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|---|---|
| Title | Vegetation of the Gwydir Wetlands 2022 |
| Abstract | This is a vegetation map of the Gwydir wetlands. It was produced using air photo interpretation from high resolution 40cm ADS40 aerial imagery collected in August 2022, and high resolution 15cm aerial imagery collected in January 2023.<br><br>This mapping project was funded by the NSW Water for the Environment Program, and the Gwydir Reconnecting Watercourse Country Program. |

## Resource locator

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|---|---|
| Data Quality Statement | Name: Data Quality Statement<br><br>Protocol: WWW:DOWNLOAD-1.0-http--download<br><br>Description:<br><br>Data quality statement for Vegetation of the Gwydir Wetlands 2022<br><br>Function: download |
| Download Package | Name: Download Package<br><br>Protocol: WWW:DOWNLOAD-1.0-http--download<br><br>Description:<br><br>Data (Shapefile)<br><br>Function: download |

## Unique resource identifier

| | |
|---|---|
| Code | 3b6ddd44-0ad9-417d-84b5-33bbc4ff755f |

| | |
|---|---|
| Presentation form | Document digital |
| Edition | Version 1 June 2024 |
| Dataset language | English |

## Metadata standard

| | |
|---|---|
| Name | ISO 19115 |
| Edition | 2016 |
| Dataset URI | https://datasets.seed.nsw.gov.au/dataset/3b6ddd44-0ad9-417d-84b5-33bbc4ff755f |
| Purpose | Monitoring of wetland health, and environmental water planning (Long Term Watering Plans) |
| Status | Completed |

## Spatial representation

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|---|---|
| Type | vector |

## Spatial reference system

| | |
|---|---|
| Code identifying the spatial reference system | 4283 |

| | |
|---|---|
| Equivalent scale | 1:None |
| Additional information source | This dataset is produced from aerial imagery collected in August 2022 and from 05 to 12 May 2023. |
| Topic category | |

## Keyword set

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|---|---|
| keyword value | WATER-Wetlands<br>VEGETATION |
| Originating controlled vocabulary | |
| Title | ANZLIC Search Words |
| Reference date | 2008-05-16 |

## Geographic location

| | |
|---|---|
| West bounding longitude | 148.560791 |
| East bounding longitude | 149.796753 |
| North bounding latitude | -29.691532 |
| South bounding latitude | -29.304264 |
| NSW Place Name | Gwydir wetlands |

## 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 | 2022-01-08 |
| End position | N/A |

## Dataset reference date

## Resource maintenance

| | |
|---|---|
| Maintenance and update frequency | Not planned |
| Contact info | |
| Contact position | Data Broker |
| Organisation name | NSW Department of Climate Change, Energy, the Environment and Water |
| Telephone number | 131555 |
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| Web address | https://www.nsw.gov.au/departments-and-agencies/dcceew |
| Responsible party role | pointOfContact |

## Lineage

This is a vegetation map of the Gwydir wetlands. It was produced using air photo interpretation from high resolution 40cm ADS40 aerial imagery collected in August 2022, and high resolution 15cm aerial imagery collected in January 2023.

Map development began with the collection of high-resolution aerial colour (Red-Green-Blue) imagery. The imagery was provided as an orthomosaic (ie a straight down view) with a 40 cm ground sampling distance covering the whole study area at each wetland. This formed the primary input of information for vegetation extent mapping. This aerial imagery was acquired in August 2022 for the Gwydir Wetlands. In addition, 15 cm high-resolution colour (RGB) imagery, collected by Woolpert between 12th January and 9th May 2023, was also sourced from the Gwydir Reconnecting Watercourse Program and provided as an orthomosaic. This additional imagery helped inform the aerial interpretation of vegetation community extents for an eastern portion of the Gwydir Wetlands study area.

Several interpreters were then trained in Aerial Photographic Interpretation (API) to visually analyse the imagery to identify and delineate different vegetation types. The vegetation types were identified based on their spectral characteristics, colour, texture, shape, spatial patterns and associations with predictive environmental layers (such as flood frequency categories, elevation and geomorphology type).

Existing survey data was also used to help identify vegetation types from imagery. This included BioNet species data, floristic data and other grey literature. Oblique aerial handheld photos captured from a helicopter were also sourced from another project to inform the aerial imagery interpretation. A subset of the available oblique handheld photos was selected to correspond to the timing (within two years) of the 40cm aerial imagery acquired for vegetation map development. The subset of oblique handheld photos adopted to inform the air photo interpretation included photos collected over the study area between January-December 2022.

A polygon layer divided into small regions was sourced to overlay on the 40cm aerial imagery. This segmentation spatial layer was produced using the Definiens eCognition software package and the methods developed by Roff et al (2022). A computer-based image analysis tool was applied to a set of raster datasets with a 5m grid cell size. This produced a spatial layer of ‘segments’ or very small polygons based on the combined spectral and textural features of the input rasters.

The segmented layer was overlayed on the 40cm aerial imagery. Interpreters then manually selected groups of segments and assigned classes (‘attributes’) to the polygons to delineate vegetation patterns. The use of the segmented spatial layer enabled more efficient mapping, as interpreters did not have to manually draw polygon linework with a mouse.

Vegetation patterns were interpreted from the high-resolution 40cm aerial imagery at a scale of 1:25 000 for non-flood dependent vegetation and at a scale of 1:10 000 for wetland communities. The minimum map unit (smallest polygon) was 2 ha.

Selected polygons from the segmentation process were initially assigned to an artificial class referred to as a Vegetation Photo Pattern (VPP), analogous to NSW Vegetation Classes (for more information on NSW Vegetation Classes see https://www.environment.nsw.gov.au/topics/animals-and-plants/biodiversity/nsw-bionet/the-nsw-vegetation-classification-framework ).

The VPPs were then aligned with plant community types (PCTs) as described in the NSW BioNet Vegetation Classification Database (see https://vegetation.bionet.nsw.gov.au/).

Each PCT was also aligned to a vegetation functional group corresponding to the vegetation objectives in the Gwydir Long-term Water Plan (LTWP).

The accuracy of the map vegetation functional groups was assessed using 780 independently collected field validation points. The overall accuracy was 0.77 and the Kappa statistic was 0.7.

Accuracies and 95% confidence intervals for individual map classes (wetland vegetation functional groups) were:

Non woody wetland: 0.80 (0.73-0.87)

Flood dependent woodland 0.81 (0.76-0.86)

River red gum forest: 0.77 (0.68-0.86)

River red gum woodland: no field data, not assessed.

Flood-dependent shrublands 0.72 (0.62-0.81)

Terrestrial vegetation: 0.68 (0.62-0.75)

Non-native or other (includes pasture, cropping, infrastructure, dams): 0.89 (0.81-0.98)

This mapping project was funded by the NSW Water for the Environment Program, and the Gwydir Reconnecting Watercourse Country Program.

The segmentation dataset was provided by DCCEEW, for further details on this dataset and method see:

Roff A, Day M, Thonell J and Denholm B (2022) NSW State Vegetation Type Map: Technical Notes, NSW Department of Planning and Environment, Parramatta, Australia.

Limitations on public access

## Responsible party

| | |
|---|---|
| Contact position | Data Broker |
| Organisation name | NSW Department of Climate Change, Energy, the Environment and Water |
| Telephone number | 131555 |
| Email address | data.broker@environment.nsw.gov.au |
| Web address | https://www.nsw.gov.au/departments-and-agencies/dcceew |
| Responsible party role | pointOfContact |

## Metadata point of contact

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## Metadata date

2024-12-11T20:27:56.277214

## Metadata language