

Endangered Ecological Community Models – Hunter, Central and Lower North Coast region, NSW



1. Abstract

The National Environmental Research Program (NERP) Environmental Decisions Hub at the University of Melbourne produced predictor layers for 21 Endangered Ecological Communities. Vegetation survey site data was analysed against environmental variables to determine the likelihood of occurrence across the region.

2. Data Processing

‘Boosted regression trees (BRT) were used to model the potential distributions of 21 EECs within the Greater Hunter* region. Occurrence points for state-listed EECs within the Greater Hunter were extracted from the survey records used as input data for constructing the GHVMv4 (Sivertsen et al., 2011)[^] based on the Map Unit codes. Because EECs are mutually-exclusive (i.e. two EECs cannot, by definition, occur in the same place), we treated these occurrences records as presence-absence data where the presence of one EEC indicated that all other EECs were absent.

‘A set of 18 ecologically-relevant environmental variables were selected as potential predictors of the distribution of threatened species and EECs within the Greater Hunter region. These included variables describing the climate, vegetation, topography and soils that were available across the entire modelling region at 100 m resolution.

‘The predictive power of each model was evaluated using the area under the receiver operator characteristic curve (Hanley & McNeil, 1982), where models with an AUC value of 0.7 or greater were considered to be informative (Swets, 1988b).’

The above text is extracted from: Kujala, H, Whitehead, AL & Wintle, BA (2015). *Excerpt from a report on the biodiversity prioritisation analysis: modelling species and threatened ecological plant communities in the Hunter, Central & Lower North Coast Region of New South Wales*, A report by the NERP Environmental Decisions Hub at The University of Melbourne, Melbourne Victoria.

*‘Greater Hunter region’ in this report = the Hunter, Central and Lower North Coast region

[^]Sivertsen, D, Roff, A, Somerville, M, Thonell, J & Denholm, B 2011, Greater Hunter Native Vegetation Mapping Geodatabase Guide (Version 4.0), Internal report for the Office of Environment and Heritage, Department of Premier and Cabinet, Sydney, Australia.



PRODUCED BY:
The National
Environmental
Research Program
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Coast Regional
Environmental
Management Strategy
(HCCREMS)

DATE: 2015

PURPOSE: This data illustrates the modelled likelihood of occurrence of particular vegetation communities identified as an Endangered Ecological Community across the Hunter, Central & Lower North Coast region of NSW.

TABLE 1. MODELLED ENDANGERED ECOLOGICAL COMMUNITIES

ENDANGERED ECOLOGICAL COMMUNITY NAME
Central Hunter Grey Box Ironbark Woodland In The NSW North Coast And Sydney Basin Bioregion
Central Hunter Ironbark Spotted Gum Grey Box Forest In The NSW North Coast And Sydney Basin Bioregion
Freshwater Wetlands On Coastal Floodplains Of The NSW North Coast Sydney Basin And South East Corner Bioregion
Grassy White Box Woodlands
Hunter Lowland Red Gum Forest In The Sydney Basin And NSW North Coast Bioregion
Hunter Valley Foothills Slaty Gum Woodland In The Sydney Basin Bioregion
Kincumber Scribbly Gum Forest In The Sydney Basin Bioregion
Kurri Sand Swamp Woodland In The Sydney Basin Bioregion
Littoral Rainforest In The NSW North Coast Sydney Basin And South East Corner Bioregion
Lower Hunter Spotted Gum Ironbark Forest In The Sydney Basin Bioregion
Lower Hunter Valley Dry Rainforest In The Sydney Basin And NSW North Coast Bioregion
Lowland Rainforest In NSW North Coast And Sydney Basin Bioregion
Lowland Rainforest On Floodplain In The NSW North Coast Bioregion
Pittwater And Wagstaffe Spotted Gum Forest In The Sydney Basin Bioregion
Ribbon Gum Mountain Gum Snow Gum Grassy Forest Woodland Of The New England Tableland Bioregion
River Flat Eucalypt Forest On Coastal Floodplains Of The NSW North Coast Sydney Basin And South East Corner Bioregion
Subtropical Coastal Floodplain Forest Of The NSW North Coast Bioregion
Swamp Oak Floodplain Forest Of The NSW North Coast Sydney Basin And South East Corner Bioregion
Swamp Sclerophyll Forest On Coastal Floodplains Of The NSW North Coast Sydney Basin And South East Corner Bioregion
Warkworth Sands Woodland In The Sydney Basin Bioregion
White Box Yellow Box Blakely's Red Gum Woodland

3. Dataset Attributes

The models are represented as a continuous raster surface, with no attribute table. The values represent the relative likelihood of occurrence with the highest values representing the most likely areas for the occurrence of the EEC.



ILLUSTRATION: CHRISTINE ROCKLEY

4. Limitations and Considerations

This data represents a subset of Endangered Ecological Communities across the region, and should not be used to represent all EECs. The analysis could only include data available at the time of production, therefore is constrained to those sites and parameters.

The values in each EEC layer are relative, so they should not be compared to each other. It is recommended that sites highlighted by subsequent analyses as high priority for conservation or at risk from development be surveyed as part of the decision-making process. See full technical report for further details.



5. ANZLIC Metadata Statement

GENERAL PROPERTIES	
File Identifier	7471B713-B35E-4080-AE8B-3FD7C5A14B27
Hierarchy Level	dataset
Hierarchy Level Name	dataset
Standard Name	ANZLIC Metadata Profile: An Australian/New Zealand Profile of AS/NZS ISO 19115:2005, Geographic information – Metadata
Standard Version	1.1
Date Stamp	2015-06-29
Resource Title	Endangered Ecological Community Models: Hunter, Central & Lower North Coast Region, NSW
KEY DATES AND LANGUAGES	
Date of creation	2015
Date of publication	2015-06
Metadata Language	eng
Metadata Character Set	utf8
Dataset Languages	eng
Dataset Character Set	utf8
Abstract	This data illustrates the modelled likelihood of occurrence of particular vegetation communities identified as an Endangered Ecological Community across the Hunter, Central & Lower North Coast region of NSW.
Purpose	This data has been produced to inform environmental management and planning
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JURISDICTIONS	
	Australia
	New South Wales
SEARCH WORDS	
	BOUNDARIES-Biophysical
	ECOLOGY-Habitat
	ECOLOGY-Community
	VEGETATION
THEMES AND CATEGORIES	
Topic Category	environment

5. ANZLIC Metadata Statement continued

STATUS AND MAINTENANCE	
Status	completed
Maintenance and Update Frequency	
Date of Next Update	
REFERENCE SYSTEM	
Reference System	EPSG::28356 (GDA94 / MGA zone 56)
DATA SCALES/RESOLUTIONS	
Resolution	100 m
SPATIAL REPRESENTATION TYPE	
Spatial Representation Type	grid
DATASET ACCESS CONSTRAINTS	
Identifier	license
Annotation	License available through Hunter Central Coast Regional Management Strategy
DATASET USE CONSTRAINTS	
Identifier	copyright
Annotation	Use of resource must be referenced to University of Melbourne NERP
ADDITIONAL EXTENTS – GEOGRAPHIC	
Identifier	aus
Identifier	NSW_CESSNOCK__C_
Identifier	NSW_DUNOGG__A_
Identifier	NSW_GLOUCESTER__A_
Identifier	NSW_GOSFORD__C_
Identifier	NSW_GREAT_LAKES__A_
Identifier	NSW_GREATER_TAREE__C_
Identifier	NSW_LAKE_MACQUARIE__C_
Identifier	NSW_MAITLAND__C_
Identifier	NSW_MERRIWA__A_
Identifier	NSW_MURRURUNDI__A_
Identifier	NSW_MUSWELLBROOK__A_
Identifier	NSW_NEWCASTLE__C_
Identifier	NSW_PORT_STEPHENS__A_
Identifier	NSW_SCONE__A_
Identifier	NSW_SINGLETON__A_
Identifier	NSW_WYONG__A_

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