METADATA

Spatial Layer of Probable Vegetation Groundwater Dependent Ecosystems in NSW

File Geodatabase Feature Class

Tags

Groundwater dependent ecosystems, vegetation, groundwater, remote sensing

Summary

This dataset has been created to provide indicative locations of probable vegetation groundwater dependent ecosystems (GDEs) in NSW.

Description

The purpose of this project is to create a data set that identifies vegetation communities that have a probability of being a groundwater dependent ecosystem within NSW. Probability categories are high, medium, low and non GDE.

The data is required to meet legislative requirements for water sharing plans and water resource plans. This is a base data layer that can be used to aid research projects, assessment of state significant development applications, licence applications and compliance issues.

For ease of data modelling and management, the dataset was divided into the following catchment management areas; Border Rivers-Gwydir, Central West, Lachlan, Lower Murray Darling, Murray Murrumbidgee, Namoi, Western Division – Far West, Western Division, Murray Darling Basin, Sydney Metro, Southern Rivers – Sydney Basin, Southern Rivers – South East Highlands, Southern Rivers – South East, Northern Rivers, Hunter-Central Rivers, Hawkesbury Nepean, Central Tablelands.

Method report is available via the DPE Water website - https://www.dpie.nsw.gov.au/__data/assets/pdf_file/0010/151894/High-Probability-GDE-method-report.pdf

Credits

Jodie Dabovic, Glenn Byrne, Lucy Dobbs, Allan Raine, and DPE Environment and Heritage

Use limitations

This data is to be used as a general guide for regional and local scale natural resource planning and management only, not for the assessment of specific sites

which can only be assessed by investigation specific to those sites. The main constraint to the use of the data is the scale and accuracy of the various data sets that were used in the spatial model. Users should be aware that the GDE data was derived from data at a range of dates, scales and reliabilities. The field information contained on this map may not be verified or complete. This data is published by the DPE Water. While every reasonable effort has been made to ensure the accuracy of the information contained in the map, you should satisfy yourself as to the accuracy of the information before relying on it. The State of New South Wales, its agents and employees, disclaim any and all liability to any person in respect of anything or the consequences of anything done or omitted to be done in reliance upon the whole or any part of this data. Data sources: DPE Water and DPE Environment and Heritage.

Lineage statement

Probability of being groundwater dependent was determined for each vegetation plant community type. This was determined by using decision rules and the following data sources to obtain probability categories (GDE_probability).

1 - High
2 - Moderate
3 - Low
4 - NonGDE

Process step

Decision rule matrices were generated to identify outcomes for the different attribute combination possibilities for the datasets. This information was then used to populate fields generated in the 'Probability of Being a GDE' model.

The 'Probability of Being a GDE' model was then run. This model combined the datasets maintaining the attributes from all the data.

Data sources:

- Vegetation data (PCT_ID; PCT_Name) from DPE Environment and Heritage primarily at a scale of 1:25000 generated from imagery
- Depth to groundwater data (GW_Dpeth Category) – observed measurements from DPE Water monitoring bores (west of the great dividing range) and modelled at a scale of 1: 50000 with a number of better scaled inserts (east of the great dividing range) converted from raster to vector polygons.
  - 5 categories: 1(0-8m), 2 (8-12m), 3 (12-16m), 4 (16-20m) and 5 (>20m).
- Remote sensing (Remote_Sensing_category) - MODIS modelled data set showing 'potential frequency of water use other than surface water based on a continuous 10 year period (2000-2009) at a scale of 1:250000 converted from raster to vector polygons. This data identified the potential frequency of

groundwater use i.e. number of years in a 10 year period that the vegetation accessed groundwater.

- o Remote sensing categories: 1, 2, 3 and 4 (considered low probability); 5, 6, 7 and 8 (considered moderate possibility); 9 and 10 (considered to be high probability); and 11(localities not covered).

Additional fields were added and populated. Fields added were;

GDE_Type – type of ecosystem either Terrestrial, Wetland or na.

Veg_Structure – structure of the ecosystem i.e. shrubland, heathland, grassland, wetland forest, freshwater wetland, bogs & fens or wetland/forests

WoodyNon woody – woody or non woody vegetation

Level1 - probability of groundwater use

Result based on decision rule matrices and a 'union' of GW_Dpeth Category, Remote_Sensing_category and vegetation data.

Output categories: 1 (high probability of groundwater use), 2 (moderate probability), 3 (low probability), 4 (alternative water source), and 99 (no native vegetation class).

Level2 - probability of groundwater use

This result is based on expert opinion. It relied on the expertise of Dr Jodie Dabovic and Allan Raine and a literature review to determine which vegetation communities should be considered 1 – high, 2 – moderate or 3 – low probability of groundwater use. The model then classified the vegetation communities (plant community types) accordingly. Level2 was considered necessary because of the scale difference between each data set.

Level3 - probability of groundwater use

Using a number of algorithms the model combined the results of levels 1 and 2 to produce level3. Level3 is the final result indicating the probability of groundwater use by vegetation.

Results are given as a 1 to 4 categories: 1 – high probability of groundwater use; 2 – moderate probability of groundwater use; 3 – low probability of groundwater use; 4 – Non GDE potentially alternative source of water; 99 non GDE (no native vegetation class).

Level3a - this field deals with anomalies that the model generated while creating level3 and reassessed them before reclassifying them.

Level3d - these are known GDEs and classified as 1 - High, despite what the model may have previously determined.

Process Contact/Distribution Contact

Individual's name - Dr Jodie Dabovic

Organization name – DPE Water

Contact's Position – Water Scientist

Contact's role – Project manager and technical input

Contact Information

Phone

Voice

Fax

Address

Type postal

Delivery point Locked Bag 5022

City Parramatta

Administration area NSW

Postal code 2124

Country AU

Email address jodie.dabovic@dpie.nsw.gov.au