



Office of
Environment
& Heritage

BioNet Data Services

Vegetation map data standard

Version 1.0

© 2017 State of NSW and Office of Environment and Heritage

With the exception of photographs, the State of NSW and Office of Environment and Heritage are pleased to allow this material to be reproduced in whole or in part for educational and non-commercial use, provided the meaning is unchanged and its source, publisher and authorship are acknowledged. Specific permission is required for the reproduction of photographs.

The Office of Environment and Heritage (OEH) has compiled this report in good faith, exercising all due care and attention. No representation is made about the accuracy, completeness or suitability of the information in this publication for any particular purpose. OEH shall not be liable for any damage which may occur to any person or organisation taking action or not on the basis of this publication. Readers should seek appropriate advice when applying the information to their specific needs.

All content in this publication is owned by OEH and is protected by Crown Copyright, unless credited otherwise. It is licensed under the [Creative Commons Attribution 4.0 International \(CC BY 4.0\)](#), subject to the exemptions contained in the licence. The legal code for the licence is available at [Creative Commons](#).

OEH asserts the right to be attributed as author of the original material in the following manner: © State of New South Wales and Office of Environment and Heritage 2017.

Published by:

Office of Environment and Heritage

59 Goulburn Street, Sydney NSW 2000

PO Box A290, Sydney South NSW 1232

Phone: +61 2 9995 5000 (switchboard)

Phone: 131 555 (environment information and publications requests)

Phone: 1300 361 967 (national parks, general environmental enquiries, and publications requests)

Fax: +61 2 9995 5999

TTY users: phone 133 677, then ask for 131 555

Speak and listen users: phone 1300 555 727, then ask for 131 555

Email: info@environment.nsw.gov.au

Website: www.environment.nsw.gov.au

Report pollution and environmental incidents

Environment Line: 131 555 (NSW only) or info@environment.nsw.gov.au

See also www.environment.nsw.gov.au

ISBN 978-1-76039-668-8

OEH 2017/0034

January 2017

**Find out more about your environment at:
www.environment.nsw.gov.au**

Contents

- 1 Introduction 3
 - 1.1 Background to the development of the standard3
- 2 Overview of the standard 4
- 3 Field level details 6
 - 3.1 Metadata.....6
 - 3.2 VegetationClassification 11
 - 3.3 ThreatenedEntities..... 13
 - 3.4 MappedData 13
 - 3.5 MappedCondition.....22

1 Introduction

This document describes the data standard for map data services produced by Office of Environment and Heritage (OEH) based on NSW Plant Community Types (PCT).

The purpose of the standard is to provide a methodology and implementation independent specification for the data to be captured and shared in PCT vegetation maps. This includes the field naming conventions, definition of fields and their format. The standard will form the basis of a vegetation map database and associated web services that will facilitate the management and sharing of NSW PCT map data, at three map levels:

1. Regional scale (1:25000)
2. Local fine scale (1:5000)
3. Property scale (1:1000) with offsets

1.1 Background to the development of the standard

A series of external consultation workshops were carried out in 2013 leading to the publication of [NSW user requirements](#) for native vegetation map product specifications.

In 2015 an OEH Native Vegetation Map Database Working Group was convened to develop this data standard.

This document has been developed to standardise the management and delivery of new native vegetation type mapping products, based on the following objectives:

- address data inconsistency between map products which leads to interpretation problems, by adoption of an agreed and recognised standard
- improve the ability of end users to combine and interpret linked BioNet datasets by ensuring that field naming, definition and format is consistent, where one or more fields are in common between the PCT Vegetation Map data standard and other linked datasets.

2 Overview of the standard

The following diagram provides a logical overview of the standard. It groups the individual fields specified within this standard into categories where there is a common theme or purpose between the various individual data fields. The groups are not intended to be technically implemented, rather they help convey to the reader the higher level purpose in sharing the various individual data fields.

The field categories have been divided into two main groups, indicating whether data are mapped at a polygon level (PCT), or at a smaller object class (Sub-PCT). The latter applies to property scale vegetation map data, whereby polygons with PCT information may be subdivided into vegetation zones based on condition.

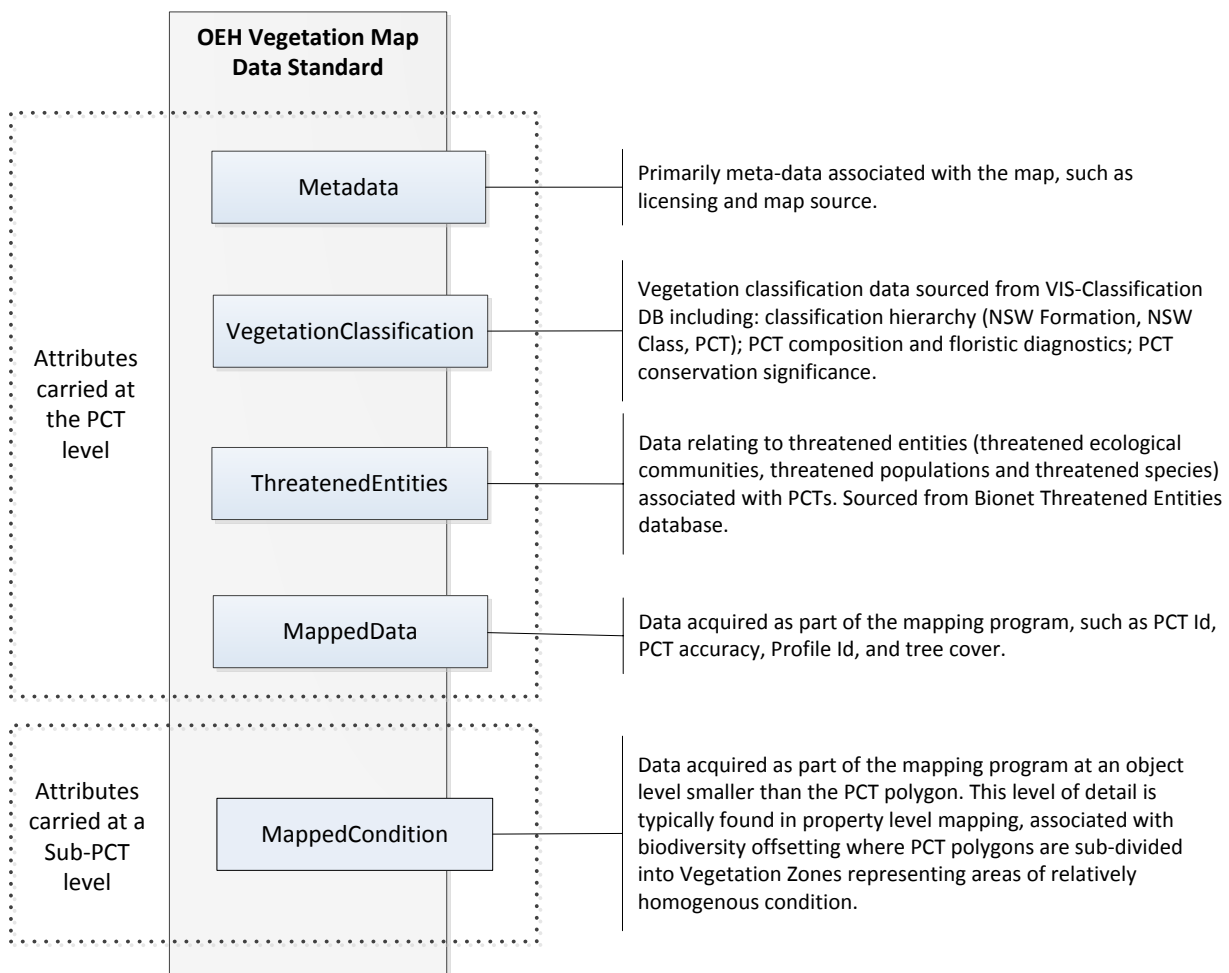


Figure 1: Conceptual overview of the proposed data standard

In total, 40 different data fields will be defined in the vegetation map standard. A key component of the standard is the linkage with other OEH databases:

- Vegetation Information System Classification database (VIS Classification)
- Bionet Threatened Entities

VIS Classification is the point-of-truth for PCT data storage and maintenance. VIS Classification also stores and maintains associated metrics, such as other classification schemes that form part of the [NSW operational classification hierarchy](#). The vegetation map data standard is linked to VIS Classification via the field, PCTID. Data from VIS Classification are then used to populate the fields listed below:

- PCTName,
- PCTPercentCleared
- vegetationClass,
- vegetationFormation
- substrate
- status
- upperStratumSpeciesList

Bionet Threatened Entities is the point-of-truth for threatened species and ecological communities' data storage and maintenance. The standard links to this database via the field, ProfileID. Data from Bionet Threatened Entities can then be used to populate the fields listed below:

- countryTECname
- stateTECname

Note that as threatened ecological community metrics are also stored in VIS Classification, the association between a PCT ID and profile ID will be verified before the TEC fields are populated.

Therefore, a mapping program need only assign to polygons the PCT ID and Profile ID in order for the above fields to be populated using VIS Classification and Threatened Entities. In addition, spatial expression is provided to these metrics as stored in the databases.

The vegetation map data standard also includes data commonly captured as part of the mapping program that are not maintained in the databases specified above. These include vegetation condition, classification accuracy/reliability, and land cover.

3 Field level details

The following tables provide the exact specifications of the data fields available in the vegetation map database. Each table presents the group of terms which fall within the relevant category as shown in Figure 1. Each field is also marked with a reference to clearly indicate if the field is used in other data services, such as for Species Sighting and Vegetation Classification. The Data Type follows the [Microsoft Developer Network Reference](#). Data are stored at polygon level. Null values are permitted when no data are available for a record.

3.1 Metadata

| Field Name | Mandatory? | Definition | Example | Data Type | Vocabulary shared with web data service |
|-----------------|------------|---|-----------------------------------|---------------|---|
| collectionCode | Yes | The name, acronym, coden, or initialism identifying the collection or data set from which the record was derived. This will always be 'BioNet Vegetation Map Catalogue'. | 'BioNet Vegetation Map Catalogue' | VARCHAR (50) | Species Sighting; Vegetation Classification |
| createdBy | Yes | Name of person & organisation that created the polygon data. Purpose is to assist with data maintenance. For example, PCT assignment to a polygon can be verified with the mapper. Must follow the format: < Surname,><middle name initial,><first name;> < (Organisation)>. | 'Smith,F,J; (OEH)' | VARCHAR (50) | none |
| datasetID | Yes | The dataset ID is populated from the VIS ID from the VIS Map Catalogue. Datasets are first catalogued in VIS Map Catalogue database and assigned a VIS ID. | '3817' | SMALLINT | Species Sighting |
| Dterms_created | Yes | Date the polygon was created. Population via manual entry or time stamp. | '22/08/2014' | DATETIME2 (7) | none |
| Dterms_modified | Yes | The most recent date-time on which the resource (polygon) was changed (geometry or attributes). | '15/03/2015' | DATETIME2 (7) | Species Sighting & Vegetation Classification |

Vegetation map data standard

| Field Name | Mandatory? | Definition | Example | Data Type | Vocabulary shared with web data service | | | | | | | | | | | | | | | | |
|---|--|---|--|---------------|--|---------------|--------------------------|--|-------------------|---------------------------------------|---|---|------------------|------------------------------|-------------|-------------------|-------|--------------------------------------|--|--|--|
| Dcterms_rights | Yes | Information about rights held in and over the resource. Typically, rights information includes a statement about various property rights associated with the resource, including intellectual property rights. | 'Creative Commons By Attribution' | VARCHAR (255) | Species Sighting & Vegetation Classification | | | | | | | | | | | | | | | | |
| Dcterms_rightsHolder | Yes | A person or organisation owning or managing rights over the resource. | 'Office of Environment and Heritage', or 'Wingecarribee Shire Council' | VARCHAR (150) | Species Sighting & Vegetation Classification | | | | | | | | | | | | | | | | |
| mapSource | Yes | The various sources of information used in deriving the vegetation map, including spatial models, visual interpretation and existing map products. | 'Spatial modelling'. | VARCHAR (55) | none | | | | | | | | | | | | | | | | |
| | | <table border="1"> <thead> <tr> <th>Controlled vocabulary</th> <th>Definition</th> </tr> </thead> <tbody> <tr> <td>Not specified</td> <td>Not specified</td> </tr> <tr> <td>Manual editing (eg; API)</td> <td>Manual allocation via visual interpretation of remote sensing data</td> </tr> <tr> <td>Spatial modelling</td> <td>Spatial modelling and/or expert rules</td> </tr> <tr> <td>Combination of spatial modelling and manual editing</td> <td>Combination of spatial modelling and manual editing</td> </tr> <tr> <td>Existing mapping</td> <td>Existing vegetation map data</td> </tr> <tr> <td>Survey data</td> <td>Field survey data</td> </tr> <tr> <td>Other</td> <td>Other map source not described above</td> </tr> </tbody> </table> | Controlled vocabulary | Definition | Not specified | Not specified | Manual editing (eg; API) | Manual allocation via visual interpretation of remote sensing data | Spatial modelling | Spatial modelling and/or expert rules | Combination of spatial modelling and manual editing | Combination of spatial modelling and manual editing | Existing mapping | Existing vegetation map data | Survey data | Field survey data | Other | Other map source not described above | | | |
| Controlled vocabulary | Definition | | | | | | | | | | | | | | | | | | | | |
| Not specified | Not specified | | | | | | | | | | | | | | | | | | | | |
| Manual editing (eg; API) | Manual allocation via visual interpretation of remote sensing data | | | | | | | | | | | | | | | | | | | | |
| Spatial modelling | Spatial modelling and/or expert rules | | | | | | | | | | | | | | | | | | | | |
| Combination of spatial modelling and manual editing | Combination of spatial modelling and manual editing | | | | | | | | | | | | | | | | | | | | |
| Existing mapping | Existing vegetation map data | | | | | | | | | | | | | | | | | | | | |
| Survey data | Field survey data | | | | | | | | | | | | | | | | | | | | |
| Other | Other map source not described above | | | | | | | | | | | | | | | | | | | | |
| modifiedBy | Yes | Name of person and organisation who last modified the record (geometry or attributes). Must follow the format < surname,><middle name initial,><first name;>< (organisation)>. | 'Smith,F,J; (OEH)' | VARCHAR (50) | none | | | | | | | | | | | | | | | | |

Vegetation map data standard

| Field Name | Mandatory? | Definition | Example | Data Type | Vocabulary shared with web data service |
|-----------------------|------------|--|---|---------------|---|
| parentID | Yes | The original Polygon ID of a polygon. This field is initially populated to equal the field, polygonID. If the polygon is subsequently subdivided, then the separate parts retain the original polygon ID. Meanwhile, each part is assigned a new polygon ID. | '2415111' | VARCHAR (40) | none |
| PCTeditsApplied | No | Records PCT edits based on expert user knowledge. These comments are appended to existing comments thereby providing a lineage of edits. Separate comments are delimited by semi-colons. | 'PCTID changed from 1026' | VARCHAR (MAX) | none |
| polygonID | Yes | A unique identifier assigned to a polygon by the mapping program. | '2415111' | VARCHAR (40) | none |
| sourceImageResolution | No | The type of source imagery used for deriving the polygon. | 'ADS40 digital aerial imagery' | VARCHAR (50) | none |
| | | Controlled vocabulary | Definition | | |
| | | ADS digital aerial imagery | Digital Image Acquisition System data | | |
| | | Black & white aerial photography | Digital or scanned black and white aerial photography | | |
| | | Colour aerial photography | Digital or scanned colour aerial photography | | |
| | | Digital aerial imagery (other) | Digital aerial imagery not described in the vocabulary | | |
| | | High Resolution Satellite Imagery (other) | High resolution satellite imagery not described in the vocabulary | | |

Vegetation map data standard

| Field Name | Mandatory? | Definition | Example | Data Type | Vocabulary shared with web data service |
|------------|------------|-------------------------------|---|-----------|---|
| | | Hyperspectral imagery (other) | Hyperspectral imagery not described in the vocabulary | | |
| | | Landsat 8 OLIS multispectral | Landsat 8 Operational Land Imager Sensor multispectral data | | |
| | | Landsat 8 OLIS panchromatic | Landsat 8 Operational Land Imager Sensor panchromatic data | | |
| | | Landsat TM5 | Landsat 5 Thematic Mapper data | | |
| | | Landsat TM7 multispectral | Landsat 7 Thematic Mapper multispectral data | | |
| | | Landsat TM7 panchromatic | Landsat 7 Thematic Mapper panchromatic data | | |
| | | LIDAR | Light Detection and Ranging Systems Technology | | |
| | | MODIS | Moderate Resolution Imaging Spectroradiometer data | | |
| | | Multi-date SPOT | SPOT data spanning several dates | | |
| | | Multi-spectral airborne | Multi-spectral airborne not described elsewhere | | |
| | | None | No imagery used | | |
| | | RADAR | Satellite or aerial RADAR data | | |

Vegetation map data standard

| Field Name | Mandatory? | Definition | Example | Data Type | Vocabulary shared with web data service |
|-----------------|------------|--|--|---------------|---|
| | | Satellite (other) | Satellite data not described elsewhere | | |
| | | Sentinel-2 | Sentinal-2 multispectral data | | |
| | | Shuttle topographic radar | Shuttle topographic radar data | | |
| | | SPOT 5 multispectral | SPOT 5 multispectral data | | |
| | | SPOT 5 panchromatic | SPOT 5 panchromatic data | | |
| | | SPOT 6/7 visual | SPOT 6 and SPOT 7 Optimized Visual Rendering data | | |
| | | Combination of imagery (other) | Combination of imagery other than described in the vocabulary | | |
| sourceImageDate | No | The date of the source image used to derive the polygon. | '23/09/2010' | DATETIME2 (7) | none |
| userComments | No | General comments or notes related to the polygon, of a general nature. Includes user feedback. Can be used to provide extra notes about the polygon, not captured by other schema fields. Comments are not deleted, but added to, so as to retain the lineage. After the comment is the name of the commentator and date, in the format: <(surname,><middle name initial,><first name;><day/month/year)>. | 'Check - needs field verification (Smith,A,J; 11/7/15); includes some exotics from plantation/arboretum (Jones,P; 19/12/15)' | VARCHAR (MAX) | none |

3.2 VegetationClassification

| Field Name | Mandatory? | Definition | Example | Data Type | Vocabulary shared with web data service |
|-------------------|------------|--|--|----------------|---|
| PCTName | Yes | A colloquial description of the plant community that can be understood by non-botanists. It may include common names of dominant plant species, names of a geographical region, a substrate, a soil type or a climatic zone. Populated from VIS Classification via PCTID link. | 'Broad-leaved Stringybark – Yellow Box shrub/grass open forest of the New England Tableland Bioregion' | VARCHAR (MAX) | Vegetation Classification |
| PCTPercentCleared | Yes | The aerial extent to which a PCT has been cleared relative to that PCT's pre-1750 extent, represented as a percentage. Format: percentage represented as a decimal value; e.g. for 50% would be 0.50 Populated from VIS Classification via PCTID link. | '0.50' | DECIMAL (18,2) | Vegetation Classification |
| Status | Yes | The formal listing status of the PCT, as determined by the NSW Plant Community Type Change Control Panel, according to the following controlled vocabulary: <ul style="list-style-type: none"> • Approved • Decommissioned • Provisionally Approved • Provisionally Approved – CMA Change • Provisionally Decommissioned. | 'Approved' | VARCHAR (MAX) | Vegetation Classification |
| substrate | Yes | Includes the horizons (soil layers): R (continuous masses [not boulders] of moderately strong to very strong rock, such as bedrock), and that part of C (consolidated or unconsolidated material, usually partially weathered) that shows no pedological development. See The National Committee on Soil and Terrain (2009) : | 'Alluvium, Beach Sediment, Eolian sand' | VARCHAR (MAX) | none |

Vegetation map data standard

| Field Name | Mandatory? | Definition | Example | Data Type | Vocabulary shared with web data service |
|-------------------------|------------|--|---|---------------|---|
| upperStratumSpeciesList | Yes | <p>Populated via PCTID link to VIS Classification. As a PCT may carry several different substrates, these are separated by commas (see example).</p> <p>The list of species, separated by semi-colon, present in the upper stratum. If this stratum is not present, this is indicated by 'null'.</p> <p>The format for the species name is as follows: <genus> <specific epithet> <connecting term> <intraspecific epithet>;</p> <p>Where the connecting term can be one of the following: subsp. = subspecies var. = variety</p> <p>.As a PCT may carry several different species, these are separated by semi-colons (see example).</p> | 'Acacia doratoxylon; Eucalyptus dealbata;' | VARCHAR (MAX) | Vegetation Classification |
| vegetationClass | Yes | <p>Populated via PCTID link to VIS Classification.</p> <p>Equivalence of a community to one of the Vegetation Classes as originally defined in the Keith (2004) Statewide Vegetation Map.</p> | 'New England Grassy Woodlands' | VARCHAR (MAX) | Vegetation Classification |
| vegetationFormation | Yes | <p>Populated via PCTID link to VIS Classification.</p> <p>Equivalence of a community to one of the Vegetation Classes as original defined in the Keith (2004) Statewide Vegetation Map.</p> <p>Populated via PCTID link to VIS Classification.</p> | 'Grassy Woodlands' | VARCHAR (MAX) | Vegetation Classification |

3.3 ThreatenedEntities

| Field Name | Mandatory? | Definition | Example | Data Type | Vocabulary shared with web data service |
|----------------|------------|---|--|---------------|---|
| countryTECname | Yes | The commonwealth listed threatened ecological community name. Commonwealth listed threatened ecological communities are defined in the Commonwealth <i>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC Act). Populated via profileID link to Bionet Threatened Entities. | 'Blue Gum High Forest of the Sydney Basin Bioregion' | VARCHAR (MAX) | Threatened Entities |
| stateTECname | Yes | NSW TSC Act Threatened Ecological Communities (TEC) name. State listed threatened ecological communities are defined in the <i>NSW Threatened Species Conservation Act 1995</i> (TSC Act). Populated via profileID link to Bionet Threatened Entities. | 'Blue Gum High Forest in the Sydney Basin Bioregion' | VARCHAR (MAX) | Threatened Entities |

3.4 MappedData

| Field Name | Mandatory? | Definition | Example | Data Type | Vocabulary shared with web data service |
|------------|------------|--|---------------|---------------|---|
| areaHa | Yes | Area of each polygon in hectares. | '33.738353' | NUMERIC (9,2) | none |
| areaSqM | Yes | Area of each polygon in square metres. | '7554.690781' | NUMERIC (9,2) | none |

| Field Name | Mandatory? | Definition | Example | Data Type | Vocabulary shared with web data service | | | | | | | | | | | | | | | | | | | | |
|---|--|---|-----------------------|--------------|---|--|--|--|--|---------------------------------|------------------|---|--------------------|--------------------------|---|--------------------------------------|-----------------------------|--------------|----------------------------------|--------------|----------------------------------|--------------|--|--|--|
| landCover | No | Land cover type using land cover classes from Sivertsen (2009). | 'wetlands (natural)' | VARCHAR (70) | none | | | | | | | | | | | | | | | | | | | | |
| | | <table border="1"> <thead> <tr> <th>Controlled vocabulary</th> <th>Definition</th> </tr> </thead> <tbody> <tr> <td>Non-woody areas without a previous cultivation pattern observed</td> <td>Candidate native non-woody vegetation and bare earth. Herbaceous communities (Woody component <0.2%)</td> </tr> <tr> <td>Non-woody areas with a previous cultivation pattern observed</td> <td>Candidate native non-woody vegetation and bare earth. Herbaceous communities (Woody component <0.2%)</td> </tr> <tr> <td>Bare earth (total vegetation cover < 0.2%)</td> <td>Scalds, salt scald, bare fallow</td> </tr> <tr> <td>Woody vegetation</td> <td>Indicating the presence of woody vegetation</td> </tr> <tr> <td>Wetlands (natural)</td> <td>Both woody and non-woody</td> </tr> <tr> <td>Artificial water storage and natural open water</td> <td>Lakes, dams, weirs, turkey nest dams</td> </tr> <tr> <td>Rock outcrop (<20% of area)</td> <td>Rock outcrop</td> </tr> <tr> <td>Rock outcrop (20 to 50% of area)</td> <td>Rock outcrop</td> </tr> <tr> <td>Rock outcrop (50 to 70% of area)</td> <td>Rock outcrop</td> </tr> </tbody> </table> | Controlled vocabulary | Definition | Non-woody areas without a previous cultivation pattern observed | Candidate native non-woody vegetation and bare earth. Herbaceous communities (Woody component <0.2%) | Non-woody areas with a previous cultivation pattern observed | Candidate native non-woody vegetation and bare earth. Herbaceous communities (Woody component <0.2%) | Bare earth (total vegetation cover < 0.2%) | Scalds, salt scald, bare fallow | Woody vegetation | Indicating the presence of woody vegetation | Wetlands (natural) | Both woody and non-woody | Artificial water storage and natural open water | Lakes, dams, weirs, turkey nest dams | Rock outcrop (<20% of area) | Rock outcrop | Rock outcrop (20 to 50% of area) | Rock outcrop | Rock outcrop (50 to 70% of area) | Rock outcrop | | | |
| Controlled vocabulary | Definition | | | | | | | | | | | | | | | | | | | | | | | | |
| Non-woody areas without a previous cultivation pattern observed | Candidate native non-woody vegetation and bare earth. Herbaceous communities (Woody component <0.2%) | | | | | | | | | | | | | | | | | | | | | | | | |
| Non-woody areas with a previous cultivation pattern observed | Candidate native non-woody vegetation and bare earth. Herbaceous communities (Woody component <0.2%) | | | | | | | | | | | | | | | | | | | | | | | | |
| Bare earth (total vegetation cover < 0.2%) | Scalds, salt scald, bare fallow | | | | | | | | | | | | | | | | | | | | | | | | |
| Woody vegetation | Indicating the presence of woody vegetation | | | | | | | | | | | | | | | | | | | | | | | | |
| Wetlands (natural) | Both woody and non-woody | | | | | | | | | | | | | | | | | | | | | | | | |
| Artificial water storage and natural open water | Lakes, dams, weirs, turkey nest dams | | | | | | | | | | | | | | | | | | | | | | | | |
| Rock outcrop (<20% of area) | Rock outcrop | | | | | | | | | | | | | | | | | | | | | | | | |
| Rock outcrop (20 to 50% of area) | Rock outcrop | | | | | | | | | | | | | | | | | | | | | | | | |
| Rock outcrop (50 to 70% of area) | Rock outcrop | | | | | | | | | | | | | | | | | | | | | | | | |

Vegetation map data standard

| Field Name | Mandatory? | Definition | Example | Data Type | Vocabulary shared with web data service |
|------------|------------|----------------------------|---|-----------|---|
| | | Rock outcrop (70% of area) | Rock outcrop | | |
| | | Agricultural land cover | Cropping, exotic pasture, horticulture, plantation | | |
| | | Non-natural land cover | All man made land covers other than water bodies (eg; mining, quarrying, urban, roads, utilities) | | |

Vegetation map data standard

| Field Name | Mandatory? | Definition | Example | Data Type | Vocabulary shared with web data service |
|-------------------|------------|--|----------------------------------|---------------|---|
| legacyVegTypeCode | No | Legacy vegetation classification code (not PCT based) captured as part of the mapping program. | 'S_HL08' | VARCHAR (20) | none |
| legacyVegTypeName | No | Legacy vegetation classification name (not PCT) captured as part of the mapping program. | 'Coastal Sandstone Heath-Mallee' | VARCHAR (MAX) | none |
| PCTID | Yes | The unique identifier for the Plant Community Type. The PCT Id is captured as part of the mapping program. | '1892' | INT | Vegetation Classification |
| PCTmapAccuracy | Yes | <p>'PCTmapAccuracy' is a measure of the map's correctness for each PCT in the map represented as a % (percentage). PCT map accuracy is defined as the user accuracy, that is, the degree to which the attributes of the map agree with 'truth' reference data (Mas et al., 2014). The truth reference dataset consists of observations of what PCT occurs on the ground at a precise location measured using a standard field survey sampling technique.</p> <p>There are three basic components of an accuracy assessment that are required to support reliable inferences about map quality (Stehman & Czaplewski 1998): a random sampling scheme of all PCTs that were mapped; a robust method for allocating a PCT for each field survey sample in the 'truth' reference dataset; and an accuracy assessment that includes a confusion matrix with the number of samples among map categories and a calculation of user accuracy.</p> <p>The number of field survey samples used in determining the PCTmapAccuracy value for each PCT, is recorded in the field PCTMapAccuracySiteNo.</p> <p>[Future iterations of this standard should reference an agreed NSW assessment method]</p> | '55.22' | NUMERIC (5,2) | none |

Vegetation map data standard

| Field Name | Mandatory? | Definition | Example | Data Type | Vocabulary shared with web data service |
|--------------------------|------------|---|---------|-----------|---|
| PCTmapAccuracyConfidence | Yes | A measure of the statistical confidence in the map accuracy value presented in PCTmap Accuracy field [to be determined] | | | |
| PCTmapAccuracySiteNo | Yes | The number of independent reference field survey samples for each PCT used to derive PCTmapAccuracy values. [Future iterations of this standard will investigate the capture of the specific survey site IDs to facilitate links to that survey data] | '10' | SMALLINT | none |
| PCTIDMod1 | No | The most likely Plant Community Type to occur in the polygon, identified by its PCT ID. This value is as derived from a spatial model that may provide one or more PCT alternatives. Provides an indication of PCT uncertainty, as several PCTs were derived from spatial modelling as used by the State Vegetation Mapping and Classification program . Note that PCTID is still the primary field to store the PCT ID. | '571' | INT | none |
| PCTIDMod2 | No | The second most likely Plant Community Type identifier as derived from a spatial model. Provides an indication of PCT uncertainty, as several PCTs were derived from spatial modelling as used by the State Vegetation Mapping and Classification program. Note that PCTID is still the primary field to store the PCT ID. | '567' | INT | none |
| PCTIDMod3 | No | The third most likely Plant Community Type identifier as derived from a spatial model. Provides an indication of PCT uncertainty, as several PCTs were derived from spatial modelling as used by the State Vegetation Mapping and Classification program. Note that | '2' | INT | none |

| Field Name | Mandatory? | Definition | Example | Data Type | Vocabulary shared with web data service | | | | | | | | | | | | | | |
|---------------------------|---|---|-----------------------|------------|---|---------|---------------|---------------------------|----------------------|---|------------------------|--|---------------------------|--|-----------------------|---|-------|--------------|------|
| PCTSiteValidation | Yes | <p>PCTID is still the primary field to store the PCT ID.</p> <p>Type of field validation used to assess PCT reliability. Indicates if the PCT classification was validated by field-based data, and the type of validation.</p> <table border="1"> <thead> <tr> <th>Controlled vocabulary</th> <th>Definition</th> </tr> </thead> <tbody> <tr> <td>Unknown</td> <td>Unknown</td> </tr> <tr> <td>Not validated</td> <td>No validation carried out</td> </tr> <tr> <td>Informal field check</td> <td>PCT confirmed through expert visual site check (site visit)</td> </tr> <tr> <td>Partial Floristic Plot</td> <td>PCT confirmed through expert visual site check supported by rapid floristic survey plot.</td> </tr> <tr> <td>Full floristic validation</td> <td>PCT confirmed through expert visual site check supported by full floristic survey plot</td> </tr> <tr> <td>Systematic validation</td> <td>PCT confirmed through systematic analysis of full floristic plot observation against existing quantitatively derived classification</td> </tr> </tbody> </table> | Controlled vocabulary | Definition | Unknown | Unknown | Not validated | No validation carried out | Informal field check | PCT confirmed through expert visual site check (site visit) | Partial Floristic Plot | PCT confirmed through expert visual site check supported by rapid floristic survey plot. | Full floristic validation | PCT confirmed through expert visual site check supported by full floristic survey plot | Systematic validation | PCT confirmed through systematic analysis of full floristic plot observation against existing quantitatively derived classification | 'RPD' | VARCHAR (30) | none |
| Controlled vocabulary | Definition | | | | | | | | | | | | | | | | | | |
| Unknown | Unknown | | | | | | | | | | | | | | | | | | |
| Not validated | No validation carried out | | | | | | | | | | | | | | | | | | |
| Informal field check | PCT confirmed through expert visual site check (site visit) | | | | | | | | | | | | | | | | | | |
| Partial Floristic Plot | PCT confirmed through expert visual site check supported by rapid floristic survey plot. | | | | | | | | | | | | | | | | | | |
| Full floristic validation | PCT confirmed through expert visual site check supported by full floristic survey plot | | | | | | | | | | | | | | | | | | |
| Systematic validation | PCT confirmed through systematic analysis of full floristic plot observation against existing quantitatively derived classification | | | | | | | | | | | | | | | | | | |
| profileID | Yes | The unique identifier for the related state and/or Commonwealth listed threatened ecological community profile as stored in the Bionet Threatened Entities database maintained by the | '10094' | INT | Species Sighting | | | | | | | | | | | | | | |

Vegetation map data standard

| Field Name | Mandatory? | Definition | Example | Data Type | Vocabulary shared with web data service |
|---------------------|------------|---|----------------------|----------------|---|
| treeCover | No | Office of Environment and Heritage. The Profile ID is captured during the mapping program. Percent by area of tree cover in each polygon. Tree cover is defined as woody vegetation greater than 2 metres in height and includes foliage. Tree cover is derived from a raster classification of remotely sensed data. The percentage remaining is given as a decimal, 0.86 = 86%. | '0.78098' | DECIMAL (18,2) | none |
| Variant | Yes | Dominant canopy species for communities where canopy dominance can vary between locations. The format for the species name is as follows: <genus><specific epithet><connecting term><intraspecific epithet>; where the connecting term can be one of the following: subsp. = subspecies var. = variety | 'Eucalyptus saligna' | VARCHAR (MAX) | none |
| vegetationStructure | No | The vegetation structure identified by visual interpretation of digital aerial photography or satellite imagery. | 'Floodplain Forest' | VARCHAR (MAX) | none |

| Field Name | Mandatory? | Definition | Example | Data Type | Vocabulary shared with web data service |
|------------|------------|------------------------------|--|-----------|---|
| | | Controlled vocabulary | Definition | | |
| | | Acacia Woodlands | Woodlands dominated by Acacia species | | |
| | | Belah | Casuarina cristata dominated | | |
| | | Candidate Native Grasslands | Potential areas of native grassland | | |
| | | Dry Sclerophyll Forests | Sclerophyllous trees and shrub and/or grassy understorey | | |
| | | Floodplain Forest | Forest on alluvial soils on floodplains | | |
| | | Grassy open woodland | Dominated by eucalypts with an open canopy and diverse ground cover of tussock grasses and herbs | | |
| | | Lignum shrubland | Dominated by Lignum (Muehlenbeckia florulenta), occurring on floodplains and riparian zones | | |
| | | Mallee | Trees with multiple stems originating from an underground lignotuber, up to 10 metres in height | | |
| | | Mangrove | Mangrove species found in coastal saline or brackish water | | |

Vegetation map data standard

| Field Name | Mandatory? | Definition | Example | Data Type | Vocabulary shared with web data service |
|------------|------------|-------------------------|--|-----------|---|
| | | Non native | Non native vegetation | | |
| | | Non-woody Wetlands | Wetland species without a woody overstorey | | |
| | | Rainforest | Rainforest species | | |
| | | Riparian Forest | Forested area adjacent to a body of water (eg; river, lake) | | |
| | | Rock outcrop | Dominated by rocks | | |
| | | Shrubland | Plant community characterised by small to medium sized woody multi-stemmed plants (shrubs) | | |
| | | Weeping Myall woodland | Open woodland found on clay soils on plains and characterised by Weeping Myall (<i>Acacia pendula</i>) | | |
| | | Wet Sclerophyll Forests | Sclerophyllous trees and mesophyllous understorey | | |

3.5 MappedCondition

| Field Name | Mandatory? | Definition | Example | Data Type | Vocabulary shared with web data service |
|--------------------|------------|--|---------|-----------|---|
| conditionIntegrity | No | The general vegetation condition score assigned to a vegetation zone (at a sub-PCT level) representing an area of PCT with a relatively homogeneous vegetation condition. [The definitions for the condition scores are to be determined, and will be included in future iterations of this standard] | '100' | SMALLINT | none |

References

- Keith DA. 2004, *Ocean Shores to Desert Dunes: the Native Vegetation of New South Wales and the ACT*, Department of Environment and Conservation.
- Mas JF, Pérez-Vega A, Ghilardi A, Martínez S, Octavio Loya-Carrillo J, and Vega E 2014, A Suite of Tools for Assessing Thematic Map Accuracy, *Geography Journal*, 2014, Article ID 372349, pp.10 <http://dx.doi.org/10.1155/2014/372349>
- The National Committee on Soils and Terrain 2009, *Australian Soil and Land Survey Field Handbook*, Third Edition, CSIRO Publishing, Collingwood, VIC.
- Sivertsen D 2009, *Native Vegetation Interim Type Standard*, Department of Environment, Climate Change and Water NSW, Sydney.
<http://www.environment.nsw.gov.au/resources/nativeveg/10060nvinttypestand.pdf>
- Stehman SV and Czaplewski RL 1998, Design and analysis for thematic map accuracy assessment: fundamental principles, *Remote Sensing of Environment* 64, pp.331–344.