

Statewide wetland geospatial inventory update

Factsheet 6: Method to classify dominant vegetation

Purpose

This Factsheet describes the method used to classify dominant vegetation.

Intent of the classification

The new Victorian Wetland Classification Framework adopts nine categories of dominant vegetation:

Forest/Woodland	Applicable for lacustrine or palustrine systems
Shrub	Applicable for lacustrine or palustrine systems
Sedge/grass/forb	Applicable for lacustrine or palustrine systems
Fern	Applicable for lacustrine or palustrine systems
Moss/heath	Applicable for lacustrine or palustrine systems
Mangrove	Applicable for marine or estuarine systems
Coastal saltmarsh	Applicable for marine or estuarine systems
Seagrass	Applicable for marine or estuarine systems
No emergent vegetation	Applicable for all wetland systems

Data sources

The dominant vegetation classification approach utilised multiple lines of evidence to classify the most likely dominant vegetation, based on three relatively independent data sources:

Dataset name	Dataset description / link
Wetland 1994	Classification of wetland type assigned during the Wetland 1994 mapping and any subsequent refinement commissioned by CMAs
IWC EVC	Database describing the EVCs at sites assessed by the Index of Wetland Condition (IWC) in Victoria (unpublished)
Modelled 2005 EVC	Polygon features delineating native vegetation type across Victoria, modelled in 2005 using Ecological Vegetation Classes (EVCs) http://www.giconnections.vic.gov.au/content/vicgdd/record/ANZVI0803003495.htm

Method

The first source of data used in the classification of dominant vegetation was from the Index of Wetland Condition assessments undertaken at approximately 1,000 wetlands across Victoria. The vegetation assessment information at each IWC site was used to classify the site into one of six dominant vegetation types:

- Forest/Woodland
- Shrub
- Sedge/grass/forb
- Moss/Heath
- No emergent vegetation
- Not applicable

These dominant vegetation categories were applied to all applicable (IWC) wetlands. The IWC derived dominant vegetation information was considered to have the highest confidence.

The second source of data was the Corrick class features derived from Wetland 1994. For these features, dominant vegetation was assigned as follows:

Forest/Woodland	▪ All wetlands with a Corrick sub-category of 'Red gum dominated'
Shrub	▪ All wetlands with a Corrick sub-category of 'Lignum dominated' or 'Shrub dominated'
Sedge/grass/forb	▪ All wetlands with a Corrick sub-category of 'Herb dominated', 'Sedge dominated', 'Reed dominated', 'Rush dominated', 'Cane grass dominated', or 'Salt meadow' ▪ All wetlands with a Corrick sub-category of 'Sea rush dominated' and a wetland system of lacustrine/palustrine ▪ All wetlands with a Corrick category of 'Flooded river flats' or 'Freshwater meadow' that have no Corrick sub-category information.
Sea grass	▪ All wetlands with a Corrick sub-category of 'Sea rush dominated' and a wetland system of estuarine/marine
No emergent vegetation	▪ All wetlands with a Corrick sub-category of 'open water', 'impoundment', 'shallow (permanent freshwater)', 'deep (permanent freshwater or saline)', 'salt pan', 'salt lake' or 'hypersaline lake' ▪ All wetlands with a Corrick category of 'Sewage oxidation basin' or 'Salt evaporation basin'

In the third step, the vegetation information from the Modelled 2005 EVC spatial dataset was used to assign dominant vegetation types to individual wetlands. Initially a list categorising approximately 140 EVCs into one of the nine dominant vegetation types was used. A further 410 EVCs were then categorised into one of the dominant vegetation types based on the following rules:

Forest/Woodland	▪ EVC name includes the text 'forest', 'woodland', 'red gum', 'black box' or 'savannah' ▪ EVC name is Ridged Plains Mallee, Swampy Riparian Complex, Chenopod Mallee, Drainage-line Aggregate, Woorinen Mallee, or Parilla Mallee
Shrub	▪ EVC name includes the text 'heathland', 'scrub', 'shrub', 'thicket' or 'lignum' ▪ EVC name is Woorinen Sands Mallee, Lowan Sands Mallee, Heathy Mallee, Loamy Sands Mallee, or Red Swale Mallee
Sedge/grass/forb	▪ EVC name includes the text 'herb', 'sedge', 'grass', 'marsh' or 'inland saltmarsh' ▪ EVC name is Sub-alpine Treeless Vegetation, Wetland Formation, Reed Swamp, Brackish Drainage-line Aggregate, Freshwater Meadow, or Floodplain Reedbed
No emergent vegetation	▪ EVC name is Coastal Landfill/Sand Accretion, Sandy Beach, Rocky Shore, Water body – salt, Water Body – Fresh, Bare Rock/Ground, Dunes, Alpine Crag Complex, or Water Body - estuary

A spatial overlay analysis between Wetland 2013 features and the Modelled 2005 EVC was then used to assign the dominant vegetation class of EVCs to each wetland, using the following rules:

- Where a given wetland has 55% or greater of its area comprised of a single dominant vegetation class, assign that dominant vegetation class.
- Where a given wetland has less than 55% of its area comprised of a single dominant vegetation class, then assign the dominant vegetation class as follows:
 - If a single dominant vegetation class has a much larger coverage across the wetland than any other class, apply that single dominant vegetation class
 - If there are two or three classes with similar levels of coverage, apply the vegetation class of the higher structural order (e.g. Forest / Woodland in preference to shrub, shrub in preference to sedge/grass/forb)
 - If there are more than three classes with similar levels of coverage, describe the wetland as having 'no dominant class'.

Having identified the dominant vegetation class using three independent methods (i.e. interpretation of the Corrick class and two EVC datasets), these results were synthesised to provide a final dominant vegetation classification for each wetland. The final classification:

- Classified all features from the alpine mapping as Moss/Heath – these wetlands were assigned a high degree of confidence for the dominant vegetation classification.
- Adopted the dominant vegetation inferred from the Corrick classification in Wetland 1994 in preference to both EVC data sources – these wetlands were assigned a high degree of confidence for the dominant vegetation classification.

- Adopted the dominant vegetation inferred from IWC EVC data in preference to Modelled 2005 EVC data – these wetlands were assigned a high degree of confidence where a single vegetation class dominated the wetland, but a moderate degree of confidence when there were multiple vegetation classes of similar coverage.
- Adopted the Modelled 2005 EVC data for wetlands that had no other available data – these wetlands were assigned a moderate degree of confidence for the dominant vegetation classification.
- Ensured consistency with the wetland system classification, by ensuring that estuarine/marine wetlands were not assigned dominant vegetation type of palustrine/lacustrine wetlands and vice versa. In instances where the dominant vegetation type assigned through this process was amended the wetland was assigned a low degree of confidence for the dominant vegetation classification. In the few instances where the predicted dominant vegetation type contradicted the wetland system classification, the dominant vegetation type was assigned to unknown.

An example of the last dot point is shown below, examining the Thurra River Inlet (wetland 97805). This estuarine system was initially classified as having a forest/woodland dominant vegetation class because the modelled 2005 EVC spatial dataset suggesting that 90% of the wetland was covered by forest/woodland EVCs (i.e. Riparian Forest, Coast Banksia Woodland and Coastal Vine-rich Forest). However, the modelled 2005 EVC spatial data does not accurately delineate the extent of forest/woodland at the necessary scale in this specific area.



Aerial image of the Thurra River Inlet, showing mapped vegetation types in the modelled 2005 EVC spatial data

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