



Office of
Environment
& Heritage

**DEVELOPING MAPS OF HIGH ENVIRONMENTAL
VALUE FOR STRATEGIC PLANNING -
MAPPING AND GOVERNANCE GUIDE**

Updated 30/11/2015

Recommended citation:

OEH (2015) Developing maps of High Environmental Value for strategic planning - mapping and governance guide (OEH – Environmental Programs Branch (EPB))

Contents

Contents	1
1 Introduction.....	2
2 Development of High Environmental Value Criteria.....	3
3 Use of HEV Maps	3
4 Limitations of HEV Maps.....	4
5 Roles and responsibilities of Regions and EPB in preparing HEV mapping	4
5.1 The role of OEH Regions	4
5.2 The role of Environmental Programs Branch	4
5.3 The role of Science Division.....	5
Appendix 1.....	6
Criteria & definitions of High Environmental Value	6
Criterion One: Areas protected for conservation	6
Criterion Two: Native vegetation of high conservation value	10
Criterion Three: Threatened species and populations	13
Criterion Four: Wetlands, rivers, estuaries & coastal features of high environmental value	15
Criterion Five: Areas of geological significance	17
Appendix 2.....	18
Timelines for RGPs and development of HEV layer (as at May 2015)	18
Appendix 3.....	19
Instructions for analysis of spatial data for Crown Land (Criterion 1.4) - conforming ‘purpose’ values.....	19
Appendix 4.....	22
Karst areas (Criterion 5.1)	22
Appendix 5.....	23
Geological significance (Criterion 5.2)	23
Appendix 6.....	24
Over-cleared landscapes (Criterion 2.2)	24
Appendix 7.....	25
Draft data model.....	25

1 Introduction

Recommendation 15 of the Report of the Independent Biodiversity Legislation Review Panel states that:

Ensure that biodiversity objectives and priorities—including priorities identified in a statewide framework or strategy for conservation or in plans prepared by Local Land Services — are:

- (a) reflected in any new state planning policies prepared under the *Environmental Planning and Assessment Act 1979*
- (b) incorporated in Regional Growth Plans and Subregional Delivery Plans, instead of in separate Regional Conservation Plans.

This recommendation has now been accepted by Government.

The Biodiversity Priority Investment Area – Program Design Group has recommended that:

The biodiversity objectives and priorities referred to in Recommendation 15 of the Panel Report for incorporation into new state planning policies and plans be referred to in the Biodiversity Conservation Bill as “Areas of High Environmental Value” on the basis of the following criteria:

- a) *Areas protected for conservation*
- b) *Native vegetation of high conservation value*
- c) *Key habitat for threatened species and, populations.*
- d) *Wetlands, Rivers, Estuaries and Coastal features of high value*
- e) *Areas of geological significance*

The definition of each criterion is set out in the Mapping Guide (**Appendix 1**)

These areas of High Environmental Value (HEV) contain values of particular significance where development proposals generally receive a higher level of assessment and are given some form of protection under existing legislation, regulation, policy or inter-governmental agreement¹. As such, the proposed criteria do not increase the reach of legislation, but rather achieve a consolidation of current protections into one set of criteria.

High Environmental Value is used:

- instead of ‘high biodiversity value’ as the criteria include features on a range of values including, but not limited to, biodiversity, and
- instead of ‘high conservation value’, because to some readers, this may convey an intention that the goal of Government is to ensure all such areas must be reserved in conservation reserves, which is not the case.

¹ **Note:** all areas of native vegetation and habitat, including HEV, 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.

2 Development of High Environmental Value Criteria

The HEV criteria (**Appendix 1**) were developed through liaison between Regional Operations Group and Policy Division in 2014. They were included in OEH input to DPE for the purpose of developing the State Planning Policy for Environment & Heritage (SPP). The first draft of the SPP provided by DPE to OEH included the HEV criteria.

Priority Investment Area (PIA) mapping, including 'core areas', 'State corridors; and 'Regional corridors' is not included in the criteria for 'High Environmental Value'. Refer to the *Operational Guide and Governance Framework for PIAs*.

3 Use of HEV Maps

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). The progress of this mapping is shown at **Appendix 2**.

The inclusion the HEV criteria in RGPs and the representation of these criteria spatially in an HEV map within an RGP is of fundamental importance to OEH, as it:

- sets out the values of particular significance that are given some level of statutory protection or assessment under existing legislation, regulation, policy or inter-governmental agreement;
- does so 'up-front' so they can be considered in strategic planning, rather than at the end of the planning process (i.e. DA assessment);
- strives to ensure that the number of contentious, protracted Development Applications is minimised, by ensuring development is targeted to areas of lower environmental value.

Within the RGP, OEH should ensure that the HEV criteria and map are reflected in the actions and / or recommendations of the RGP. OEH recommends that areas of 'High Environmental Value' be given consideration in all strategic land use planning processes including growth strategies and regional and local plans. Appropriate recommendations within such strategies and plans would include:

- That planning authorities strive to avoid and minimise impacts from zoning intensification and development on areas of HEV, and consider appropriate offset or other mitigation mechanisms for unavoidable impacts.
- That existing protections for environmental values in areas of HEV be at least maintained, and where possible, enhanced.

As stated above, PIAs are separate from HEV, and include core areas and state and regional biodiversity corridors. 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 are recommended by OEH as the priorities for targeting biodiversity conservation funds. PIAs are also being considered as first preference offset areas for the offsets fund.

If Planning authorities seek to include 'environmental corridors' in their strategic planning, OEH staff should refer to the guidance set out in the *Priority Investment Area operational guide and governance framework* in providing advice to those planning authorities.

4 Limitations of HEV Maps

HEV maps are intended for use at a regional planning level and give an indication of relative biodiversity value at this scale. The maps have been compiled from numerous datasets representing the best available information. Reliability of the underlying data is variable.

While these data may provide an indication of relative biodiversity significance at the local level, users should be aware that these data have limitations including those of scale and positional accuracy. Property level users should make use of finer resolution local data where available. More detailed vegetation mapping and ground-truthing is needed in priority areas to ensure that threatened entities and their habitat are appropriately represented at the local scale.

5 Roles and responsibilities of Regions and EPB in preparing HEV mapping

Some OEH Regions have already developed such a map of High Environmental Value, and EPB Planning Services Unit has been assisting some OEH regions with the development of such a map.

It is important that the roles and responsibilities of each OEH Region and the Environmental Programs Branch (EPB) are clear, to ensure quality, consistency, and timeliness in provision of our advice and HEV mapping to DPE.

5.1 The role of OEH Regions

The role of OEH Regional Planning Teams is to:

- Have responsibility for the regional HEV layer, and to identify and document the areas of HEV for the planning regions for which they are responsible.
- Develop the layer in accordance with the criteria and mapping approach set out in **Appendix 1**, below.
- Where regional variation is relevant, consider the most appropriate methods for incorporating regional data and variation. Ensure such approaches are described.
- To facilitate State-wide consistency in the HEV layer across all RGPs, provide EPB, and other Regions as appropriate, opportunities to review draft HEV mapping and provide comment.
- Ensure approval of final HEV layer by Regional Manager, for provision to DPE as part of the Regional submission on the RGP.
- Provide the final HEV layer, and any explanatory notes regarding regional variation, to EPB for inclusion in a State HEV dataset as appropriate.

5.2 The role of Environmental Programs Branch

It is proposed that the role of EPB Planning Services Unit is to:

- Develop, in consultation with Regions, mapping guidelines for the development of HEV maps (See **Appendix 1**).
- Liaise with DPE centrally to ensure support for OEH approach, and to ensure consistent messages are transmitted to regional DPE offices.
- Provide appropriate technical support to OEH Regional planning teams as appropriate and where requested.

- To provide comment on draft mapping products in a timely manner.
- Maintain a record of all regional HEV layers in a State HEV dataset so that a map of state-wide biodiversity objectives and priorities is available for corporate purposes in relation to the implementation of Recommendation 15, and for provision to external agencies (including DPE) where appropriate.

5.3 The role of Science Division

The Landscape Management Knowledge Strategy sets out a Project titled *Knowledge Support to Legislative Reforms* to address the need of “*Landscape-scale ecological assessments to provide base information for OEH input to all of these reform processes, including: data and maps of features of high environmental significance (as defined by Regional Operation's developed criteria).*”

Discussions have commenced with Science Division regarding implementation of this project in 2015/16. It is anticipated that Science Division will have the key role in providing any updates, amendments, or new mapping of the component data sets relevant to the HEV criteria and definitions, subject to regional expert review (**Appendix 1**). This will provide OEH Regions with the best possible information to fulfil their responsibility to compile the HEV layer, and provide this to planning authorities.

Appendix 1

Criteria & definitions of High Environmental Value

Criterion One: Areas protected for conservation

Definition	Rationale for inclusion	Mapping Guide
1.1. Any areas reserved under the National Parks and Wildlife Act 1974, or acquired under Part 11 of that Act, or identified to be reserved under that Act.	Existing protections. The inclusion of “ <i>or acquired under Part 11 of that Act, or identified to be reserved under that Act</i> ” is consistent with the definition of the E1 zone in the LEP Standard Instrument.	Use OEH corporate data-sets: P:\Corporate\Themes\Tenure\CrownEstate\CrownEstate.gdb Feature Class: NPWS_Estate P:\Corporate\Themes\Tenure\CrownEstate\CrownEstate.gdb Feature Class: NPWS_AcquiredNotGazetted P:\Corporate\Themes\Tenure\CrownEstate\CrownEstate.gdb Feature Class: NPWS_Vested P:\Corporate\Themes\Tenure\CrownEstate\CrownEstate.gdb Feature Class: NPWS_ManagedCrownLand
1.2. Any Wilderness Area declared under section 8 of the Wilderness Act 1987	Existing protections. Almost entirely within National Park estate.	Use OEH corporate data-set: P:\Corporate\Themes\Tenure\Conservation\Conservation.gdb Feature Class: WildernessDeclared
1.3. Any areas reserved as an aquatic reserve under the Fisheries Management Act 1994 or as a marine park under the Marine Parks Act 1997.	Existing protections.	Use OEH corporate data-sets: P:\Corporate\Themes\Tenure\Conservation\Conservation.gdb Feature Class: AquaticReserves P:\Corporate\Themes\Tenure\CrownEstate\CrownEstate.gdb Feature Class: MarineParkBoundaries Note: Ensure Marine Parks and Aquatic Reserves are not removed when data is clipped to Regional boundaries.
1.4. Any areas reserved or dedicated under the Crown Lands Act 1989 for the preservation of flora, fauna, geological formations or for other environmental protection purposes.	Existing protections.	Areas of Crown Land reserved or dedicated under the Crown Lands Act 1989 for the preservation of flora, fauna, geological formations or for other environmental protection purposes is not available from a single layer. Therefore a number of steps are needed to identify the ‘purpose’ of a Crown Reserve and to create the layer for Criterion 1.4. Obtain the Crown Lands layers from P drive (through LYR file P:\Corporate\Layers\Tenure\CrownEstate\CrownLandDerived_SDE.lyr): Feature Dataset: Cadastre.SDE.CrownLand_Derived Feature Class: Cadastre.SDE.Crown_Licence

Definition	Rationale for inclusion	Mapping Guide
		<p>Feature Dataset: Cadastre.SDE.CrownLand_Derived Feature Class: Cadastre.SDE.Crown_Other Feature Dataset: Cadastre.SDE.CrownLand_Derived Feature Class: Cadastre.SDE.Crown_Proclamation Feature Dataset: Cadastre.SDE.CrownLand_Derived Feature Class: Cadastre.SDE.Crown_Reserve Feature Dataset: Cadastre.SDE.CrownLand_Derived Feature Class: Cadastre.SDE.TSR Feature Dataset: Cadastre.SDE.CrownLand_Derived Feature Class: Cadastre.SDE.Crown_Dedication Feature Dataset: Cadastre.SDE.CrownLand_Derived Feature Class: Cadastre.SDE.Crown_EnclosurePermit Feature Dataset: Cadastre.SDE.CrownLand_Derived Feature Class: Cadastre.SDE.Crown_Lease</p> <p>Merge the above layers into one data set.</p> <p>DPI have provided an updated 'purpose' spreadsheet to OEH (\\goulbfp01\group\ROG Share\Planning\6. Spatial Data & e-Planning\Regional Data Audit\State-Wide\CrownLandsData\105669CrownReservesPurpose_FORHEV.xlsx) for use in the HEV mapping process. The spreadsheet is an extract from the Crown Lands Information Database (CLID). This spreadsheet need to be joined (through a table join) to the merged data set using the field 'CrownLRegNo'. All polygons where 'Included in HEV' = 'Y' should be identified as HEV.</p> <p>Note: this process has been completed and the results are stored at \\goulbfp01\group\ROG Share\Planning\6. Spatial Data & e-Planning\Regional Data Audit\State-Wide\GIS_Data\HEV_Statewide.gdb</p> <p>Feature Dataset: HEV_Statewide Feature Class: Criteria_14_Statewide</p> <p>Appendix 3 provides a list of the 'purposes' considered for the layer.</p> <p>TSRs may be included where mapping shows they are not of low conservation value. Use OEH corporate data-sets: P:\Corporate\Themes\Land\Landuse\Landuse.gdb Feature Class: TSR_ConservationValues</p>

Definition	Rationale for inclusion	Mapping Guide
		<p>P:\Corporate\Themes\Tenure\CrownEstate\CrownEstate.gdb Feature Class: CrownReservesOld2008 Select from the data (or apply definition query) by using the following: "purpose" LIKE '%Travelling Stock%' (Note: Case sensitive).</p> <p>P:\Corporate\Themes\Tenure\CrownEstate\CrownEstate.gdb Feature Class: TravellingStockRoutes</p> <p>SDE Feature Dataset: Cadastre.SDE.CrownLand_Derived Feature Class: Cadastre.SDE.Crown_Reserve Select from the data (or apply definition query) by using the following: "CrownAccountReserveType" = 'TSR' (Note: Case sensitive).</p> <p>Union all 4 datasets (all are different though they have much in common). Then remove from the new (unioned) file those areas which have "BIO_CV_1" = 'L' derived from the TSR_ConservationValues data-set (this removes TSRs assessed by Zelnik (2009) as having low conservation value).</p> <p>Reports and metadata for the TSR conservation values project are here: P:\Corporate\Products\Land\Landuse\TSR_ConservationValues</p> <p>State Parks should also be considered for inclusion in Criterion 1.4. Use the OEH corporate data set: P:\Corporate\Themes\Tenure\CrownEstate\CrownEstate.gdb Feature Class: StateParks</p> <p>All State Parks should be checked and areas not considered HEV (i.e. developed areas) removed manually.</p>
<p>1.5. Land dedicated as a flora reserve under Section 16 of the Forestry Act 2012.</p>	<p>Existing protections</p>	<p>Use OEH corporate data-set: P:\Corporate\Themes\Tenure\CrownEstate\CrownEstate.gdb Feature Class: FNSW_FloraReserves</p>
<p>1.6. Private Land with conservation commitments. Includes:</p> <ul style="list-style-type: none"> • Biobanking agreements 	<p>Existing protections, registered on title. Defined and mapped through the Biodiversity Investment Spatial</p>	<p>Use OEH corporate data sets: P:\Corporate\Themes\Tenure\Conservation\Conservation.gdb Feature Class: BiobankingSites P:\Corporate\Themes\Tenure\Conservation\Conservation.gdb Feature Class: RegisteredPropertyAgreements</p>

Definition	Rationale for inclusion	Mapping Guide
<ul style="list-style-type: none"> • Registered Property agreements (with a conservation purpose) • Conservation agreements • Nature Conservation Trust Land Covenants • Indigenous Protected Areas. 	<p>Viewer “Conservation Commitments Layer”.</p>	<p>P:\Corporate\Themes\Tenure\Conservation\Conservation.gdb Feature Class: ConservationAgreements P:\Corporate\Themes\Tenure\Conservation\Conservation.gdb Feature Class: ConservationLandCovenantsNCT P:\Corporate\Themes\Tenure\Conservation\Conservation.gdb Feature Class: IndigenousProtectedAreasOfAustralia</p>

Criterion Two: Native vegetation of high conservation value

Definition	Rationale for inclusion	Mapping Guide
<p>2.1. Over-cleared vegetation types As classified in accordance with the assessment methodology adopted under Part 4 of the Native Vegetation Regulation 2013</p>	<p>Existing prioritisation in NV Act and OEH assessment methodologies² Vegetation types which are >70% cleared from their pre-European extent are already give protections under the Environmental Outcomes Assessment Methodology & Bio-banking Assessment Methodology.</p>	<p>This task requires over-cleared vegetation types (that are in moderate-good condition) to be mapped. Over-cleared vegetation types are those shown in Column M in the Vegetation Types Database to be >70% cleared. Vegetation condition maps may not be available for all regions.</p> <p>Consider the 'best available' vegetation mapping that conforms to the classification of in the Vegetation Types Database, and map the extant vegetation of these over-cleared vegetation types</p> <p>The over-cleared vegetation types database is available from the VIS Classification database: http://www.environment.nsw.gov.au/NSWVCA20PRapp/LoginPR.aspx (must be a registered user).</p> <p>The VIS catalog describes the vegetation mapping available in a region. Local/regional expertise may be needed to determine the most appropriate map for HEV mapping. http://www.environment.nsw.gov.au/research/vegetationinformationsystem.htm</p>
<p>2.2. Vegetation in over-cleared landscapes As classified in accordance with the assessment methodology adopted under Part 4 of the Native Vegetation Regulation 2013</p>	<p>Existing prioritisation in NV Act² Vegetation in landscapes that are >70% cleared are already given protections under the Environmental Outcomes Assessment Methodology.</p>	<p>Vegetation in over-cleared landscapes is any extant vegetation, of any vegetation type (in moderate-good condition) that occurs within an over-cleared landscape.</p> <p>Use OEH corporate data-set to identify the spatial extent of each over-cleared landscape : P:\Corporate\Themes\Land\LandClass\Landclass.gdb Feature Class: MitchellLandscapes</p> <p>And VIS search for over-cleared landscapes See Appendix 6 for further details.</p> <p>Note: Science Division (Vegetation Information Systems Section) are currently finalising a GIS data layer which will supersede the process outlined in Appendix 6. This document will be updated when this layer is available.</p>

² **Note:** all areas of native vegetation and habitat, including HEV, 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.

Definition	Rationale for inclusion	Mapping Guide
<p>2.3 Threatened Ecological Communities Any vulnerable, endangered, or critically endangered ecological community listed under the TSC Act 1995, the FM Act 1994 or the Commonwealth EPBC Act</p>	<p>Existing protections provided for in the TSC Act ² Reflected in all OEH assessment methodologies.</p>	<p>This requires all listed TECs within the region or study area to be listed, and then mapped. An assessment of condition may be appropriate, dependant on the TEC identified, and areas not in moderate-good condition or highly disturbed may be excluded from the mapping.</p> <p>Lists of TECs can be generated from the Threatened Species Profile Database, and also from the Vegetation Types Database.</p> <p>Consider the 'best available' vegetation mapping that can be used for this purpose, by consulting the Vegetation Information System. Consult with a regional vegetation mapping expert to determine the limitations and relative usefulness of available map products.</p> <p>The Threatened Species Profile Database can be found here: http://www.environment.nsw.gov.au/threatenedspecies/</p> <p>The vegetation types database is available from the VIS Classification database: http://www.environment.nsw.gov.au/NSWVCA20PRapp/LoginPR.aspx (must be a registered user).</p> <p>The VIS catalog describes the vegetation mapping available in a region. Local/regional expertise may be needed to determine the most appropriate map for HEV mapping. http://www.environment.nsw.gov.au/research/vegetationinformationsystem.htm</p> <p><u>Protected matters search tool (for EPBC critically endangered and endangered communities) is available from:</u> http://www.environment.gov.au/epbc/pmst/</p> <p>The EPBC Species PRofile And Threats (SPRAT) database can be found here: http://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl</p>
<p>2.4. Old Growth Forest (OGF) As defined in accordance with a Code Of Practice under Part 5 of the Native Vegetation Regulation 2013</p>	<p>Michael Hood (EPA Forestry Reg) has advised: Old Growth Forest (OGF) is protected under existing regulation, and inter-governmental agreement with the Commonwealth. In</p>	<p>This requires the mapping Old Growth Forest using OEH corporate data-sets: P:\Corporate\Themes\Vegetation\Extent\Extent.gdb Feature Class: OldGrowthPNF_VIS4062</p> <p>However, there are areas where a detailed assessment of old growth forest and/or rainforest has been undertaken and are listed in the Private Native Forest Old Growth and Rainforest Assessment Public Register (see</p>

Definition	Rationale for inclusion	Mapping Guide
	<p>the development of a 'prioritisation criteria' and to maintain policy consistency to ensure that areas prohibited from 'logging' are similarly protected from avoidable 'clearing', OGF and RF should be included.</p>	<p>http://www.epa.nsw.gov.au/pnf/oldgrthfrstassesspubreg.htm). In such areas the more detailed and up-to-date data should be used.</p> <p>Contact should be made with Nick Westman or Ian Bernard to confirm the most up-to-date information has been obtained. The most recent data provided from Nick Westman or Ian Bernard is located at \\goulbfp01\group\ROG\Share\Planning\6. Spatial Data & e-Planning\Regional Data Audit\State-Wide\GIS_Data\HEV_Statewide.gdb</p> <p>Feature Dataset: HEV_Statewide Feature Class: Criteria_24_Statewide</p>
<p>2.5. Rainforest</p>	<p>As above.</p>	<p>The mapping of rainforest needs to be consistent with the definition of RF used in Forestry Regulation Use OEH corporate data-sets: P:\Corporate\Themes\Vegetation\Extent\Extent.gdb Feature Class: RainforestPNF_VIS4066</p> <p>Except in those areas where a detailed assessment of old growth forest and/or rainforest has been undertaken and are listed in the Private Native Forest Old Growth and Rainforest Assessment Public Register (see http://www.epa.nsw.gov.au/pnf/oldgrthfrstassesspubreg.htm). In such areas the more detailed and up-to-date data should be used.</p> <p>Contact should be made with Nick Westman or Ian Bernard to confirm the most up-to-date information has been obtained. The most recent data provided from Nick Westman or Ian Bernard is located at \\goulbfp01\group\ROG\Share\Planning\6. Spatial Data & e-Planning\Regional Data Audit\State-Wide\GIS_Data\HEV_Statewide.gdb</p> <p>Feature Dataset: HEV_Statewide Feature Class: Criteria_25_Statewide</p>
<p>2.6. Littoral rainforest including 100 m buffer As defined in SEPP 26</p>	<p>Existing protection. However, Littoral Rainforest would be included in EEC and Rainforest criteria, but not with the existing 100 m buffer afforded by SEPP 26.</p>	<p>Use OEH corporate data-sets: P:\Corporate\Themes\Admin\Statutory\Statutory.gdb Feature Class: SEPP26_LittoralRainforest</p> <p>Note: Buffer data by 100 metres.</p>

Criterion Three: Threatened species and populations

Definition	Rationale for inclusion	Mapping Guide
<p>3.1 Critical Habitat Any critical habitat declared under Part 3 of the Threatened Species Conservation Act 1995 or Part 7A of the Fisheries Management Act 1994</p>	<p>Existing protection in TSC Act. Would include, or be subsumed by “<i>Areas of special biodiversity importance</i>” as per recommendation 25 of the Panel report.</p>	<p>Use OEH corporate data-set: P:\Corporate\Themes\Biodiversity\Habitat\Habitat.gdb Feature Class: CriticalHabitat Note: Only the Little Penguin population in Sydney's North Harbour critical habitat is not part of the NPWS Estate.</p>
<p>3.2 Key habitat for threatened species 'Key habitats' for any vulnerable, endangered or critically endangered species listed under Schedule 1, 1A or 2 of the Threatened Species Conservation Act 1995 and Schedule 4, 4A and 5 of the Fisheries Management Act 1994.</p>	<p>Existing protection in TSC Act². For the purpose for which the High Environmental Value criteria may be used, including the purpose of a prioritisation set out in the Panel's report, the inclusion of 'all threatened species habitat' is likely to be too broad, as it could be interpreted to include all extant vegetation. A prioritisation criteria will necessarily need to be more targeted, and for this reason the term 'key habitat' is used. Internal guidance will be developed to enable the delineation of 'key habitat'.</p>	<p>For the purpose of constructing an HEV layer, 'Key habitat for threatened species' needs to be considered only in areas that are not identified by any other criteria or definition.</p> <p>Generally, significant areas of 'key habitat' would be expected to be identified in applying the definition of Criteria One and Two.</p> <p>Regional teams have a key role in identifying 'Key Habitats for Threatened Species' that may be additional to that identified in Criteria One and Two.</p> <p>Note that given HEV is a prioritisation of environmental assets, not all extant vegetation can be included in this prioritisation. Example of areas that could be further included as 'Key Habitat' in addition to areas identified in Criteria One and Two, could include:</p> <ul style="list-style-type: none"> • Key breeding habitats with known breeding occurrence • Core Koala Habitat • Key habitats for migratory species. • Habitat for known populations of site-managed species • Areas identified as corridors in PIA mapping <p>Generally, <i>Save Our Species</i> polygons (or maps of a species range) should not be wholly included in the construction of the HEV layer, as these will include areas that are clearly not 'key habitats'. Using these polygons to identify areas in which key habitats can be delineated is appropriate.</p>

Definition	Rationale for inclusion	Mapping Guide
<p>3.3 Endangered populations and their habitat Listed under Schedule 1 of the Threatened Species Conservation Act 1995 and Schedule 4 of the Fisheries Management Act 1994.</p>	<p>Existing protection in TSC Act².</p>	<p>A list of threatened populations for a particular region or study area should be generated, using the Threatened Species Profile Database.</p> <p>Search on the term 'populations'. This will provide information about the list of vegetation types associated with the endangered population.</p> <p>Generally, all extant vegetation that conforms to the vegetation types indicated in the database, within the range or area of occurrence of the population, should be included in the mapping. Land that does not represent habitat for the population within the population's range should be excluded.</p> <p>The Threatened Species Profile Database can be found here: http://www.environment.nsw.gov.au/threatenedspecies/</p>

Criterion Four: Wetlands, rivers, estuaries & coastal features of high environmental value

Definition	Rationale for inclusion	Mapping Guide
<p>4.1 Coastal wetlands As defined in SEPP 14 + 50 m buffer</p>	<p>Existing protection (SEPP 14) Reflected in OEH assessment methodologies</p>	<p>Use OEH corporate data-set: P:\Corporate\Themes\Admin\Statutory\Statutory.gdb Feature Class: SEPP14_Wetlands Pursuant to Appendix 2 of the Framework for Biodiversity Assessment (see http://www.environment.nsw.gov.au/resources/biodiversity/140675fba.pdf), the SEPP 14 wetlands should be buffered by 50 metres.</p>
<p>4.2 Nationally important wetlands Listed in the Directory of Important Wetlands in NSW + 50 m buffer</p>	<p>Existing prioritisation in OEH assessment methodologies</p>	<p>Use OEH corporate data-set: P:\Corporate\Themes\Biodiversity\Wetlands\Wetlands.gdb Feature Class: WetlandsImportant Note: This is a national data-set. Only use NSW data. And supplement with the internationally import Ramsar Wetlands OEH corporate data-set: P:\Corporate\Themes\Biodiversity\Wetlands\Wetlands.gdb Feature Class: WetlandsRamsar Pursuant to Appendix 2 of the Framework for Biodiversity Assessment (see http://www.environment.nsw.gov.au/resources/biodiversity/140675fba.pdf), the nationally important wetlands should be buffered by 50 metres.</p>
<p>4.3 Riparian vegetation of rivers 3rd order streams and above + buffer consistent with FBA</p>	<p>Existing prioritisation in OEH assessment methodologies (strategic location under BBAM 2014)</p>	<p>Use OEH corporate data-set (SDE): Feature Dataset: CorpDB.SDE.Drainage Feature Class: CorpDB.SDE.StrahlerStreamOrder Select from the data (or apply definition query) by using the following: "STRORDER" = 3 (Note: Case sensitive). Then pursuant to Appendix 2 of the Framework for Biodiversity Assessment (see http://www.environment.nsw.gov.au/resources/biodiversity/140675fba.pdf), buffer the selection by 30 metres (giving the file an appropriate name). Select from the data (or apply definition query) by using the following: "STRORDER" = 4 Or "STRORDER" = 5 (Note: Case sensitive). Then pursuant to Appendix 2 of the Framework for Biodiversity Assessment (see http://www.environment.nsw.gov.au/resources/biodiversity/140675fba.pdf), buffer the selection by 40 metres (giving the file an appropriate name).</p>

Definition	Rationale for inclusion	Mapping Guide
		<p>Then select from the data (or apply definition query) by using the following: "STRORDER" >= 6 (Note: Case sensitive). Then pursuant to Appendix 2 of the Framework for Biodiversity Assessment, buffer the selection by 50 metres (giving the file an appropriate name).</p> <p>You then need to Union these two buffer files. Then use this combined buffer file to clip the best extant vegetation mapping for you area of interest to identify the areas of riparian vegetation of HEV.</p>
<p>4.4 Vulnerable Estuaries and ICOLLs Classified by Science Division as 'vulnerable' or requiring 'significant protection + 50m buffer</p>	<p>Existing prioritisation criteria in regional plans Protected in Coastal Management Plans?</p>	<p>OEH Science Division can provide a list of these vulnerable estuaries and ICOLLs for each Region. Contact Jocelyn Dela-Cruz in the first instance.</p> <p>The map should include a buffer of 50 metres from High Water-mark</p>

Criterion Five: Areas of geological significance

Definition	Rationale for inclusion	Mapping Guide
<p>5.1 Karst landscapes As defined in OEH (2011) Guide to NSW Karst and Caves OEH, Sydney</p>	<p>Existing prioritisation criteria in some regional plans</p>	<p>Karst landscapes, as defined in OEH (2011) Guide to NSW Karst and Caves, are discussed in Appendix 4. Use OEH corporate data-set: P:\Corporate\Themes\Geology\Structural\Structural.gdb Feature Class: GeologicallySignificantAreas Select from the data (or apply definition query) by using the following: "LABEL" = 'Wee Jasper' (Note: Case sensitive). And supplement with P:\Corporate\Themes\Tenure\CrownEstate\CrownEstate.gdb Feature Class: CrownReservesOld2008 Select from the data (or apply definition query) by using the following: "purpose" LIKE '%Cave%' AND (NOT ("crownlreg" = 'R54163' OR "crownlreg" = 'R91231')) (Note: Case sensitive). This will identify Crown Reserves dedicated to the preservation of karst caves. Note: All these 'cave reserves' are a subset of 1.4 above.</p>
<p>5.2 Sites of geological significance included in State Heritage Register or Heritage Inventory</p>	<p>Existing protections</p>	<p>Search the OEH corporate State Heritage Register here: http://www.environment.nsw.gov.au/heritageapp/heritagesearch.aspx For Heritage category, select "Geological site or area"; then Search. The results will fall under two categories: "Items listed under the NSW Heritage Act" and "Items listed by Local Government and State Agencies". For Items listed under the NSW Heritage Act, use OEH corporate data-set: P:\Corporate\Themes\Admin\Statutory\Statutory.gdb Feature Class: StateHeritageRegisterCurtilage You will need to select the items listed in the Heritage Register search result (above) (or apply definition query) by using the following (or similar): "ITEMNAME" IN ('Bombo Headland Quarry Geological Site', 'Seaham Quarry', 'Escort Rock', 'The Captain Thunderbolt Sites - Thunderbolt's Rock') (Note: Case sensitive). For Items listed by Local Government and State Agencies, use OEH corporate data-set: P:\Corporate\Themes\Cultural\Historic\Historic.gdb Feature Class: NationalEstateRegisterAust You will need to select the items listed in the Heritage Register search result (above) (or apply definition query) by using the following (or similar): "NAME" IN ('Badgerys Lookout View', 'Bass Point Area', 'Bow Wow Creek Gorge', 'Enfield Brickpits', 'Melville Point', 'Myrtle Beach - Wasp Head Coastal Area', 'Narangarie Quarry Geological Site', 'Oberon') (Note: Case sensitive). Be aware that some items are not included in 'NationalEstateRegisterAust' (see Appendix 5 for details).</p>

Appendix 2

Timelines for RGPs and development of HEV layer (as at May 2015)

Regional Growth Plan	Final / Draft	Cabinet approval	Exhibition	Progress of HEV layer
Illawarra	Final	May	(no exhibition – publication at end May)	Complete
Hunter North Coast Murray-Murrumbidgee	Draft	June	July	Near complete Near complete Near complete
6 x Sydney Sub-Regional Delivery Plans	Draft	July	August	Complete
Far West South-East Central Coast Orana – Central West New England – North West	Draft	August	September	On-going Near complete Near complete Near complete Near complete

Appendix 3

Instructions for analysis of spatial data for Crown Land (Criterion 1.4) - conforming 'purpose' values

- Access-Conservation Of Native Flora And Fauna
- Access-Environmental Protection
- Access-Environmental Protection-Public Recreation
- Access-Preservation Of Fauna-Preservation Of Native Flora-Public Recreation
- Access-Preservation Of Flora And Fauna
- Access-Preservation Of Fossils
- Access-Preservation Of Native Flora
- Access-Preservation Of Native Flora And Fauna
- Access-Preservation Of Native Flora-Public Recreation
- Access-Preservation Of Timber
- Access-Preservation Of Trees
- Camping-Preservation Of Native Flora-Public Recreation
- Children'S Playground-Preservation Of Native Flora
- Coastal Environmental Protection-Public Recreation
- Community Purposes-Environmental Protection
- Community Purposes-Environmental Protection-Government Purposes-Heritage Purposes-Public Recreation
- Conservation Of Aboriginal Heritage-Preservation Of Fauna-Preservation Of Native Flora-Public Recreation
- Conservation Of Native Flora-Fauna
- Crossing-Preservation Of Native Flora
- Drainage-Environmental Protection-Public Recreation
- Drainage-Preservation Of Fauna-Preservation Of Native Flora
- Environmental Protection
- Environmental Protection-Future Public Requirements
- Environmental Protection-Future Public Requirements-Public Recreation-Rural Services
- Environmental Protection-Future Public Requirements-Public Recreation-Rural Services-Tourist Facilities And Services
- Environmental Protection-Government Purposes-Rural Services
- Environmental Protection-Preservation Of Scenery-Public Recreation
- Environmental Protection-Public Recreation
- Environmental Protection-Public Recreation-Rural Services
- Environmental Protection-Public Recreation-Tourist Facilities And Services
- Environmental Protection-Rural Services
- Fauna-Preservation Of Native Flora
- Future Public Requirements-Preservation Of Native Birds-Preservation Of Native Fauna-Preservation Of Native Flora
- Future Public Requirements-Preservation Of Trees
- Native Birds-Preservation Of Fauna
- Native Fauna-Preservation Of Native Flora
- Native Fauna-Preservation Of Native Flora-Public Recreation
- Nature Conservation

- Other Public Purposes-Preservation Of Timber-Water Supply
- Preservation And Growth Of Native Flora
- Preservation And Growth Of Timber
- Preservation Of Aboriginal Cultural Heritage-Preservation Of Flora And Fauna-Public Recreation
- Preservation Of Aboriginal Relics-Preservation Of Fauna-Preservation Of Native Flora-Public Recreation
- Preservation Of Aboriginal Relics-Preservation Of Trees
- Preservation Of Caves
- Preservation Of Caves-Preservation Of Native Flora And Fauna
- Preservation Of Fauna
- Preservation Of Fauna-Preservation Of Native Birds-Preservation Of Native Flora-Preservation Of Trees
- Preservation Of Fauna-Preservation Of Native Flora
- Preservation Of Fauna-Preservation Of Native Flora-Public Recreation
- Preservation Of Fauna-Preservation Of Native Flora-Public Recreation-Refuge In Time Of Flood-Water Supply
- Preservation Of Fauna-Public Recreation
- Preservation Of Native Birds
- Preservation Of Native Birds-Preservation Of Native Flora-Public Recreation
- Preservation Of Native Fauna-Preservation Of Native Flora
- Preservation Of Native Fauna-Preservation Of Native Flora-Public Recreation
- Preservation Of Native Flora
- Preservation Of Native Flora And Fauna
- Preservation Of Native Flora And Fauna-Preservation Of Timber
- Preservation Of Native Flora And Fauna-Preservation Of Trees
- Preservation Of Native Flora And Fauna-Public Recreation
- Preservation Of Native Flora And Fauna-Public Recreation-Resting Place
- Preservation Of Native Flora-Preservation Of Native Flora And Fauna-Public Recreation
- Preservation Of Native Flora-Preservation Of Scenery
- Preservation Of Native Flora-Preservation Of Trees
- Preservation Of Native Flora-Protection From Sand Drift-Public Recreation
- Preservation Of Native Flora-Public Baths-Public Recreation
- Preservation Of Native Flora-Public Recreation
- Preservation Of Native Flora-Public Recreation-Reservoir
- Preservation Of Native Flora-Water Supply
- Preservation Of Timber
- Preservation Of Timber-Public Recreation
- Preservation Of Trees
- Preservation Of Trees-Public Recreation
- Preservation Of Trees-Recreation
- Preservation Of Trees-Rest Park
- Preservation Of Trees-Resting Place
- Preservation Of Trees-Soil Conservation
- Promotion Of The Study And Conservation Of Native Flora And Fauna
- Promotion Of The Study And Preservation Of Native Flora
- Promotion Of The Study And The Preservation Of Native Flora And Fauna

- Promotion Of The Study And The Preservation Of Native Flora And Fauna-Public Recreation
- Promotion Of The Study And The Preservation Of Native Flora And Fauna-Public School Purposes
- Protection From Sand Drift
- Protection From Sand Drift-Public Recreation
- Protection Of Fossil Trees
- Public Access To The Foreshore And The Protection Of Scenic Amenity And Ecological Values
- Public Recreation And Coastal Environmental Protection
- Public Recreation And Coastal Environmental Protection-Tourist Facilities And Services
- Public Recreation And Coastal Environmental Protection-Urban Services
- Soil Conservation

Appendix 4

Karst areas (Criterion 5.1)

Abercrombie Karst Conservation Reserve- Included in the NPWS Estate.

Ashford Caves- Included in the NPWS Estate.

Borenore Karst Conservation Reserve- Included in the NPWS Estate.

Bungonia State Conservation Area- Included in the NPWS Estate.

Cooleman Plain Karst- Included in the NPWS Estate.

Deua Karst- Included in the NPWS Estate.

Jenolan Karst Conservation Reserve- Included in the NPWS Estate.

Kanangra-Boyd Karst- Included in the NPWS Estate.

Macleay Karst Arc- Partly included in the NPWS Estate.

Timor Caves

Partly included in areas reserved or dedicated under the Crown Lands Act 1989 for the preservation of flora, fauna, and geological formations, or for other environmental protection purposes.

Wee Jasper Caves

Partly included in the NPWS Estate,

Partly included in areas reserved or dedicated under the Crown Lands Act 1989 for the preservation of flora, fauna, and geological formations, or for other environmental protection purposes.

Partly included in geologically significant areas.

Wellington Caves Reserve

Included in areas reserved or dedicated under the Crown Lands Act 1989 for the preservation of flora, fauna, and geological formations, or for other environmental protection purposes.

Wombeyan Karst Conservation Reserve- Included in the NPWS Estate

Yarrangobilly Caves- Included in the NPWS Estate

Appendix 5

Geological significance (Criterion 5.2)

The following areas (items) are not included in the OEH corporate data-set 'NationalEstateRegisterAust':

Iluka Bluff Sea Stack

This area is within Bundjalung National Park.

Mt Gibraltar

Boundaries for this area have been created by Wingecarribee Shire Council and are available from South Branch, Regional Operations Group, Wollongong.

Mt Jellore

This area is within Nattai National Park.

Rock Faults

For boundary of this area contact Pittwater Council.

Sidmouth Valley

For boundary of this area contact Oberon Council.

Wallaby Rocks, Lower Wallaby Rocks and Great Falls

For boundary of this area contact Uralla Shire Council.

Appendix 6

Over-cleared landscapes (Criterion 2.2)

In over-cleared landscapes, all native vegetation is of high environmental value (HEV). The identification of this vegetation involved several steps.

Identify the over-cleared Mitchell Landscapes using OEH corporate data-set:

P:\Corporate\Themes\Land\LandClass\Landclass.gdb

Feature Class: MitchellLandscapes

and VIS search for over-cleared landscapes (instructions here:

<http://www.environment.nsw.gov.au/resources/bionet/150022-quick-guide-overcleared-landscapes.pdf>). The VIS search result should be exported as a CSV file and joined to the Mitchell

Landscapes spatial data. However the CSV file, as exported, cannot be imported into ArcGIS. You can delete all fields except "Landscape" and 'OCL Percentage Cleared Estimate (open file in MS Excel)', to facilitate the import. But before you do this there are some amendments that need to be made to the CSV file (again use MS Excel) as not all the landscape names in the spatial data exactly match the names in the VIS generated CSV file.

In the CSV file change:

1. Castlereagh Swamps **to** Castlereagh Swamps, Lagoons and Dunes
2. Cowal Lakes **to** Cowal Lakes, Swamps and Lunettes
3. Lachlan Lakes **to** Lachlan Lakes, Swamps and Lunettes
4. Mootwingee - Wonaminta Salt Lakes and Plains **to** Mootwingee - Wonaminta Salt Lakes and Playas
5. Murray Lakes **to** Murray Lakes, Swamps and Lunettes
6. Murrumbidgee - Tarcutta Lakes **to** Murrumbidgee - Tarcutta Lakes, Swamps and Lunettes
7. Murrumbidgee Lakes **to** Murrumbidgee Lakes, Swamps and Lunettes

Be mindful that the join is case sensitive and the changes need to be exactly as indicated.

After you have made these changes, add the CSV file to ArcGIS, then join to Mitchell Landscapes. Export the data to save the join (giving the new file a meaningful name such as MitchellLandscapesClearedPercentage).

You will find that two Mitchell Landscapes (Ashfield Plains, and Georges River Alluvial Plain) were not represented in VIS CSV file but they are in the spatial data. After the join, these Landscapes will have a percentage cleared (OCL_Percent) = 0, which is incorrect. Both of these Landscapes have been extensively cleared (in excess of 95%), so it is suggested that you change their OCL_Percent to 95 using the Field Calculator.

To identify the over-cleared Mitchell Landscapes, select from the data (or apply definition query) using the following "OCL_Percent" > 70.

You can then use this selection (or definition query) to clip the best available extant vegetation mapping, for your area of interest, to identify the areas of native vegetation with HEV, in these over-cleared landscapes. **Note:** Science Division (Native Vegetation Information Systems Section) are currently finalising a GIS data layer which will supersede the process outlined in this appendix.

Appendix 7

Draft data model

Provided below is a draft data model for the mapping of HEV. The model has been prepared to allow the generation of consistent HEV data between regions, and will result in the creation of three data 'levels', with each level containing more information than the previous level. The three levels will include:

- Level 1- simple attribution identifying the polygon as HEV, but with no reason provided as to why the polygon was identified as HEV;
- Level 2 – more complex attribution with each polygon identified with its 'parent' criterion (i.e Criterion 1, Criterion 2, Criterion 3 etc). That is, each polygon will contain attributes based on which parent criterion resulted in it's inclusion in the layer. The attributes for the Level 2 layer will be as follows:
 - **Field name:** Criterion1 **Attribute text:** *Areas protected for conservation*
 - **Field name:** Criterion2 **Attribute text:** *Native vegetation of high conservation value*
 - **Field name:** Criterion3 **Attribute text:** *Threatened species and populations*
 - **Field name:** Criterion4 **Attribute text:** *Wetlands, rivers, estuaries & coastal features of high environmental value*
 - **Field name:** Criterion5 **Attribute text:** *Areas of geological significance*
- Level 3 – The most complex layer where the each criterion and subsequent information is provided for each polygon. All fields described below in the data model will be included.

This model is provided as a guide only and is not intended to create additional work. Where individual input layers have already been prepared and cannot be changed then please provide as currently held. EPB and the Region can work together in these cases to update the structure of the data after the draft is prepared and sent to DPE, noting that a 'binary' HEV map will be sent to DPE without the detailed information below.

Criterion	Suggested feature class or shapefile name	Suggested fields and associated details			
		Field name	Field type	Field length	Notes
1.1. Any areas reserved under the National Parks and Wildlife Act 1974, or acquired under Part 11 of that Act, or identified to be reserved under that Act.	Criteria11	CRITERIA_11	String	50	Fill in source data set, either: <ul style="list-style-type: none"> • NPWS Estate • Acquired not gazetted • NPWS Vested • NPWS Managed Crown Land
		NAME_SHORT	String	30	Field from source data sets
1.2. Any Wilderness Area declared under section 8 of the Wilderness Act 1987	Criteria12	CRITERIA_12	String	50	Input- 'Declared wilderness'
		DECNAME	String	30	Field from source data set

Criterion	Suggested feature class or shapefile name	Suggested fields and associated details			
		Field name	Field type	Field length	Notes
1.3. Any areas reserved as an aquatic reserve under the Fisheries Management Act 1994 or as a marine park under the Marine Parks Act 1997.	Criteria13	CRITERIA_13	String	50	Fill in source data set, either: <ul style="list-style-type: none"> • Aquatic Reserve • Marine Park
		Name	String	254	Field from source data set
1.4. Any areas reserved or dedicated under the Crown Lands Act 1989 for the preservation of flora, fauna, geological formations or for other environmental protection purposes.	Criteria14	CRITERIA_14	String	50	Input- 'Crown Reserves'
		CLDETAILS	String	250	Input either: <ul style="list-style-type: none"> • The purpose provided by CLID • "TSR" • "State Park"
1.5. Land dedicated as a flora reserve under Section 16 of the Forestry Act 2012.	Criteria15	CRITERIA_15	String	50	Input- 'FNSW Flora Reserve'
		FRNAME	String	254	Field from source data set
1.6. Private Land with conservation commitments. Includes: <ul style="list-style-type: none"> • Biobanking agreements • Registered Property agreements (with a conservation purpose) • Conservation agreements • Nature Conservation Trust Land Covenants • Indigenous Protected Areas. 	Criteria16	CRITERIA_16	String	50	Fill in source data set, either: <ul style="list-style-type: none"> • Biobanking agreements • Registered Property agreements • Conservation agreements • NCT Land Covenants • Indigenous Protected Areas
		Agree_Name	String	150	Name of agreement/protected area from source data sets (if available) otherwise N/A
2.1. Over-cleared vegetation types As classified in accordance with the assessment methodology adopted under Part 4 of the	Criteria21	CRITERIA_21	String	50	Input- 'Over-cleared vegetation type'
		OC_Veg_Type	String	250	Name of over-cleared vegetation type (ideally PCT name, however if not available then alternative)

Criterion	Suggested feature class or shapefile name	Suggested fields and associated details			
		Field name	Field type	Field length	Notes
Native Vegetation Regulation 2013		PCT_ID	Short integer	N/A	PCT ID
		BM_Veg_Type	String	250	Equivalent Biometric vegetation type name (if available)
2.2. Vegetation in over-cleared landscapes As classified in accordance with the assessment methodology adopted under Part 4 of the Native Vegetation Regulation 2013	Criteria22	CRITERIA_22	String	50	Input- 'Vegetation in over-cleared landscapes'
		Lscape_Name	String	250	Name of over-cleared landscape
2.3 Threatened Ecological Communities Any vulnerable, endangered, or critically endangered ecological community listed under the TSC Act 1995 or the FM Act 1994	Criteria23	CRITERIA_23	String	50	Input- 'Threatened Ecological Communities'
		TSC_TEC	String	250	Name of NSW TSC Act TEC (abbreviated if required)
		EPBC_TEC	String	250	Name of EPBC Act TEC (abbreviated if required)
		PCT_ID	Short integer	N/A	PCT ID
2.4. Old Growth Forest (OGF) As defined in accordance with a Code Of Practice under Part 5 of the Native Vegetation Regulation 2013	Criteria24	CRITERIA_24	String	50	Input- 'Old Growth'
		Type	String	50	Input: 'CRAFTI' 'Reviewed'
2.5. Rainforest	Criteria25	CRITERIA_25	String	50	Input- 'Rainforest'
		Type	String	50	Input: 'CRAFTI' 'Reviewed'
2.6. Littoral rainforest including 100 m buffer As defined in SEPP 26	Criteria26	CRITERIA_26	String	50	Input- 'SEPP 26- Littoral Rainforest'
		TAG	String	32	Field from source data set
3.1 Critical Habitat	Criteria31	CRITERIA_31	String	50	Input- 'Critical Habitat'

Criterion	Suggested feature class or shapefile name	Suggested fields and associated details			
		Field name	Field type	Field length	Notes
Any critical habitat declared under Part 3 of the Threatened Species Conservation Act 1995 or Part 7A of the Fisheries Management Act 1994		FULL_NAME	String	150	Field from source data set
3.2 Key habitat for threatened species 'Key habitats' for any vulnerable, endangered or critically endangered species listed under Schedule 1, 1A or 2 of the Threatened Species Conservation Act 1995 and Schedule 4, 4A and 5 of the Fisheries Management Act 1994.	Criteria32	CRITERIA_32	String	50	Input- 'Key habitat for threatened species'
		KEYHAB_NOTES	String	250	Notes on the key habitat for threatened species polygons, such as species or habitat type
3.3 Endangered populations and their habitat Listed under Schedule 1 of the Threatened Species Conservation Act 1995 and Schedule 4 of the Fisheries Management Act 1994.	Criteria33	CRITERIA_33	String	50	Input- 'Endangered populations and their habitat' (more detail required here based on discussions with regions and approaches taken)
		ENDPOP_NOTES	String	250	Notes on the endangered populations and habitat (more detail required here based on discussions with regions and approaches taken)
4.1 Coastal wetlands As defined in SEPP 14	Criteria41	CRITERIA_41	String	50	Input- 'SEPP14- Coastal Wetlands'
4.2 Nationally important wetlands Listed in the Directory of Important Wetlands in NSW	Criteria42	CRITERIA_42	String	50	Fill in source data set, either: <ul style="list-style-type: none"> • Important wetland • Ramsar
		IMPWET_NAME	String	100	Enter 'Name' field from Important wetlands data or 'Ramsar' field from Ramsar data
4.3 Riparian vegetation of rivers 3 rd order streams and above	Criteria43	CRITERIA_43	String	50	Input- 'Riparian vegetation of rivers'

Criterion	Suggested feature class or shapefile name	Suggested fields and associated details			
		Field name	Field type	Field length	Notes
4.4 Vulnerable Estuaries and ICOLLs Classified by Science Division as 'vulnerable' or requiring 'significant protection'	Criteria44	CRITERIA_44	String	50	Fill in source data set, either: <ul style="list-style-type: none"> Vulnerable estuary ICOLL
		NAMETYPE	String	50	Field from source data set
5.1 Karst landscapes As defined in OEH (2011) Guide to NSW Karst and Caves OEH, Sydney	Criteria51	CRITERIA_51	String	50	Input- 'Karst landscapes'
		PURPOSE	String	250	Field from source data set
5.2 Sites of geological significance included in State Heritage Register or Heritage Inventory	Criteria52	CRITERIA_52	String	50	Input- 'Sites of geological significance'
		ITEMNAME	String	80	Field from source data set