Perth Biodiversity Project

2010 Vegetation complex dataset for Perth and Peel

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Metadata Statement – 2010 Vegetation Complex dataset for Perth and Peel Scheme Regions
Perth Biodiversity Project –
1 Background

In 2009, the Perth Biodiversity Project received funding to develop a Regional Framework for Local Biodiversity Conservation Priorities for the Perth and Peel Scheme Region, including a spatial plan. The purpose of the Regional Framework is to inform land use planning and provide for adequate consideration of local biodiversity conservation issues.

The Regional Framework consists of several components:
- Conservation significance criteria supported by spatial datasets (3 levels)
- Updated dataset on native vegetation extent by vegetation complexes and their level of protection
- Datasets based on Local Biodiversity Strategies

One of the key criteria for determining the conservation significance of natural areas is the representativeness of ecological communities and ensuring that they are maintained above or at accepted threshold levels (EPA, 2008). Vegetation complex mapping is used as a surrogate for ecological communities in the south west of Western Australia.

2 Remnant Vegetation Extent by Vegetation Complex

This dataset categorises remnant vegetation extent according to vegetation complexes. For the Perth and Peel Scheme Regions vegetation complexes represent the most appropriate level to interpret ecological communities for establishing assessments of representation levels based on area.

These vegetation complexes are based on the patterning of vegetation at a regional scale reflected by the underlying key determining factors of landform, soil and climate. The Perth and Peel Scheme Regions are covered by two sets of vegetation complex mapping:
- Vegetation complex mapping by Heddle et al (1980)

While the extent of the above datasets does not cover the extent of the biogeographical regions (Interim Biogeographical Regionalisation of Australia 6.1, 2010) within which Perth and Peel Regions occur, the above listed vegetation complex datasets are the most appropriate datasets available.

To determine the representation levels of vegetation complexes across a study area, pre-European extent and current extent of vegetation complexes is assessed at two levels:
1. At the biogeographical region level (IBRA regions)
2. At the study area level (Perth and Peel Region Schemes areas).

Perth and Peel Regions are spread over two IBRA regions; the Swan Coastal Plan and Jarrah Forest. Jarrah Forest IBRA region can be divided into two subregions: Northern Jarrah Forest and Southern Jarrah Forest. Perth and Peel Regions extend only to the Northern Jarrah Forest IBRA sub-region.

There are 27 and 18 vegetation complexes represented within the Swan Coastal Plain and Jarrah Forest portions of the Perth and Peel Scheme Regions.

Some areas mapped as remnant vegetation are outside the extent of vegetation complex mapping used. These areas are identified as ‘Remnant vegetation outside vegetation complex mapping’ and are quantified in tables listing vegetation extent by administrative planning categories.
3 Remnant Vegetation Extent by Administrative Planning Categories

This dataset provides a broad overview of the different themes of remnant vegetation according to existing administrative planning and protection categories. Importantly this dataset quantifies the spatial extent of vegetated Local Natural Areas because it is Local Natural Areas that will be the major focus of Local Governments biodiversity strategies and the Regional Framework. Local Natural Areas are all natural areas outside the DEC conservation estate, State Forest and Bush Forever Sites (del Marco et al, 2004).

4 Remnant Vegetation Extent by Land Use Categories

This dataset was derived from 2010 remnant vegetation extent by vegetation complexes and by Metropolitan Region Scheme and Peel Region Scheme land use categories (zones and reserves). The derived table shows an area in hectares of remnant vegetation by vegetation complexes according to Metropolitan Region Scheme and Peel Region Scheme zoning current as in August 2011.

5 Spatial Extent of the Data

Vegetation complex mapping covers the extent of the vegetation complex mapping by Heddle et al (1980) and Mattiske and Havel (1998). The two vegetation complex mapping datasets overlap and as such the Perth Biodiversity Project team undertook a process to join the two datasets along appropriate complexes so as to create one vegetation complex mapping layer. This is further explained in the metadata statement following.

Figure 1 shows the extent of vegetation complex mapping, IBRA regions and the Perth and Peel Scheme Regions.
Figure 1: Regional Framework for Local Biodiversity Conservation Priorities in Perth and Peel (RFLBC) study area, IBRA sub-regions and the extent of vegetation complex mapping covering the study area.
5 Contacts

Any questions or queries relating to the maps provided or intended future instalments of mapping and information can be directed to:

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6 Bibliography


7 Metadata

7.1 2010 Remnant Vegetation Extent by Vegetation Complex

Dataset Title: Native Vegetation Extent by Vegetation Complex
Filename: (Veg_by_complex_full_extent.shp)

Custodian: Western Australian Local Government Association (Perth Biodiversity Project)
Contact: Renata Zelinova
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Description: This dataset categorises remnant vegetation extent according to vegetation complexes, as mapped in the Jarrah Forest by Mattiske and Havel (1998) and on the Swan Coastal Plain by Heddle et al. (2002)

Data Creation: This dataset was derived by intersecting the 2010 remnant vegetation dataset (DAFWA, 2010) with Pre1750 Vegetation Complexes and further removing areas identified as plantations in the FPC Annual Report (2010). The vegetation complexes used are by Mattiske and Havel for the Regional Forest Agreement (CALM, February 2003) and Vegetation complex types and geomorphology captured by Heddle, E. M., Loneragan, O. W., and Havel, J. J. (DEP, 2002).

All areas mapped as plantation in the DEC's Annual Report (2010) dataset have been removed from the remnant vegetation extent.

Coast definition based on the coastal line provided by Geoscience as this is used to define the IBRA regions.

Changes to the dataset:

The northern extent of the vegetation complex mapping does not include the portion mapped by Heddle et all (2002) north of Moore River.

The two vegetation complex datasets overlap and in some instances different vegetation types are assigned to the same area.

As a general principle, vegetation complexes mapped by Heddle et al (2002) on the Swan Coastal Plain form the eastern boundary of the Swan Coastal Plain.

Figure 2 below demonstrates the implications on an example of Wannamal and Cullula vegetation complexes. The extent of Wannamal vegetation complex as mapped by Mattiske and Havel (1998) (black hatching) overlaps Heddle’s Cullula (in yellow). The area of the overlap is 2654.69ha and has been allocated as Cullula. When the pre-European extent for Cullula and Wannamal following this change to the dataset are compared with figures published in the EPA's Guidance statement No 10 (2003), the areas are comparable.
Heddle’s vegetation complex mapping does not extend to the whole length of the Swan Coastal Plain south of Bunbury. Various vegetation complexes mapped within Quindalup Dune systems by Mattiske and Havel (1998) were added to those complexes mapped by Heddle using the following formula:

- Od and Qu were added to Quindalup complex
- Qwy were added to Vasse
- Abba vegetation complex consists of all Abba type complexes mapped.

Remnant vegetation outside vegetation complex mapping is marked as ‘remnant vegetation outside vegetation complex mapping’. This is mostly occurring along the coast, estuaries and watercourses.
Data Currency: February 2011
Spatial Extent: South of Moore River covering the extent of Heddle (1980) and Mattiske and Havel (1998) mapping. (See Figure 1)
Datum: Geocentric Datum of Australia (GDA)
Grid Coordinates: Map Grid of Australia 1994 (MGA94)
UTM Zone: 50
Available Formats: Arc View Shape files.
Polygon Attributes
SOURCE: Source from which vegetation complex was derived
  • HEDDLE - Vegetation complex types and geomorphology captured by Heddle, E. M., Loneragan, O. W., and Havel, J. J. (DEP, 2002)
  • RFA - Pre1750 Vegetation Complexes - Complete Coverage captured by Mattiske and Havel for the Regional Forest Agreement (CALM, February 2003),
COMP: Vegetation Complex (assigned to an area in the joint dataset)
7.2 2010 Remnant Vegetation Extent by Administrative Planning Categories

Dataset Title: Native Vegetation Extent by Administrative Planning Category
File Name: (APC3.shp)

Custodian: Western Australian Local Government Association (Perth Biodiversity Project)
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Description: Provides a broad overview of the different themes (eg Bush Forever, Local Natural Areas etc) of native vegetation according to existing administrative planning categories relevant to biodiversity protection and management in the Perth and Peel Region Scheme areas.

Data Creation: This dataset was derived by combining the 2010 Remnant vegetation extent after removing areas identified as plantations in the FPC Annual Report (2010):
- DEC Managed Lands and Waters (DEC, 2010),
- Bush Forever 2009 – Site boundaries (Department of Planning, 2009),
- Regional Parks – Regional Park Boundaries (DEC, 2010)
- Swan Bioplan Peel Regionally Significant Areas (OEPA, 2011)

Data Currency: February 2011
Spatial Extent: Western Australia
Datum: Geocentric Datum of Australia (GDA)
Grid Coordinates: Map Grid of Australia 1994 (MGA94)
UTM Zone: 50
Available Formats: Arc View Shape files.

Polygon Attributes
THEME: Remnant Vegetation Extent by Administrative Planning Category:
- BF – remnant vegetation contained within Bush Forever sites excluding that native vegetation categorised as BREG, DECSFBF;
- BFDECON – remnant vegetation in a Bush Forever site within DEC’s conservation estate defined as: National Parks, Nature Reserves, Conservation parks, 5 (g) Reserves;
- BFDECONREG – remnant vegetation in a Bush Forever site classified as a Regional Park within DEC’s conservation estate defined as: National Parks, Nature Reserves, Conservation parks, 5 (g) Reserves;
- BFDECOOTH – remnant vegetation in a Bush Forever site within a DEC estate that has not been recognised in any of the above categories.
- BFDECSF – remnant vegetation in a Bush Forever site within a State Forest
- BFREG – remnant vegetation contained within Bush Forever Sites that also exist within the Regional Parks;
- DECON – remnant vegetation within DEC’s conservation estate defined as: National Parks, Nature Reserves, Conservation parks, 5 (g) Reserves;
- DECONREG – remnant vegetation in a Regional Park within DEC’s conservation estate defined as: National Parks, Nature Reserves, Conservation parks, 5 (g) Reserves;
- DECSF – remnant vegetation in State Forest;
- DECOOTH – remnant vegetation in DEC estate that has not been recognised in any of the above categories.
• REG – Native Vegetation that exists within Regional Parks that has not been recognised in any of the above categories.
• LNA – Local Natural Areas being native vegetation areas not within CALM estate (CALM and CALMREG), Bush Forever (BF and BFREG) sites or Regional Parks (REG).