# Title State Vegetation Type Map: Upper Hunter v1.0. VIS\_ID 4894 Alternative title(s) HunterUpperSVM\_v1\_0\_PCT\_E\_4894

# **Abstract**

This dataset was superseded by the State Vegetation Type Map (<a href="https://datasets.seed.nsw.gov.au/dataset/nsw-state-vegetation-type-map">https://datasets.seed.nsw.gov.au/dataset/nsw-state-vegetation-type-map</a>) on 24.06.2022.

The NSW Office of Environment and Heritage (OEH) is producing a new map of the State's native vegetation. This seamless map of NSW's native vegetation types will enable government, industry and the community to better understand the composition and the relative significance of the native vegetation in their local area. The State Vegetation Type Map (SVTM) (<a href="https://www.environment.nsw.gov.au/vegetation/state-vegetation-type-map.htm">https://www.environment.nsw.gov.au/vegetation/state-vegetation-type-map.htm</a>) is constructed from the best available imagery, site survey records, and environmental information.

The primary thematic layer in this dataset is a regional scale map of Plant Community Type (PCT) - "quickview" map.

Where spatially coincident, this map of Upper Hunter (v1.0) supersedes the Greater Hunter Native Vegetation Mapping v4.0. VIS ID 3855 and was generated sourcing the following improvements:

- A comprehensive revision of vegetation plot allocation to Plant Community Types (PCT), superseding GHM v4 Map Units.
- Addition of 463 vegetation plots.
- Comprehensive revision of aerial photo interpretation of Vegetation Photo Patterns (VPP) at 1:10,000. A relevant selection of PCT's were nested and modelled within each VPP.
- Utilisation of Boosted Regression Tree modelling in place of Generalised Dissimilarity Modelling
- All manual aerial photo interpretation of VPP's modelled PCT's performed using high resolution 50cm ADS-40 aerial imagery in place of SPOT-5 2.5m imagery.
- Semi-automated line work generated using high resolution 50cm ADS-40 aerial imagery in place of SPOT-5 2.5m imagery.
- Climatic and topographic rule based envelopes were generated to constrain the maximum spatial envelope for each PCT. Each envelope was further manually edited.
- Dry Sclerophyll communities further constrained by exposure and landform envelopes.
- Selective integration of the following pre-existing maps to PCT: VIS1849, VIS3863, VIS3913, VIS4184, VIS4778
- 312 vegetation communities mapped as PCT's compared to 185 GHMv4 map units over this region.

### QuickView map fields:

- PCTID Plant Community Type identifier.
- PCTName Plant Community Type common names
- vegClass The PCT's Keith Class
- vegFormation The PCT's Keith Formation
- mapSource The source of the polygon's PCT attribution.
- MapName The 100k sheet map name

Note that this is a dissolved surface and does not highlight the fine internal line-work within each map unit. Please refer to the 100k full data sheets for the complete editable internal linework, which are available by request to Data.Broker@environment.nsw.gov.au.

The data are provided in an ArcGIS 10.4 compatible file geodatabase.

Fields in the undissolved 100k sheet fine scale linework:

- polygonID Unique map polygon identifier
- PCTID Plant Community Type identifier
- PCTName Plant Community Type common name
- vegetationClass The PCT's Keith Class
- vegetationFormation The PCT's Keith Formation
- mapSource The source of the polygon's PCT attribution. Possible values are:
  - Manual editing
  - Site Survey
  - Spatial Modelling

- Pre-existing mapping: VIS1849
- Pre-existing mapping: VIS3863
- Pre-existing mapping: VIS3913
- Pre-existing mapping: VIS4184
- Pre-existing mapping: VIS4778
- Expert Rules (see note on grassland attribution below)
- PCTIDMod1 The most likely Plant Community Type identifier as derived from the spatial model.
- PCTIDMod2 The second most likely Plant Community Type identifier as derived from the spatial model.
- PCTIDMod3 The third most likely Plant Community Type identifier as derived from the spatial model.
- vegStruct Vegetation Photo Pattern (VPP) as derived from manual aerial photo interpretation of 50cm ADS40 imagery.

Possible values for vegStruct include direct attribution of some PCT's where possible in addition to these Vegetation Photo Patterns listed below:

- vegStruct (VPP) Description
  - o 0 Non Native
  - 1 Candidate Grasslands
  - o 2 Dry Sclerophyll
  - 3 Wet Sclerophyll
  - 5 Floodplain Forest
  - 7 Non Woody Wetlands
  - 8 Grass Open Woodlands
  - 10 Rainforests
  - 11 Riparian Forests
  - 12 Acacia Woodlands
  - 13 Shrublands
  - 15 Mallee
  - 16 Rocky Outcrops
  - o 17 Belah
  - 100 Dry Rainforest
- PCTmapAccuracyConfidence Modelling Confidence for PCTIDMod1 Note that this reflects the modelling surface (PCTIDMod1) only and may not reflect the confidence of the mapped attribution (PCTID). PCTallocationConfidence can only be accurately applied to the published map surface (PCTID) where mapSource = 'Spatial Modelling'.
- PCTSiteValidation Type of field validation used to assess PCT reliability: Possible Values are:
  - Not validated
  - RPD (Rapid)
  - Full floristic validation
  - Unknown

Full details will be provided in the pending Technical Report.

VIS ID 4893

# Resource locator

**Data Quality Statement** 

Name: Data Quality Statement

Protocol: WWW:DOWNLOAD-1.0-http--download

Description:

Data quality statement for State Vegetation Type Map: Upper Hunter v1.0. VIS ID 4894

Function: download

**Download** package

Name: Download package

Protocol: WWW:DOWNLOAD-1.0-http--download

Description:

Data (geodatabase feature class - guickview map) & documents

Function: download

Protocol: WWW:DOWNLOAD-1.0-http--download Description: **ESRI REST Services directory** Function: download Unique resource identifier Code 051fc57d-29b0-4add-9ba4-f476ea3b275a Presentation Map digital form Edition 1.0 **Dataset English** language Metadata standard ISO 19115 Name Edition 2016 Dataset URI  $\underline{https://datasets.seed.nsw.gov.au/dataset/051fc57d-29b0-4add-9ba4-f476ea3b275a}$ This dataset was developed under the OEH State Vegetation Map project to provide Purpose government and community with regional scale information about native vegetation. Status Completed Spatial representation Type vector Spatial reference system Code identifying the spatial 4283 reference system Equivalent 1:None scale Additional Technical report pending information source **Topic category** 

Name: REST Service

**REST Service** 

Keyword set	
keyword value	BOUNDARIES-Biophysical
	ECOLOGY-Landscape
Originating controlled vocabulary	
Title	ANZLIC Search Words
Reference date	2008-05-16
Geographic location	
West bounding longitude	149.66891
East bounding longitude	152.5
North bounding latitude	-33.07202
South bounding latitude	-31.26375
NSW Place Name	Upper Hunter
Vertical extent information	
Minimum value	-100
Maximum value	2228
Coordinate reference system	
Authority code	urn:ogc:def:cs:EPSG::
Code identifying the coordinate reference system	5711
Temporal extent	
Begin position	2018-01-01
End position	N/A
Dataset reference date	
Resource maintenance	
Maintenance and update frequency	Unknown
Contact info	
Contact position	Data Broker
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Responsible party role	pointOfContact

# Lineage

A summary of the product's lineage is below. Please refer to pending technical notes for a detailed description of the methodologies and source datasets.

The PCT map was derived primarily using a spatial modeling approach augmented with high resolution aerial imagery (50cm ADS40) for visual interpretation and automated line-work derivation.

In summary, the process for PCT attribution involved the following:

Vegetation Survey and Classification: Existing floristic plot data comprised over 4000 existing sites after data cleaning. To allocate survey sites to PCTs, full floristic plots were analysed using a UPGMA clustering approach in Primer with significant groups identified using SIMPROF and species contributions for each resulting group calculated using SIMPER.

Pattern Derivation: A multi-resolution segmentation algorithm was used to create image objects with low internal variation. Image objects represent patches of vegetation that can later be classified based on attributes such as crown cover, spectral response, or soil type. The segmentation parameters and scale was derived iteratively based on visual inspection. Vegetation recognised in high spatial resolution imagery (ADS40 – 50cm) were used as a reference point. This process provided the line work for subsequent PCT attribution.

Visual attribution of Vegetation Photo Pattern (VPP): The purpose of attributing VPP's to polygons is to predetermine broad vegetation types for modeling purposes using remote sensing. These classes reduce the PCT options for any one polygon making the modeling more effective in its attribution. A structural class was attributed to every polygon in the study area. Structural classes were assigned by visual inspection referencing ADS40imagery. Every polygon was visually checked by an expert interpreter.

Modeling Envelopes: As a further constraint to modeling outcomes, spatial envelopes were used to constrain PCTs to certain geographic ranges, reducing the amount of types competing within the model at any particular location. The constraints used were applied at different stages in the mapping process. The constraints were derived from particular IBRA (Interim Bioregionalisation of Australia v7; Commonwealth of Australia 2012) subregions, selected based on review of the literature and expert opinion. Further topographic envelopes were also applied constraining some PCT's to specific landforms.

Spatial Distribution Modeling of Plant Community Types: Modeling of PCT used Boosted Regression Trees (BRT). A suite of over one hundred candidate environmental predictor variables, including climate, geology, soil, geophysical data, and terrain indices, were compiled for use in the BRT models. A comprehensive list of these predictor variables will be found in the Technical Notes.

Integration of Existing Mapping: Selective Extractions from two existing datasets were spliced into the modelled map surface in some locations. The map units from these pre-existing products have been translated to PCT where appropriate. The field !mapSource! lists which polygon attributions were sourced from these datasets. These datasets are specified below by VIS ID and can be identified on SEED using the following queries: o VIS1849 o VIS3863 o VIS3913 o VIS4184 o VIS4778

Post modelling: The modelled surface was inspected visually where possible and manually edited in by expert ecologists to address any obvious anomalies due to source data limitations such as a low sample density or course environmental data. Some rules were also applied for grassland extents. These included: PCT 484 and PCT 796 where modelled except where the following spatial rules apply, • PCT 796: All other polygons of candidate Native Grasslands below 200m contour. • PCT 800: All other candidate Native Grasslands on the Merriwa basalt plateau. • PCT 805: All other candidate Native Grasslands above 700m

Limitations on public access	
Scope	dataset
DQ Completeness Commission	
Explanation	complete
DQ Completeness Omission	
Explanation	complete
DQ Topological Consistency	
Explanation	geometrically and topologically correct

Responsible party

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Responsible party role pointOfContact

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Metadata date 2024-02-26T15:24:42.281383

Metadata language