorded locations and known habitat of plant species listed on the NSW Threatened Species Conservation Act	Recorded locations and known habitat of plant species identified as regionally significant (<i>no mapping currently available</i>)		
D. Non-forest ecosystems					
17. Wetlands (wetland mapping based on combining 2 different DIPNR mapping products for Richmond & Brunswick as well as SEPP 14) Richmond mapping by Early Brunswick mapping by Lenehan/Green NB: Belongil wetland mapping in progress & to be added when available		Dunal swamps & lagoons Estuarine lakes & lagoons Floodplain complex or forest Mangrove or saltmarsh Upland lakes & lagoons Upland swamps SEPP 14 wetlands			
18. Native Grasslands (<i>no mapping currently available</i>)	Native Grasslands				
19. Heath and Banksia		Mapped heath and banksia			
20. Register of the National Estate (need to get mapping)		Lands mapped for biodiversity values (flora and fauna species richness)	Lands mapped for their naturalness values		
21. Floodplains (based on DIPNR floodplain/wetland mapping)	Woody native vegetation on floodplain				
22. SEPP 26 mapping	Lands mapped as SEPP 26				
23. Endangered Ecological Communities listed under the NSW Threatened Species Conservation Act	Lowland Rainforest on Floodplain Byron Bay Dwarf Graminoid Clay Heath				

Byron Biodiversity Conservation Strategy 2004

The following Data layers are to be displayed as single maps for comparison against the map of ecological value.

	Very high ecological resilience	Relatively high ecological resilience	Medium ecological resilience	Low ecological resilience	Very low ecological resilience
Patch/remnant size – ecological resilience to threatening processes	Patch size > 1000 ha	Patch size > 250 & <= 1000 ha	Patch size > 50 & <= 250 ha	Patch size > 5 & <= 50 ha	Patch size < 5 ha
	Very high ecological threat	Relatively high ecological threat	Medium ecological threat	Lower ecological threat	Very low ecological threat
Patch/remnant size – ecological threat in core vegetation	Patch size < 5 ha.	Patch size < 50 & >= 5 ha.	Patch size < 500 & >= 50 ha.	Patch size < 1000 & >= 500 ha.	Patch size > 1000 ha.

NB:* use distance to nearest remnant > 5ha as criteria for identifying threat/resilience (ie prioritise ecological repair and enhancement areas on distance/proximity to ecologically resilient vegetation and to ecologically threatened vegetation).

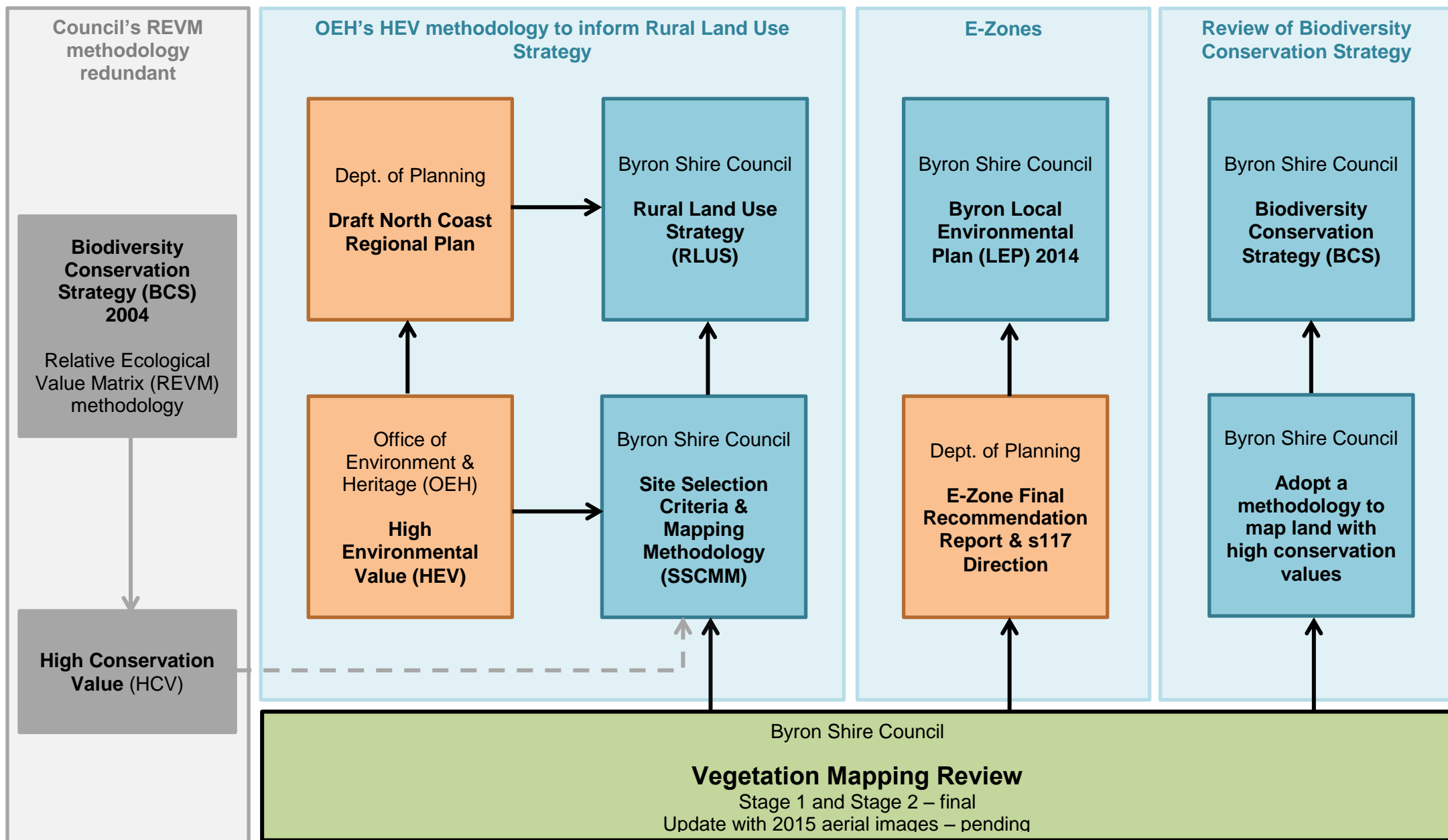
Existing Environmental zoning's (according to Byron LEP) <i>excluding 7f2</i>	Existing Environmental Protection Zones (7a, 7b, 7c, 7d 7f1, 7j & 7k) – NB: current zones may require ground truthing
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Table 2: Conservation Criteria of vulnerable, rare and endangered Forest Ecosystems

Ecosystem Status	
Vulnerable	<ul style="list-style-type: none"> ➤ is approaching 70 % reduction in areal extent within bio-region (10 – 30% remaining & target of 60% of current distribution); ➤ remains subject to threatening processes; or ➤ not depleted, but significant threatening processes exist which may reduce its extent; ➤ includes ecosystems where threatening processes have caused significant changes in species composition, loss or significant decline in species that play major role within ecosystem, or significant alteration to ecosystem processes.
Rare	<ul style="list-style-type: none"> ➤ geographical distribution involves a total range of less than 10,000 ha; ➤ a total area of < 1,000 ha and target of 100% of its current distribution; ➤ patch sizes < 100 ha, where such patches do not aggregate to significant areas; ➤ old growth forest less than 10 % of the extent of distribution;
Endangered	<ul style="list-style-type: none"> ➤ < 10% remaining and a target of 100% of its current distribution. ➤ distribution has contracted to less than 10 % of its former range; or ➤ total area has contracted to less than 10 % of its former area; or ➤ 90 % of its area is in small patches which are subject to continuing threatening processes

(Janis report 1997)

Figure 1. Relationship of vegetation mapping review to other projects



Report No. 5.3
Directorate: Sustainable Environment and Economy
Report Author: Sharyn French, Manager Environmental and Economic Planning
File No: I2016/30
5 **Theme:** Ecology
Planning Policy and Natural Environment

Summary:

10 This report provides background information to the Committee of the mapping methodology for wildlife corridors. The Biodiversity Conservation Strategy sub group will meet to further discuss.

15 **RECOMMENDATION:**

That the Biodiversity and Sustainability Advisory Committee note the report and that the Biodiversity Conservation Strategy sub group will meet to discuss the review of the wildlife corridor mapping.

Attachments:

- 20 1 Wildlife corridor mapping, E2016/1421 , page 28
2 OEH Priority Investment Areas Mapping Guide, E2016/4859 , page 34

Report

Byron Shire's wildlife corridors were developed as part of the Byron Biodiversity Conservation Strategy (BCS) 2004 and are based on wildlife corridor mapping produced by National Parks and Wildlife Service (NPWS). The NPWS mapping was refined by ecologists and botanists involved in the production of the BCS based on detailed knowledge of the Byron Shire landscape and the ecology of local fauna and flora species. Wildlife corridors have been developed to identify important links across the landscape to encourage the movement of flora and fauna species.

The current mapping represents existing, potential and preferred habitat and corridors as a single layer. The original mapping categorised the land as "primary corridors" comprising remnant native vegetation and "secondary corridors" – cleared land which lay in important connectivity locations as well as corridors dominated by exotic vegetation such as camphor laurel. In 2007, the different classifications were collapsed into a single GIS layer for wildlife corridors. (see Attachment 1 – Figure 1A)

When viewing the mapped corridors, they appear as wide avenues under which stricter environmental planning conditions apply. What this fails to take into account is the different classes of corridor and the difference between existing and potential habitat. While linear corridors with continuous vegetation are the more recognisable form, stepping stones of isolated patches of vegetation can still act as effective wildlife corridors. For them to provide effective connectivity, however, the maximum distance between them is generally accepted to be 100m (OEH factsheet).

Mapping methodology

Byron Biodiversity Conservation Strategy 2004

Development of planning controls for wildlife corridors

Primary (existing native vegetation) and secondary wildlife corridors (exotic vegetation and non-vegetated areas), were mapped from the NPWS data and refined by BSC ecologists. Primary corridors were given an ecological value of 27, deeming them HCV.

In developing planning controls for secondary wildlife corridors Council had regard to the following.

- The need to review Councils DCP (or similar planning control) for exempt and complying development to ensure the appropriateness of any forms of development in 'secondary wildlife corridors';
- All identified wildlife corridors are to be afforded environmental protection zoning and where possible enhanced;
- Clearing, draining, filling or destruction of High Conservation Value vegetation or habitats, vegetated wildlife corridors and threatened species habitat will not be permitted unless there are no other alternatives;
- Development of effective planning controls shall promote and allow for environmental repair and enhancement and active management;
- Development of effective planning controls shall maintain, protect and enhance corridor values in order to facilitate the movement and dispersal of species across the landscape;
- Development of effective planning controls that control development that will impact on potential corridor values;
- To ensure that any development that occurs in a 'secondary wildlife corridor' will be required to undertake environmental repair and enhancement actions as part of that development (similar to that in the *Byron Rural Settlement Strategy* with 900 trees per dwelling).

Development of mapped wildlife corridors

The NSW NPWS (now Department of Environment and Conservation - DEC) prepared mapping of regional and subregional wildlife corridors for north-east NSW (including Byron Shire), based on key fauna habitat modelling and vegetation mapping (See Attachment 1 – Figure 2). This mapping was refined by Council to better reflect on ground attributes (such as vegetation cover and existing environmental protection zones). Regional corridors (greater than 500m in width allowing migratory pathways across altitudes and latitudes, thereby connecting regions such as coastal, hinterland and tableland ecosystems) and subregional corridors (with vegetated landscape features such as ridges and valleys requiring connection, preferably with corridors greater than 300m wide) were then amalgamated to a single layer, with mapped rivers (with a 20-metre buffer) added to include the main riparian corridors. (See Attachment 1 – Figure 3)

Key notes from the 2003 NPWS study upon which Council's methodology is based:

- Corridors are specific to a biological group for which likely preferred habitat can be mapped (faunal assemblages).
- For any particular assemblage, animals usually follow the path of least resistance when moving through landscapes, and corridors are based on the best available combination of a habitat hierarchy linking two patches of habitat.
- Corridors are not necessarily continuous—they may be broken by currently degraded or cleared areas but must contribute to overall landscape connectivity, or have the potential to do so given restoration. Accordingly, stepping-stone patches provide connectivity and can function as corridors for mobile species, particularly those willing to cross expanses of cleared land (e.g. Date et al. 1991, 1996; Brooker et al. 1999; Eby et al. 1999).
- All else being equal, wide corridors are better than narrow corridors but spatial dimensions should reflect the demographic requirements of species that are rare and that have specialized habitat and foraging requirements. The requirements of wide-ranging species (e.g. nomads and migrants) are also important (Dobson et al. 1999).
- Corridors spanning natural spatial gradients (e.g. altitudinal and latitudinal gradients) are critically important in the context of ecological processes and climate change. Species acting as vectors for ecological processes (e.g. propagule dispersers, predators) require special consideration;
- Sub – regional corridors are landscape corridors that serve more as routes for dispersal and movement for assemblage reference species and wide-ranging species, rather than habitats in their own right.

Neighbouring Councils' mapping methodology

Lismore

In producing their Biodiversity Conservation Strategy (BCS), Lismore Council engaged Landmark Ecological Services to produce a study based on the mapping of key habitats and corridors (<http://www.lismore.nsw.gov.au/page.asp?f=RES-CVI-50-43-25>). Vertebrate fauna and their habitat were used as surrogates to determine overall biodiversity values and to identify and rank key habitats and corridors. Key habitats were identified using vegetation mapping developed in 2011, mapping of watercourses and soils, vertebrate records from the Atlas of NSW Wildlife (OEH, Sydney) and previous corridor mapping undertaken for the LGA. Key habitats were identified and ranked on the basis of their known or potential value as habitat for threatened species and for other conservation-priority species with core habitat in the Lismore LGA.

The study compared its mapping methodology to the former Catchment Management Authority (CMA) mapping, and resolved habitat types to a finer scale. It also contained prioritisation for rehabilitation and preservation of habitat and corridors, and their ranking in terms of their significance in achieving these outcomes.

This is by far the most comprehensive effort amongst the surrounding councils to map corridors. The information was provided under a subheading of *Urban Green Corridors Plan* within the BCS.

Tweed

5 The Tweed Council's two staff concerned with environment are on leave till 18 January. A search of their website and phone contact revealed very little information on wildlife corridors. The only mention was within their recently released CKPoM. No mapping or methodology was detailed or known, with references only to the need to provide corridors for koalas without any management actions provided. Mapping identified habitat with no corridors identified.

10 Work on a biodiversity management plan is ongoing, with the potential for inclusion of vegetation mapping which factors in connecting corridors.

Ballina

15 Ballina Council has utilised the NPWS mapping to inform their corridor identification in their DCP 2012. Due to staff leave arrangements, there is no information available till after the 18 January as to methodology which may have been more recently employed for vegetation mapping. No further information is available on their website.

20 **State planning**

OEH is developing two mapping categories for future land management; Priority Investment Areas (PIA) and High Environmental Value (HEV).

25 PIA are sites where funding for biodiversity management can make the greatest difference for biodiversity and typically include large remnants and biodiversity corridors (See Attachment 2). These priority areas will assist funding bodies in identifying preferred locations to invest biodiversity funds. The North Coast mapping is currently classified as "near completion".

30 The corridors identified as PIAs include only those of state and regional significance. While corridors of local significance play an important role for connectivity, they are not identified as PIAs and the identification of local corridors remains the responsibility of local government and Local Land Services, through Local Environmental Plans (LEPs) and other mechanisms.

35 This differs from HEV which are areas that contain values of particular significance that are considered for protection under statutory instruments. The HEV criteria are used by OEH Regions to construct an HEV map for submission to the Department of Planning & Environment (DPE) for inclusion in Regional Growth Plans (RGPs) (See separate report on HEV for methodology).

40 A landowner's rights to carry out activities such as agriculture and development are not altered by their property being identified within a PIA; it is not a constraint but rather an opportunity to attract funding for critical habitat restoration and preservation. PIA's may however comprise areas of HEV. Landuse planning should be informed by HEV mapping, and the use of PIA mapping as the base layer for land use planning is not recommended.

45 One of the key corridor projects in NSW is the Border Ranges Alliance in the Great Eastern Ranges corridor. An independent report to the Interstate Agency Working Group convened under the Environment Heritage and Protection Council/Natural Resource Management Ministerial Council provides comprehensive detailing of the rational of and need for wildlife corridors. See
50 <http://www.environment.nsw.gov.au/resources/nature/ccandger.pdf> for the paper.

National level

55 The previous government produced a *National Wildlife Corridors Plan: a framework for landscape-scale conservation* in 2012. (<https://www.environment.gov.au/system/files/resources/e73bc1c8->

[81f0-4800-8f1a-3fb6cb7558ac/files/national-wildlife-corridors-plan.pdf](https://www.environment.gov.au/system/uploads/attachment_data/file/58110/81f0-4800-8f1a-3fb6cb7558ac/files/national-wildlife-corridors-plan.pdf)) In its own words “The Corridors Plan represents the Australian Government’s commitment to retain, restore and facilitate active management of corridors and natural patterns of vegetation, waterways and other landscape features across public and private lands, through our cities and towns, and between our national parks. Through the Corridors Plan, cooperative, voluntary action on the part of all land managers to restore ecological connections throughout the landscape is supported—be it farm land, urban land, conservation areas or Indigenous land that is being managed.”

The plan stressed the importance of wildlife corridors in assisting species survive the impacts of climate change, and seeks to increase community participation in wildlife corridors and connectivity conservation.

Examples of current local on ground work

Land for Wildlife – restoring rainforest in a biodiversity hotspot

In collaboration between Council, NSW Environmental Trust (ET) and local Land for Wildlife members, weed control, tree planting and native fauna nesting box deployment is occurring across 11Ha on 11 properties. Currently entering its second year, this ongoing project is funded by Council and ET grant (\$99,000). The majority of the properties lie within areas currently mapped by Council as wildlife corridor. (See Attachment 1 – Figure 4)

The project is categorised by ET under Vegetation corridors/Vegetation management and feedback from ET prior to the delivery of the second year of funding included “The achievements so far in the on-ground component of the project are excellent. The Grantee is targeting high priority areas identified in the Border Ranges Biodiversity Management Plan and then using work plans to guide on-ground work.”

Koala Connections

Guided by the Tweed and Byron Coast Koala Habitat Studies by Dr Steve Philips, the project will improve north-south and inland to coastal indicative koala linkages, and improve ecosystem resilience and adaptation to climate change. The project works will enhance the wildlife corridors of Byron Shire, improving the linkages between the hinterland koala populations of the Huonbrook - Wilsons Creek area, and the coastal populations near Tyagarah. Where habitat connections are through many small holdings, several neighbours are working together under the Koala Connections program, to develop a strategy for on ground works. Action plans will provide the guidance for each site to rebuild the habitat. Attachment 1 – Figure 5 shows the overlap between current primary koala habitat and class A secondary habitat with the wildlife corridors.

Background Overview – sourced from OEH

Habitat loss and fragmentation are the two main contributors to continuing biodiversity decline across the landscape. Wildlife corridors may be a key tool in slowing or possibly reversing this trend.

While stepping stone fragmented habitats may be of some use to birds and mammals able to fly, linear corridors provide a more comprehensive protection for enabling the movement of plant, fungi and animal species. The maximum separation distance for patches to provide connectivity and act as a corridor is generally accepted to be 100 metres.

Corridors are critical for the maintenance of ecological processes including facilitating the movement of animals and the continuation of viable populations. This is particularly important for ensuring genetic diversity within species. Communities with isolated gene pools can become susceptible to inbreeding, while potentially losing resilience to survive impacts from habitat loss and disease outbreak. Corridors also allow for greater recolonisation post impact.

In helping species adjust to climate change impacts by allowing altitudinal and latitudinal movements, promoting the increase in corridors also potentially makes a contribution to increasing

carbon store capacity of a region while improving water quality and flow patterns in catchments. This can reduce impacts of erosion over the longer term.

5 Many animals are also vital for the fertilisation of plant species, particularly rainforest trees. The inability of native fauna to reach isolated remnant ecosystems may lead to local extinctions. Fragmented habitats also become more susceptible to issues such as arise from edge effects, where weed species are able to infiltrate the remnant. Wider corridors are more resilient and can act as habitat in their own right.

10 Regionally, it is important to maintain corridors greater than 500m in width. This can allow migratory pathways across altitudes and latitudes, thereby connecting regions such as coastal, hinterland and tableland ecosystems.

On a sub-regional scale, vegetated landscape features such as ridges and valleys require connecting, preferably with corridors greater than 300m wide.

15 Locally, corridors provide important connections amongst remnant patches of vegetation and landscape features such as creek lines, gullies, wetlands and ridges.

Conclusion

20 The current Council wildlife corridor mapping was developed as part of the Byron Biodiversity Conservation Strategy (BCS) 2004 and is based on wildlife corridor mapping produced by National Parks and Wildlife Service (NPWS) refined by BSC ecologists.

25 The corridors are vital connectivity measures facilitating species movement across fragmented habitat. They act to limit species loss by providing resilience for genetic diversity, assist population recovery post fire/flood and reduce negative impacts of climate change by allowing movement to more suitable habitat.

30 Future mapping may be more readily accepted by the landholders if corridors were categorised as existing or potential. It would be good to prioritise supporting riparian and ridgeline revegetation over paddock scale projects, as these are both frequented habitat for wildlife and more likely to gain the cooperation of landowners. Funding such as for the Land for Wildlife project may then be more readily acquired through PIA mapping.

35 The most detailed and comprehensive corridor mapping for a neighbouring council at present is that produced by Landmark for Lismore LGA. Future mapping should coordinate Byron corridors with Lismore, Tweed and Ballina corridors.

40 State government moves from HCV to HEV classification are reflected in new mapping methodology. PIA mapping (near completion) will assist in prioritising areas for biodiversity protection, but should not be used for future wildlife corridor mapping.

Financial Implications

45 Nil

Statutory and Policy Compliance Implications

The review of the Biodiversity and Conservation Strategy will consider a methodology for wildlife corridors.

Attachment 1



Figure 1 A) The current wildlife corridor mapping built from NPWS input and Council's 2007 vegetation layer.



Figure 1 B) Corridors combined with HCV layer

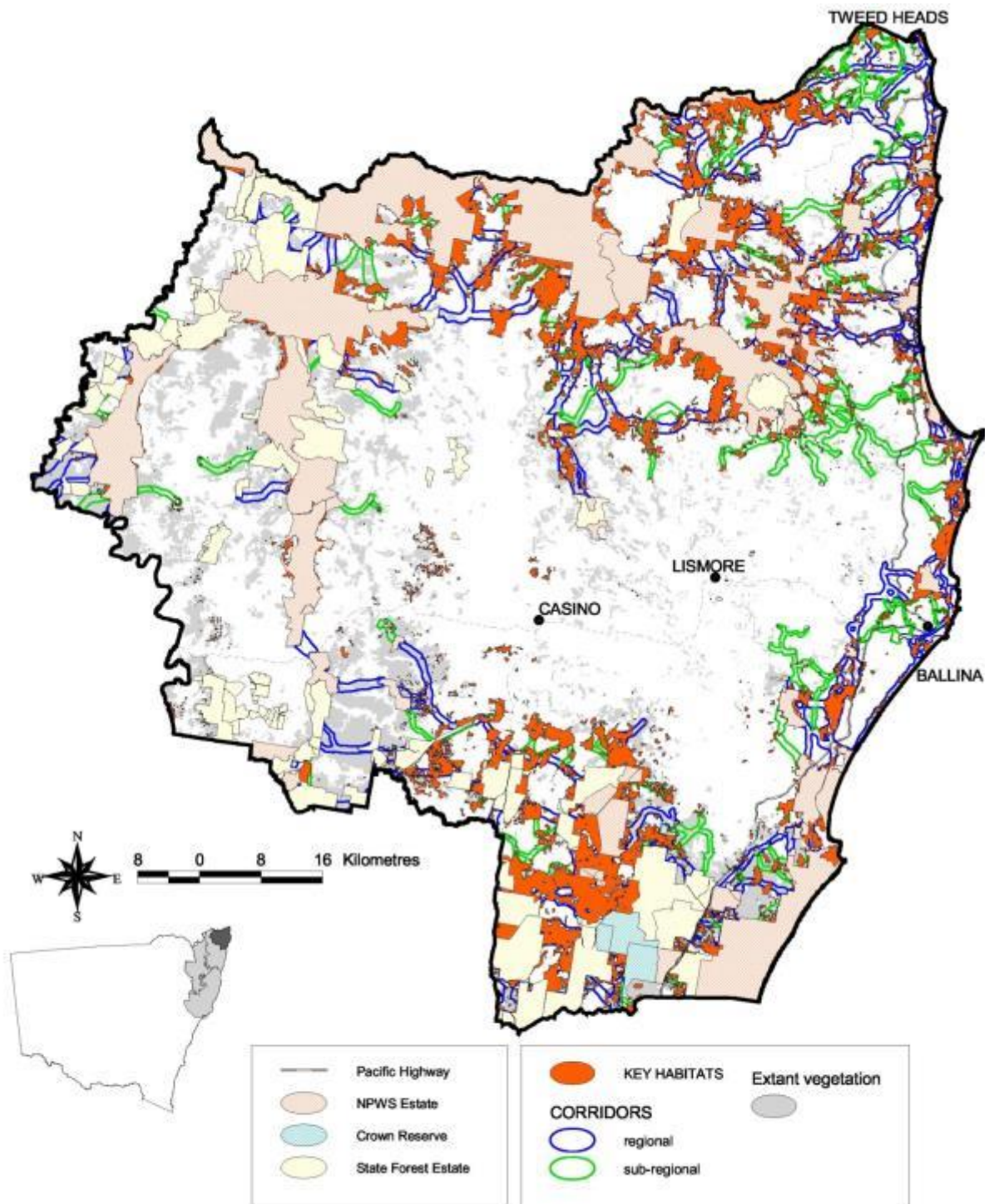


Figure 2: Key habitats and wildlife corridors of north east NSW – NPWS

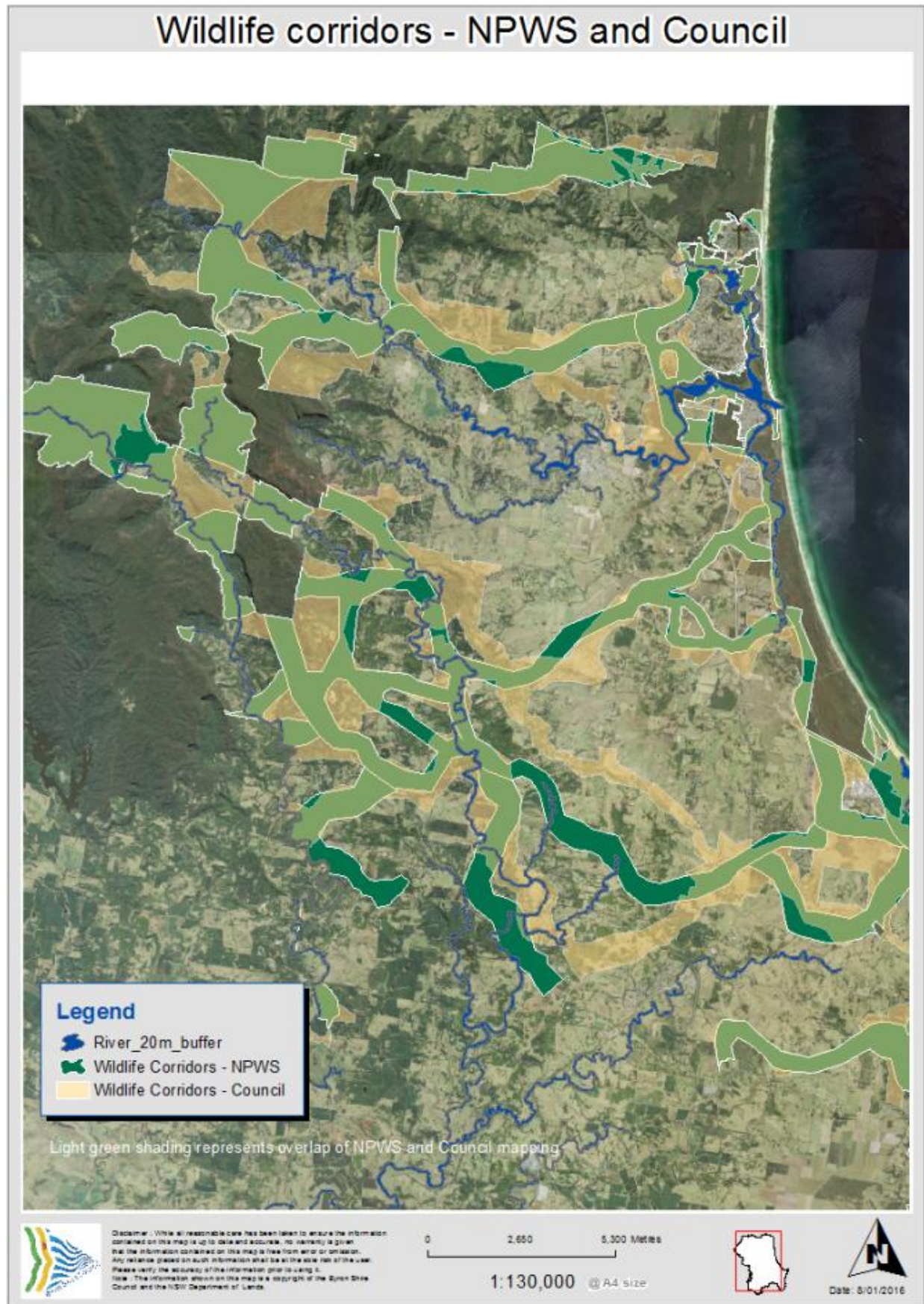


Figure 3: The original NPWS corridors with Council's adjusted corridor mapping overlaid.

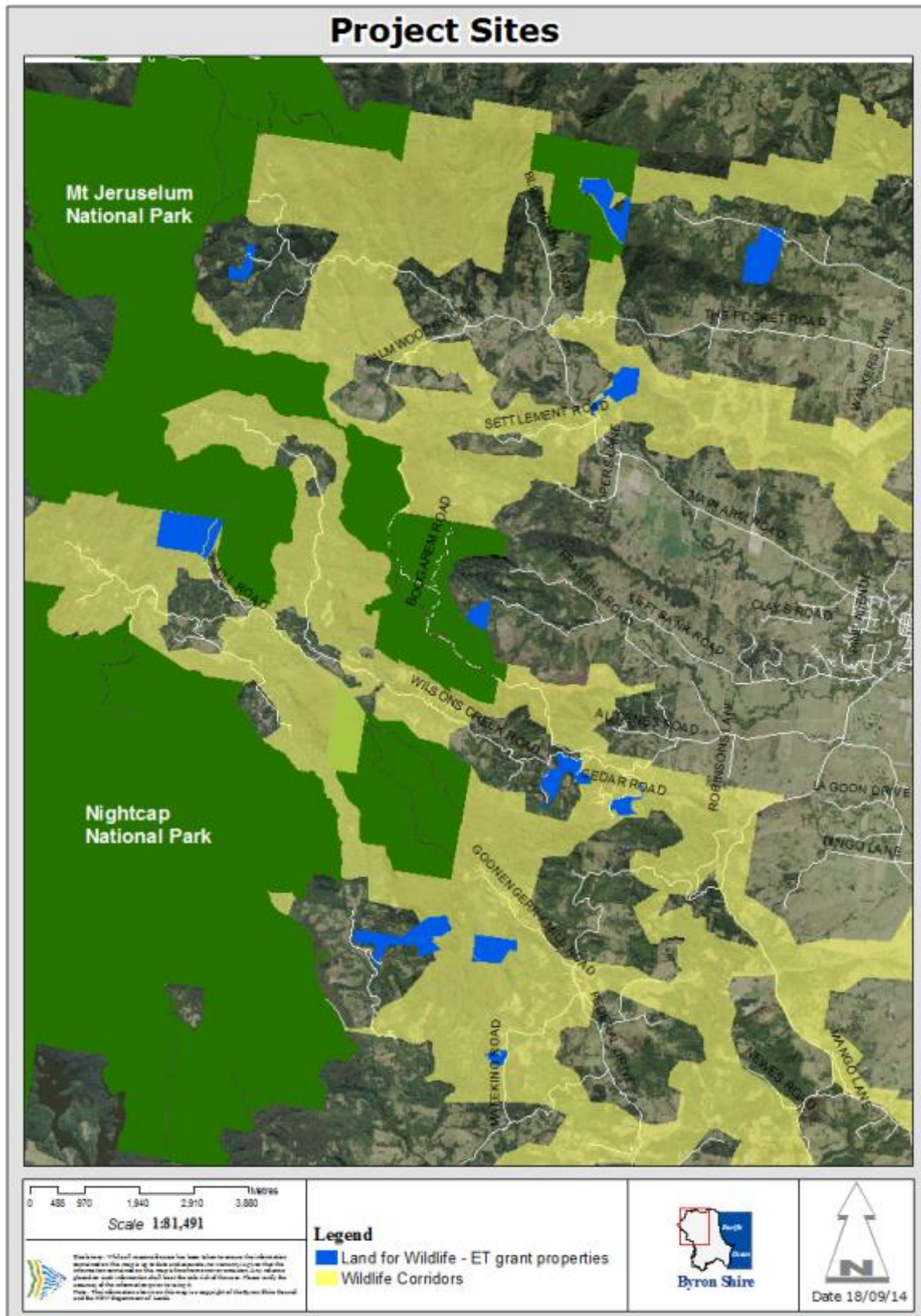


Figure 4 The Locations of properties involved in the Council - ET Trust – Land for Wildlife project.

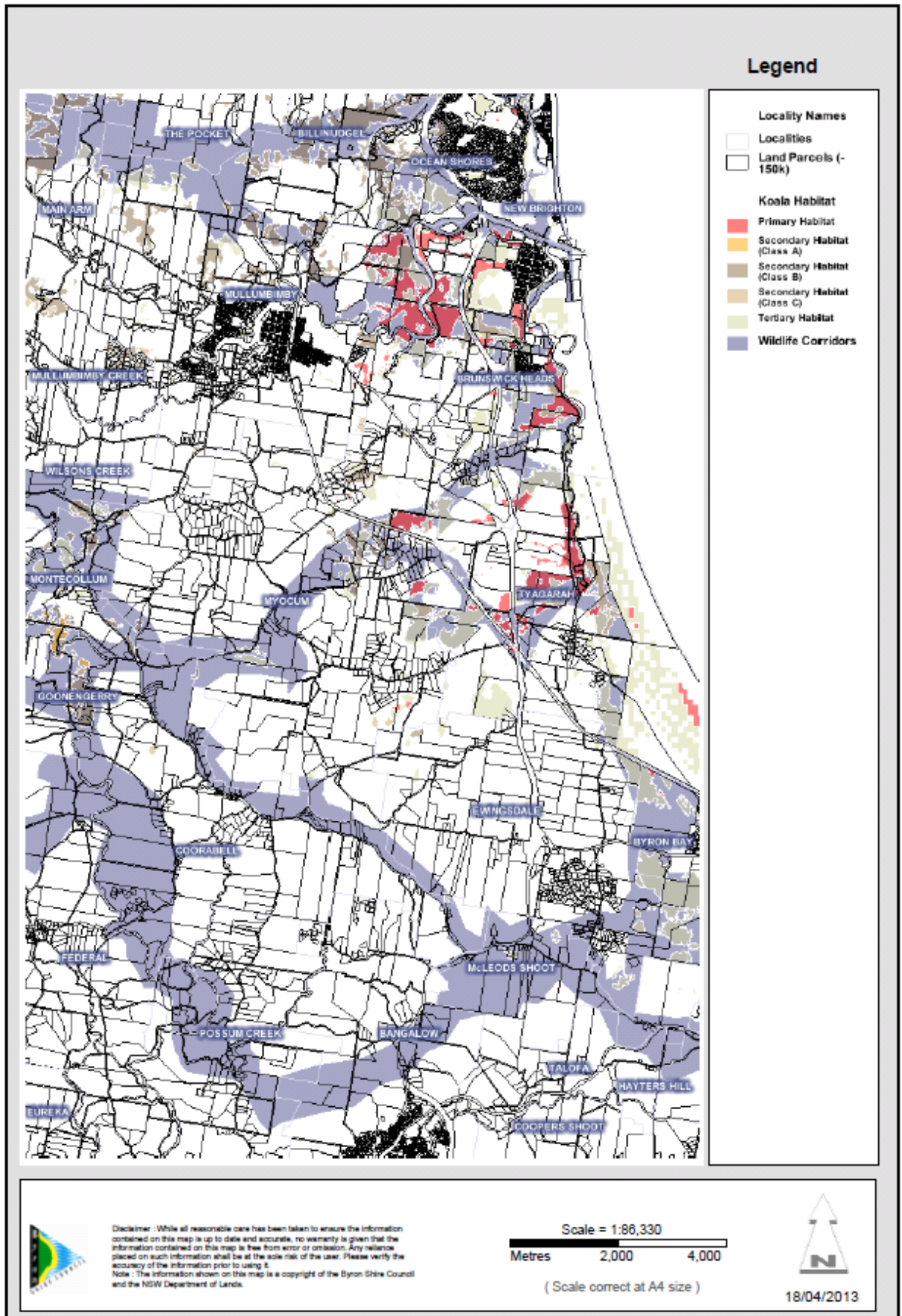


Figure 5 Koala habitat identified within the Koala Connections project in relation to current wildlife corridors.

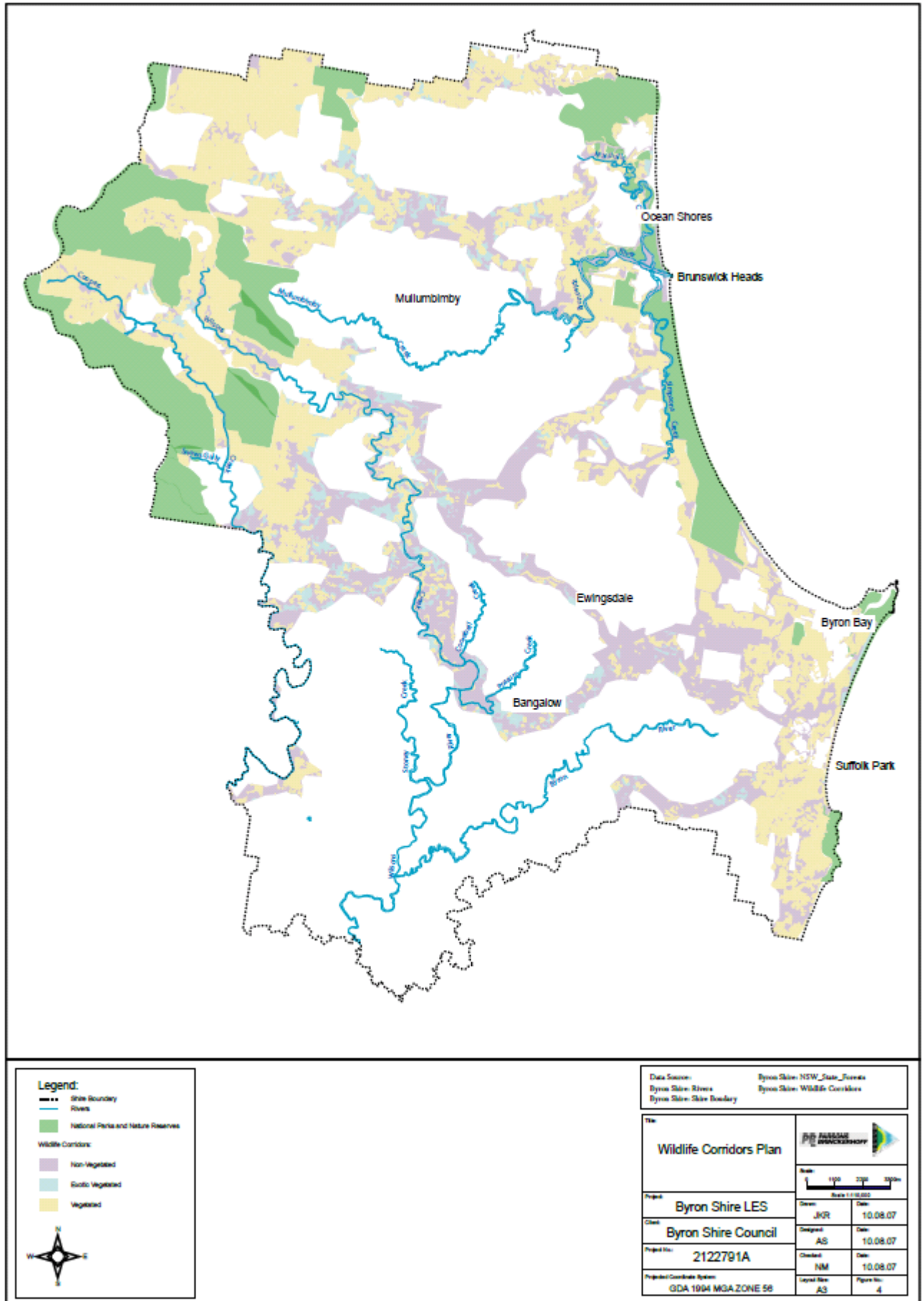


Figure 6 The wildlife corridor plan prior to the collapsing of the layers as shown in Figure 1A



Office of
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& Heritage

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PRIORITY INVESTMENT AREA USE AND MAPPING GUIDE

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06/05/2015

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Executive summary

Priority Investment Areas (PIAs) identify areas where funding for biodiversity management can make the greatest difference for biodiversity. PIAs comprise of core areas of vegetation and biodiversity corridors that are important at a state and regional level. These priority areas will assist funding bodies in identifying preferred locations to invest biodiversity funds. They may also provide useful information for land owners and land managers on the areas that have an increased potential of receiving biodiversity management funds.

PIAs are not developed for the purpose of informing land use planning or development applications and are not intended to be used for land use planning purposes. A landowner's right to carry out activities such as agriculture and development is not altered by their property being identified within a PIA.

A consistent and repeatable approach to the identification and mapping of PIAs across NSW is required to ensure equity in the mapping produced. Landowners within the Priority Investment Areas may be preferentially targeted to receive financial benefits if they protect bushland compared to landowners outside these areas. It is important, therefore, that the identification of these priority areas is transparent and follows a consistent approach.

This document provides overarching mapping standards to guide the preparation of PIA mapping. Mapping guidance is provided for core areas, state biodiversity corridors and regional biodiversity corridors. The document sets minimum standards for the quality of both input and output data, whilst allowing for differences in regional data availability and land use pressures. To summarise, the guide requires the mapping of PIAs to:

- Draw on existing data sources where information is available and suitable;
- Be mapped at a property scale;
- Be prepared with local knowledge, validation and consultation.

PIA mapping has not yet been completed for all regions in NSW. In regions where mapping is not available, OEH will continue to base biodiversity investment decisions on available environmental information as is current practice.

1 Introduction

Priority Investment Areas (PIAs) identify areas where funding for biodiversity management can make the greatest difference for biodiversity. The PIAs include:

- **core areas**, large remnants where management will contribute the greatest benefit to the conservation of key state and regional biodiversity values within a region; and
- **state and regional biodiversity corridors**, linear areas which link core areas and play a crucial role in maintaining connections between animal and plant populations that would otherwise be isolated and at greater risk of local extinction.

Government regularly makes funding available to support biodiversity management actions through various grant programs and it is committed to ensuring that these funds are spent in an effective and accountable way. Identifying priority areas for biodiversity investment is one way of ensuring that funds are targeted to areas of greatest strategic benefit, based on an assessment of broad scale biodiversity and stakeholder values.

PIAs will be used in two ways. Firstly, to inform funding bodies of preferred locations to invest biodiversity funds. Secondly, it may provide useful information for land owners and land managers on the areas that have an increased potential of receiving biodiversity management funds. As such, being mapped in a PIA may increase the opportunities for landowners to receive funding to protect their bushland, but participation in any funding program is entirely voluntary.

PIAs are not developed for the purpose of informing land use planning or development applications and are not intended to be used for land use planning purposes. PIAs do not identify all significant vegetation, and therefore it cannot be assumed that areas not identified as a PIA are of lower environmental value.

A landowner's right to carry out activities such as agriculture and development is not altered by their property being identified within a PIA. Areas within PIAs may have environmental values (including areas that also conform to the HEV criteria) that may need to be considered as part of existing statutory planning and development approval processes, and would require an appropriately scaled level of environmental assessment as specified by the relevant planning or consent authority. The identification of land as a PIA does not alter these existing requirements in any way.

PIA mapping is currently not available in all regions in NSW. In regions where mapping is not available OEHL will continue to base biodiversity investment decisions on available environmental information as is current practice.

2 Policy context

Land of biodiversity value in NSW may be categorised into a series of sub-groups for land use and conservation planning purposes (Figure 1). Within NSW, **all areas of native vegetation and habitat** require an assessment of biodiversity impacts under the development application process².

A subset of these areas, termed areas of **High Environmental Value**, contains values of particular significance that are considered for protection in statutory processes. It includes, for instance, land containing threatened ecological communities, habitat for threatened species, important wetlands and protected areas. The term High Environmental Value is equivalent to the terms 'State and regional biodiversity value', 'High Conservation Value' or 'Environmentally Sensitive Areas'.

The Office of Environment and Heritage (OEH) recommends that areas of 'High Environmental Value' be identified and considered for protection through all land use planning processes, including growth strategies and regional and local plans. Further guidance in relation to land use planning is provided in Section 3.3.

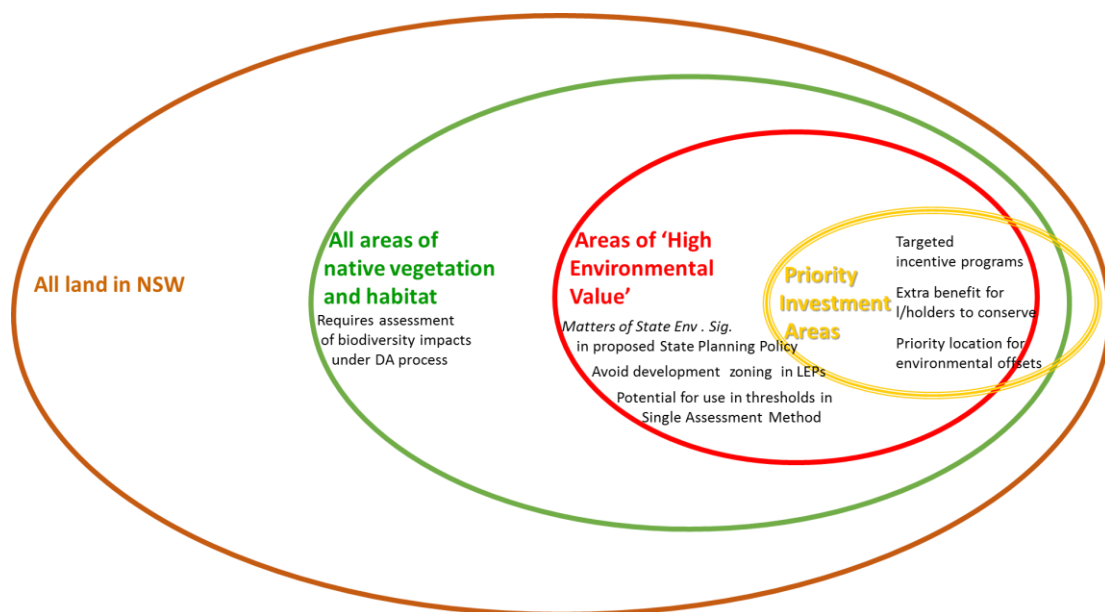


Figure 1: Relationship of Priority Investment Areas to areas of High Environmental Value and other native vegetation¹

Priority investment areas are geographically the smallest subset of environmental priorities. PIAs generally consist of areas of High Environmental Value, however on some occasions may also include areas of native vegetation and habitat or, where cleared land is identified in a PIA, may also include other **land in NSW**. PIAs are recommended by OEH as the priorities for biodiversity funds.

² Note: all areas of native vegetation and habitat, including HEV and PIA, could potentially be cleared without assessment or approval if exempt or excluded, for instance, under the current provisions of Divisions 2, 3 and 4 of Part 3 of the *Native Vegetation Act 2003*.

BYRON SHIRE COUNCIL

STAFF REPORTS - SUSTAINABLE ENVIRONMENT AND ECONOMY

5.3 - ATTACHMENT 2

Priority investment areas are not a 'retention target'. They do not represent the only biodiversity values that should be protected through planning and development processes. As described above, planning and development approvals need to consider retaining and protecting a broader range of biodiversity values wherever feasible, especially those areas of High Environmental Value.

Figure 2 provides an example from Western Sydney of how PIAs, areas of High Environmental Value and areas of native vegetation interact. The figures show that a significant amount of High Environmental Value vegetation and habitat can occur outside the mapped PIAs. This is possible as the PIAs identify only the best available areas for biodiversity investment, not all environmentally sensitive areas.

Figure 2 demonstrates the importance of identifying both PIAs and areas of High Environmental Value. This information can then be used, as required, to provide input into a range of biodiversity investment, land use and conservation planning processes.

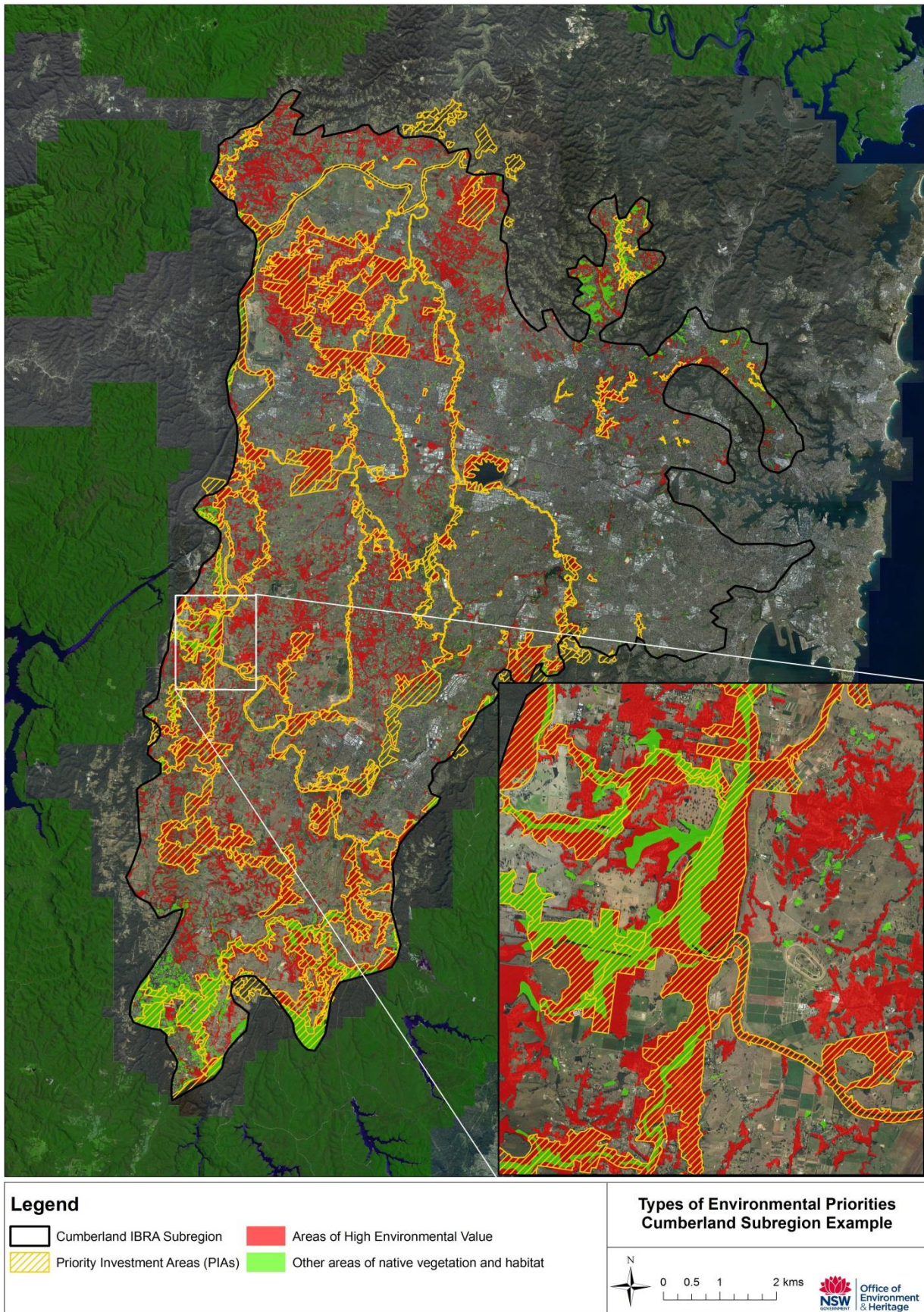


Figure 2: Example of Priority Investment Areas and High Environmental Value mapping in western Sydney

Note: Areas of HEV may be excluded from PIA mapping for a number of reasons, including vegetation condition, vegetation type and existing or planned land use.

3 Use of PIAs

PIA mapping provides a single, accessible map that identifies the best areas for strategic investment in biodiversity management.

3.1 Principal uses

- 5 Federal, state and local governments regularly make funding available to support biodiversity management actions through various grant programs and are commitment to ensuring that these funds are spent in an effective and accountable way. Identifying priority areas for biodiversity investment is one way of ensuring that funds are targeted to areas of greatest strategic benefit, based on an assessment of broad scale biodiversity and stakeholder values. The availability of
- 10 PIA mapping can assist a large number of stakeholders by providing information related to the location of biodiversity priorities.

3.1.1 A decision support tool for grant providers

By investing in the PIAs, fund managers can be confident that they are contributing to strategic conservation outcomes that have a level of broad based stakeholder support.

- 15 PIA mapping can be utilised in different ways depending on the objectives of the grant funding program. For example, a program may target only biodiversity core areas or only corridors within the project area. Programs targeted toward specific features or landscape units can use the PIA mapping as an initial filter to target areas for investigation.

- 20 OEH recommends that program funding be preferentially targeted to land that is within or partially within the PIAs. Methods to achieve this include a weighting (e.g. 10 – 25%) that is applied to grant applications that are located within, or partially within, a PIA. This enables applications outside of the priority areas to also be competitive if they provide other benefits.

- 25 As would be expected, a grant program would need to undertake site based assessments to ensure that the land has the specific features that are targeted for funding.

3.1.2 Guiding expenditure through offset funds

- 30 The rules and governance framework associated with the major projects offset fund are currently being prepared.

- 35 The availability of a central offset fund provides OEH (and any nominated fund manager) an opportunity to achieve strategic environmental outcomes by targeting expenditure to priority locations. The use of an offset fund by proponents may also lead to scrutiny of the fund manager, and the processes followed to obtain and secure biodiversity offsets. An approach that demonstrates that offsets are being obtained using a transparent approach from high priority sites may therefore be beneficial.

- 40 It is proposed that the mapped PIAs be part of the governance framework for the offset fund to demonstrate that offsets are being obtained from strategic locations which provide the greatest benefit to conservation. Under this framework, the offset fund must locate offsets within PIAs as a first preference before other land is considered. Further criteria can be used to prioritise land within the PIAs. For example, like for like, IBRA subregion or credit profile requirements can be identified within the PIAs to target funding towards the values required to offset a particular impact.

The Growth Centres Biodiversity Offset Program is an example of this approach (case study below).

Case Study – Growth Centres Biodiversity Offset Program

In 2007, the western Sydney Growth Centres State Environmental Planning Policy became the first land use plan to receive biodiversity certification in NSW. The certification requires \$397,500,000 to be allocated over a 30 to 40 year development period for biodiversity offsets outside the Growth Centres. The Growth Centres Biodiversity Offset Program receives a portion of this funding annually to acquire new reserves and to establish conservation agreements.

The certification requires that, as a first preference, the Program's funds be invested in the priority areas on the Cumberland Plain that were identified in the 2006 Hawkesbury–Nepean Catchment Action Plan. If no suitable, cost effective lands are available in the areas of first preference, priority areas in the broader Hawkesbury–Nepean catchment can be next considered.

In the PIAs, the selection of land for protection is guided by criteria in the certification. Preference is given to protecting the largest remnants of intact vegetation with the greatest potential for long-term retention of biodiversity values. Factors such as conservation values, the size of the land, the land's landscape context and the cost effectiveness of the investment are considered.

The PIAs have assisted the Program in targeting and prioritising the landowners to approach for expenditure of funds. In the six years of operation, the Program has spent \$17,400,000 and protected 450 hectares of high conservation value land within the first preference priority areas. The PIAs have supported the Program in demonstrating that this funding has been spent in the areas of greatest biodiversity benefit.

3.2 Relationship to other programs

3.2.1 Supporting Local Land Service programs

Local Land Services (LLSs) identify regional and local priorities in their Catchment Action Plans (CAPs) to guide their expenditure of funds. In some circumstances the locations identified in a CAP may differ from those identified in PIA mapping due to differing mapping approaches and objectives.

Depending on the purpose of the funding stream, the LLS is encouraged to consider PIAs in the expenditure of funding. This may include prioritising, as a first preference, funding to areas where the PIAs over-lap with the CAP priorities, before considering investment in other areas.

It is acknowledged that the LLS may have different purposes for funding than those identified by the PIAs, or may be able to achieve positive biodiversity outcomes outside mapped PIAs.

3.2.2 Supporting local government programs

Consultation with councils has identified the benefit of a strategic, regional context of biodiversity priorities to support local biodiversity management planning and prioritisation. The PIAs provide a resource to support the establishment of local priorities by councils.

Councils are able to build on the identified PIAs within their LGA, enhancing the network of core areas and corridors identified with lands of local biodiversity importance in their council area, such as local corridors. PIAs may also be of assistance to local government in the preparation of local

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documents (such as biodiversity strategies) or in the prioritisation of effort in applying for grant funding.

Council can utilise the information to determine if any council owned sites are identified as PIAs, thus increasing the potential to receive funding to manage or conserve these areas. Council may also wish to prioritise PIAs in the expenditure of their own funds, where local and regional priorities align.

3.2.3 Supporting community organisations and projects

PIA mapping provides community groups with information related to biodiversity investment priorities that can assist in the selection of appropriate sites to expend effort. As PIAs have an increased chance to receive funding, and contribute to a wider network, community groups can choose to focus on these areas when considering applications for grant or other funding. This may be particularly relevant to new groups, or existing groups looking for new sites or opportunities.

PIA mapping does not identify all areas of state or regional priorities, nor does it identify areas of local value. Groups working outside of identified PIAs continue to provide a positive benefit for biodiversity within the study area.

3.2.4 Reserve establishment

Addition of land to the National Parks estate occurs in accordance with the principles of the *National Parks and Wildlife Act 1974* and corresponding Government policy namely, the National Parks Establishment Plan (currently under review and publicly exhibited as the 'Directions Statement for National Park Establishment'). Additions in the medium term are prioritised towards better landscape connectivity, improving reserve design and management and areas of cultural importance^[1]. Other long-term conservation themes include poorly reserved ecosystems, wetlands and riparian features, water catchments and areas of geodiversity.

The PIA map is one of many sources of information that support the reserve establishment process. The PIA map provides this support by identifying core areas of poorly reserved ecosystems and State and regionally significant corridors. There are a range of other values that are important for reservation and so not all new reserves or additions to existing reserves will occur in PIAs.

The PIA map is therefore not a 'plan' for building the reserve system. Land identified on the map is not necessarily suitable for reservation. The land may however be suitable for other management opportunities, such as grant funding to land owners.

^[1] Refer to the Directions Statement for National Park Establishment - 2015–2020

3.2.5 Saving our Species Program

The PIAs do not identify all state and regional priority areas. For instance, the [Saving our Species](#) program provides additional priorities for areas of value for threatened species management.

- 5 It is expected that the purpose of the funding will determine which priority areas are best suited for guiding investment. Investment in threatened species management is best prioritised through the Saving our Species Program. Government offset and grant programs which aim to achieve the greatest benefit for vegetation management are best prioritised through the PIA mapping.

3.3 Relationship to strategic planning and development assessment

10 **3.3.1 Strategic planning**

The primary information provided by OEH for considering biodiversity values in land use planning processes is the mapping and criteria for High Environmental Values (HEV). OEH recommends that areas of HEV be identified and considered for protection through all land use planning processes, including growth strategies and regional and local plans.

- 15 Priority investment areas are not suitable for use in land use planning processes in lieu of consideration of the HEV map, or other appropriate landscape-scale assessment of biodiversity values. This is because the PIAs do not identify all areas of high conservation value and also because it includes areas in a range of conditions.

- 20 The PIA map will be publicly available and it is recognised that planning authorities may have an interest in considering the map in land use planning, particularly for the identification of 'corridors' which are not included within the definition of HEV. The following advice will accompany the PIA mapping to ensure that it is not used inappropriately:

- 25
- Land use planning should be informed by the HEV layer provided by OEH. OEH does not warrant the use of the PIA map as being suitable for land use planning purposes in isolation from the HEV map.
 - If a Planning Authority intends to use the PIA mapping, it is required to undertake a process of validation and amendment of the data, including consulting with stakeholders on the accuracy of the mapping and its intended use.
 - 30 • Validation of PIAs is likely to include re-evaluating the boundaries of core areas and corridors to take into account changes in the extent of vegetation since the PIA Map was prepared. It may also include adding or removing areas due to the outcomes of the planning process including responses to public consultation, or alignment of areas with boundaries more consistent with land use planning, such as cadastral boundaries.
 - 35 • If a Planning Authority incorporates biodiversity information into a land use plan through the above process, then responsibility for the interpretation and use of the revised layer rests with the Planning Authority. The revised data is different from OEH's PIA map and being used for a different purpose.

- 40 In some regions of the state, councils have already incorporated corridor mapping into strategic plans, including LEPs. Such regions include the Illawarra and the South Coast. In these

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circumstances OEH recognises that the corridor mapping has been validated by the council in consultation with stakeholders as part of the land use planning process.

If corridors have already been adopted for use by planning authorities, including those prepared consistent with the guidance listed above, then OEH recognises this layer as being developed for planning purposes and may support the council's stated planning uses for the map. OEH may also support the use of this map in regional plans and growth strategies and to inform the use of appropriate provisions in local plans.

3.3.2 Development approval processes

Priority investment areas are not suitable for use in development assessment processes. Assessments must be undertaken in accordance with the statutory requirements applying to the particular proposal. Through the assessment process consideration should be given to protecting all areas of High Environmental Value, as well as areas of local biodiversity value.

A landowner's right to carry out activities such as agriculture and development is not altered by their property being identified within a PIA. Areas within PIAs may have existing environmental values (including areas that also conform to the HEV criteria) that may need to be considered as part of existing statutory planning and development approval processes, and would require an appropriately scaled level of environmental assessment as specified by the relevant planning or consent authority. The identification of land as a PIA does not alter these existing requirements in any way.

OEH recommends that the Biobanking Assessment Methodology and the Framework for Biodiversity Assessment (or any future methodology) be used where appropriate to guide development approval decisions. These methods provide guidance on offset requirements and on areas that cannot be cleared and offset.

4 PIA mapping standards and guidance

4.1 Features included in Priority Investment Areas

Priority Investment Areas identify high priority biodiversity assets ('core areas'), state biodiversity corridors and regional biodiversity corridors. Combined, these features are termed 'Priority Investment Areas'.

4.1.1 Core areas

Core areas of native vegetation and habitat where management will contribute the greatest benefit to the conservation of state and regional biodiversity values within a region.

Areas considered for inclusion as core areas may include a variety of significant biodiversity features, for instance, State and Commonwealth Threatened Ecological Communities (TECs), under-reserved vegetation types, over-cleared vegetation types, vegetation types present in over-cleared landscapes, significant vegetation remnants, significant threatened flora and fauna habitat and large and well connected and configured patches of native vegetation. Core areas may also include other biodiversity values that may be important regionally, such as endemic vegetation communities or habitat for endemic species, important wetlands (Directory of Important Wetlands in Australia (DIWA), State Environmental Planning Policy 14 (SEPP 14)), karst areas, old-growth forest, rainforest, Commonwealth listed Matters of National Environmental Significance (MNES), areas listed in statutory conservation or protection mechanisms (such as State Planning Policies) and significant sites identified by the community.

The core areas will contain a subset of these biodiversity features at locations which are likely to have:

- high long-term viability (due to their patch size, condition, landscape position, connectedness and current/planned future land use), and/or
- other unique or significant features.

Core areas can be identified and mapped in a number of different ways. Where regional data exists on conservation priorities, then this data may be included where it generally meets the mapping guidance provided in this document. Outputs of conservation planning and decision support tools, such as the Biodiversity Forecaster Tool (BFT)³, patch size analysis or fragmentation analysis, may also be used to assist in the identification of core areas. Irrespective of the approach taken to identify core areas, validation is required using local data, experts and stakeholder consultation before data is considered suitable for identification as a core area.

4.1.2 Biodiversity corridors

Biodiversity corridors generally connect two or more areas of native vegetation or are part of an important habitat link, where maintaining vegetation in good condition and improving its connectivity across a larger area is the management aim (Drielsma et al. 20124). While corridors containing good condition vegetation will be preferentially identified, it is important to note that the

³ The Biodiversity Forecasting Tool (BFT) is an OEH conservation planning tool that generates priorities by estimating the relative differences in the persistence of biodiversity across -a study area as a consequence of changing land use or management at different locations (Northern Rivers Regional Biodiversity Management Plan- DECCW 2010).

⁴ Drielsma, MJ, Howling, G and Love, J (2012). NSW Native Vegetation Management Benefits Analyses: Technical report. NSW Office of Environment and Heritage, Sydney.

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biodiversity corridors will also identify areas of 'structural connectivity' (as defined by Doerr 2010⁵). These corridors will include areas where native vegetation is interspersed with areas of non-native vegetation, disconnected linear elements or other isolated stepping stone type features.

- 5 The corridors identified as PIAs include only those of state and regional significance. While corridors of local significance play an important role for connectivity, they are not identified as PIAs and the identification of local corridors remains the responsibility of local government and Local Land Services, through Local Environmental Plans (LEPs) and other mechanisms.

State biodiversity corridors

10

State biodiversity corridors are key linkages of native vegetation identified through state-wide analysis and provide connectivity between IBRA regions and subregions.

- 15 State biodiversity corridors have been identified by a state-wide assessment of connectivity previously completed by OEH through the *NSW Native Vegetation Management (NVM) Benefits* project (Drielsma et al 2012). As a first principle, the identification of state biodiversity corridors will focus on validating the output of the NVM Benefits state significant 'consolidate' (corridor) mapping to allow its use at the property scale.

- 20 Given the state corridors were identified with state level data and information, the intent of the guide is to identify and map these state scale corridors by refining the state scale information with local and regional scale data, such as fine scale vegetation maps, aerial photography and any other suitable data, including local or regional corridor information. The refined, more fine scale information is then validated through consultation with local experts and stakeholders.

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Provided that the above definition for state biodiversity corridors is met, other projects conducted by OEH or other state agencies, local government or non-government bodies may contribute to the identification of state biodiversity corridors. Again, the outputs of these projects would need to be assessed and validated, to allow its use at property scale.

Regional biodiversity corridors

30

Regional biodiversity corridors are key linkages of native vegetation within an IBRA sub-region, between IBRA sub-regions or between significant biodiversity features.

- 35 Regional biodiversity corridors provide intra-regional connectivity, rather than the cross-regional connectivity provided by state biodiversity corridors. As a guide, regional biodiversity corridors will generally provide links between significant biodiversity features, including:

- State biodiversity corridors;
- Mapped core areas;
- 40 • Large native vegetation remnants; or,
- Other significant areas, such as the coastline, NPWS reserves or important Council or Crown reserves.

- 45 Regional biodiversity corridors may include areas of high social value⁶ to local communities, however do not include local corridors, which are defined as linkages that either extend from a

⁵ Doerr, V.A.J., Doerr, E.D., and Davies, M.J. (2010). Does structural connectivity facilitate dispersal of native species in Australia's fragmented terrestrial landscapes? Systematic Review No. 44, Collaboration for Environmental Evidence

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significant biodiversity feature into the surrounding landscape, or that link local landscape features such as reserves, creek lines, gullies, wetlands and ridgelines (adapted from DEC 2004⁷). Similarly regional biodiversity corridors do not include the state biodiversity corridors already defined.

4.2 Mapping standards

- 5 A number of overarching mapping standards are specified below to guide the quality of data produced for the PIA map. The mapping standards define both the quality of input and output data required for the identification and mapping of PIAs. As such, the mapping of PIAs should:
- Draw on existing data sources where information is available and suitable;
 - Be mapped at a property scale;
 - Be prepared with local knowledge, validation and consultation.
- 10

The following mapping standards apply:

1. Priority Investment Areas can be mapped over all land tenures, however investment will be limited to only those tenures able to receive it.

15

 - *Existing offsets are generally not available to receive offset or grant funding, however are often part of state and regional corridors or are part of larger core areas. Whilst these areas will be mapped as PIAs, they will not be available to receive funding and will be identified by a separate spatial data layer in the Biodiversity Investment Spatial Viewer (BISV).*
 - *NPWS Reserves have limited eligibility to receive offset funding. Existing reserves cannot be counted as offset sites because they are already protected. In some cases offsets are transferred from private ownership to national park along with any management funding allocated to that land. Environmental grants may be provided to NPWS reserves for other purposes, for example to restore degraded wetlands. NPWS reserves can be included as PIAs and may be viewed as a separate layer in the BISV.*

20
2. Priority Investment Areas are to be delineated using the best available regional information that is fit for purpose.

25

 - *Best available information that is fit for purpose includes the most comprehensive regional scale vegetation mapping, vegetation classification and land use information at the time of map production.*

30
3. Priority Investment Areas are mapped in vector format, validated using recent aerial photography (less than 10 years old) and mapped at a 'property' scale (~1:10,000 - 1:20,000).

35

 - *Property scale mapping will assist end users determine if their study area is located within a Priority Investment Area.*
4. The boundaries of Priority Investment Areas should generally be aligned with either extant vegetation or cadastral boundaries.
5. Priority Investment Areas are to include predominantly vegetated lands.

40

 - *PIAs may include cleared land incidentally or as areas of potential connectivity value.*

⁶ See 4 under *Regional biodiversity corridors* guide (page 11). Areas of high social value will only be included where they meet the other requirements listed for each item.

⁷ DEC (2004). *Wildlife Corridors- Natural Resource Management Advisory Series: Note 15* (North East New South Wales). NSW Department of Environment and Conservation, Coffs Harbour.

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6. Priority Investment Areas may be considered as both a core area and biodiversity corridor. In these circumstances, land is to be identified as both a core area and biodiversity corridor.
7. Priority Investment Areas that adjoin the boundaries of the study area should be mapped with consideration given to any adjacent Priority Investment Area mapping available.
- 5 Adjacent Priority Investment Areas must be edge matched to ensure consistency between study areas.
8. Priority Investment Areas will only include mapping products that have been either publicly released or, if not publicly released, have been prepared in consultation with stakeholders.
 - 10 • *If the mapping is not publicly released, stakeholders to be consulted may include (for instance) local council staff, Department of Planning and Environment, Office of Strategic Lands, Department of Premier and Cabinet, Local Aboriginal Land Councils, Local Land Services, non-government organisations such as community and environment groups and known local experts.*

4.3 Mapping guide

- 15 The principles contained in Table 1 provide guidance on the type of mapping suitable for identifying and mapping Priority Investment Areas. Mapping guidance has been defined for core areas, state biodiversity corridors and regional biodiversity corridors.

- 20 The guide ensures some level of consistency between regions. The consistent application of this guide is an important issue for equity between landowners. Landowners within the Priority Investment Areas may be preferentially targeted to receive financial benefits if they protect bushland compared to landowners outside these areas. It is important, therefore, that the identification of these priority areas is transparent and follows a consistent approach.

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Table 1: Mapping guide for identifying state and regional Priority Investment Areas

Criteria type	Core areas
Core areas	<p>Criteria: Core areas of native vegetation and habitat where management will contribute the greatest benefit to the conservation of state and regional biodiversity values within a region</p>
	<p>Mapping guide:</p> <ol style="list-style-type: none"> Based on existing mapping OR through regional analysis assisted by conservation planning/decision support tools, such as the Biodiversity Forecasting Tool (BFT), patch size or fragmentation analysis, or alternative approach dependant on the data available within the study area. Core areas are to be mapped by initially defining 'key' state and regional biodiversity values for the study area or region. Key biodiversity values may include <u>significant vegetation types</u> (such as state and Commonwealth threatened ecological communities (TECs), under-reserved vegetation types, over-cleared vegetation types, vegetation types present in over-cleared landscapes and endemic vegetation communities), <u>significant vegetation remnants</u>, <u>significant threatened flora populations and fauna habitat</u>, and <u>other state and regional biodiversity values</u> such as 'matters of national environmental significance' (MNES), important wetlands, habitat for endemic species, karst areas, old-growth forest, rainforest and areas listed by statutory conservation or protection mechanisms. <ul style="list-style-type: none"> <i>The selection of 'key' biodiversity values is to include consideration of potential future offset requirements in the region.</i> The following guidelines are to be considered when mapping core areas: <ol style="list-style-type: none"> For <u>significant vegetation types</u>, a target in the order of 20 - 50% (to be determined regionally) of the existing area of each vegetation type should be used to guide decisions related to the amount of vegetation to be included as a core area. <ul style="list-style-type: none"> <i>The above target is for the sole purpose of prioritising investment and is not a vegetation retention target. The target does not represent the only biodiversity values that warrant protection within a region.</i> <i>The target range listed above is a guide and may require regional variation. Targets applied will be developed in consultation with stakeholders and with OEH over-sight to ensure consistency across subregions.</i> <i>Areas in conservation reserves are counted towards the minimum target for each significant vegetation type.</i> For <u>significant vegetation remnants</u>⁸, core areas may comprise large vegetated areas that are significant in the landscape, including non-threatened vegetation communities or important habitat for non-threatened fauna which rely on large, intact patches. For <u>significant threatened flora populations and fauna habitat</u>, core areas can comprise significant populations of threatened species within the subregion. For <u>other state and regional biodiversity values</u> (such as MNES, important wetlands, habitat for endemic species, karst areas, old-growth forest, rainforest and areas listed by statutory conservation or protection mechanism), no minimum areas apply. In addressing 3, consideration is to be given to; <ol style="list-style-type: none"> areas where biodiversity values are likely to be viable in the long-term. Preference is to be given to vegetation in large, well configured patches, with good condition and connectivity. Consideration should also be given to selecting areas that are representative of the diversity across the region. Areas of high social value as identified by local councils, residents and community groups that can demonstrate ongoing involvement in the biodiversity management of a site. Where an area is considered for inclusion due to social values the area must contain key state or regional biodiversity values and must meet minimum standards for condition, connectivity patch size and viability etc. Core areas are to exclude, where feasible, areas that are likely to be impacted by development <ul style="list-style-type: none"> Areas likely to be impacted by development include land zoned for urban land uses or areas where land use intensification or fragmentation is likely. As a general rule land zoned residential (R1-R4), industrial (IN1-IN4) or business (B1-B7) are to be excluded from PIAs.

⁸ Refer to **Tables 20, 23 and 31** in the Biobanking Assessment Methodology (2014) for guidance on defining patch size class by Mitchell Landscape- see Attachment 1.

Criteria type	State biodiversity corridors
State biodiversity corridors	Criteria: <i>State biodiversity corridors are key linkages of native vegetation identified through state-wide analysis and provide connectivity between IBRA regions and subregions</i>
	Mapping guide: <ol style="list-style-type: none"> 1. State biodiversity corridors are identified in the NVM Benefits map (Drielsma et al, 2012) as the top 10% of benefits from the 'consolidate' layer, or which otherwise meet the above definition AND ARE 2. Validated using regional data and information in order to refine the boundaries mapped at a state scale. <ul style="list-style-type: none"> • <i>It is recognised that the validation process may result in a new corridor route being selected that achieves the same linkage benefit as the corridor mapped at the state scale. This new route will take into account fine scale data that identifies native vegetation cover.</i> 3. State biodiversity corridors are to exclude, where feasible, areas that are likely to be impacted by development <ul style="list-style-type: none"> • <i>Areas likely to be impacted by development include land zoned for urban land uses or areas where land use intensification or fragmentation is likely. As a general rule land zoned residential (R1-R4), industrial (IN1-IN4) or business (B1-B7) are to be excluded from PIAs.</i> 4. Corridors generally have a minimum width of 100m, however it is recognised that in some over-cleared landscapes this may not always be achievable. Similarly, in some landscapes with more extensive areas of contiguous vegetation a far greater width (i.e. several kilometres) may be appropriate. 5. Corridors generally comprise of continuous native vegetation cover, however it is recognised that most corridors will contain some discontinuities for roads or other purposes. As a general guide, discontinuities are to be less than 100m in width, noting that greater discontinuities may be required for some fragmented landscapes or key linkages. 6. In areas of contiguous vegetation, corridors may include entire vegetated areas, or parts of these vegetated areas that have particular vegetation types or landscape features (e.g. escarpment, rainforest or riparian corridors).

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Criteria type	Regional biodiversity corridors
	Criteria: <i>Regional biodiversity corridors are key linkages of native vegetation within an IBRA sub-region, between IBRA sub-regions or between significant biodiversity features</i>
Regional biodiversity corridors	<p>Mapping guide:</p> <ol style="list-style-type: none"> Regional biodiversity corridors provide linkages between significant biodiversity features within an IBRA sub-region, including: <ol style="list-style-type: none"> State biodiversity corridors; Mapped core areas; Large native vegetation remnants⁹; or, Other significant areas, such as the coastline, NPWS Estate or important Council or Crown reserves. Regional biodiversity corridors generally do not extend between several IBRA sub-regions, but may cross between two sub-regions. Regional biodiversity corridors do not include state biodiversity corridors (as defined above) or local corridors. <ul style="list-style-type: none"> <i>Local corridors are linkages of native vegetation that either extend from a significant biodiversity feature into the surrounding landscape, or link local landscape features such as reserves, creek lines, gullies, wetlands and ridgelines (adapted from DEC 2004).</i> Regional biodiversity corridors include consideration of areas of high social value as identified by local councils, residents and community groups that can demonstrate ongoing involvement in the biodiversity management of a site. Where an area is considered for inclusion due to social values the area must meet minimum standards for connectivity under item 1 above. Regional biodiversity corridors are to exclude, where feasible, areas that are likely to be impacted by development: <ul style="list-style-type: none"> <i>Areas likely to be impacted by development include land zoned for urban land uses or areas where land use intensification or fragmentation is likely. As a general rule land zoned residential (R1-R4), industrial (IN1-IN4) or business (B1-B7) are to be excluded from PIAs.</i> Corridors generally have a minimum width of 100m, however it is recognised that in some over-cleared landscapes this may not always be achievable. Similarly, in some landscapes with more extensive areas of contiguous vegetation a far greater width (i.e. several kilometres) may be appropriate. Corridors generally comprise of continuous native vegetation cover, however it is recognised that most corridors will contain some discontinuities for roads or other purposes. As a general guide, discontinuities are to be less than 100m in width, noting that greater discontinuities may be required for some fragmented landscapes or key linkages. In areas of contiguous vegetation, corridors may include entire vegetated areas, or parts of these vegetated areas that have particular vegetation types or landscape features (e.g. escarpment, rainforest or riparian corridors).

⁹ Refer to **Tables 20, 23 and 31** in the Biobanking Assessment Methodology (2014) for guidance on defining patch size class by Mitchell Landscape- see Attachment 1.

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Table 20, 23 and 31 in the Biobanking Assessment Methodology (OEH 2014).

Patch size class	Percent native vegetation cleared in the Mitchell landscape in which most of the biobank site occurs				Patch size score
	<30%	30–70%	>70–90%	>90%	
Extra large	>1000 ha	>200 ha	>100 ha	>50 ha	12
Very large	>500 – 1000 ha	>100 – 200 ha	>50 – 100 ha	>20 – 50 ha	9
Large	>200 – 500 ha	>50 – 100 ha	>20 – 50 ha	>10 – 20 ha	6
Medium	>100 – 200 ha	>20 – 50 ha	>10 – 20 ha	>1 – 10 ha	3
Small	≤100 ha	≤20 ha	≤10 ha	≤1 ha	1
nil	0	0	0	0	0

5
