Title

Land and Soil Capability Mapping for NSW

Abstract

This Land and Soil Capability (LSC) dataset uses the best available soils natural resource mapping across New South Wales. It provides a broad-scale, regional view as to the dominant LSC class present for over 3000 individual mapping units through the assessment of eight key soil and landscape limitations (water erosion, wind erosion, salinity, topsoil acidification, shallow soils/rockiness, soil structure decline, waterlogging and mass movement).

The assessment of LSC is based on the mapping method and rule set developed by OEH (2012). It builds on the rural land capability classification and mapping undertaken for the central and eastern divisions of the state by the former Soil Conservation Service of NSW (Emery 1986) but with more emphasis on a broader range of soil and landscape properties.

The mapping is based on an eight class system with values ranging between 1 and 8 which represent a decreasing capability of the land to sustain landuse. Class 1 represents land capable of sustaining most landuses including those that have a high impact on the soil (e.g., regular cultivation), whilst class 8 represents land that can only sustain very low impact landuses (e.g., nature conservation). Information about the LSC ruleset called the Land and Soil Capability Assessment Scheme: Second Approximation can be downloaded from the DPIE website or from this Resource's page in SEED.

Online Maps: This dataset can be viewed using <u>eSPADE</u> (NSW's soil spatial viewer), which contains a suite of soil and landscape information including soil profile data. Many of these datasets have hot-linked soil reports. An alternative viewer is the <u>SEED Map</u>; an ideal way to see what other natural resources datasets (e.g. vegetation) are available for this map area.

Reference: Department of Planning, Industry and Environment, 2021, *Land and Soil Capability Mapping for NSW, Version 4.5*, NSW Department of Planning, Industry and Environment, Parramatta.

Resource locator

Show on SEED Web Map

Name: Show on SEED Web Map

Protocol: WWW:DOWNLOAD-1.0-http--download

Description:

Display dataset on SEED's map

Function: download

Data quality statement

Name: Data quality statement

Protocol: WWW:DOWNLOAD-1.0-http--download

Description:

DQS - Land and Soil Capability Mapping for NSW

Function: download

Show on eSPADE Web Map Name: Show on eSPADE Web Map

Protocol: WWW:DOWNLOAD-1.0-http--download

Description:

View dataset on eSPADE spatial viewer.

Function: download

Land and Soil Capability data package Name: Land and Soil Capability data package

Protocol: WWW:DOWNLOAD-1.0-http--download

Description:

Download package: shapefiles, ESRI layer files, ruleset and metadata documents.

Function: download

LSC ruleset Name: I

Name: LSC ruleset document

<u>document</u> Description: Download the Land and Soil Capability (LSC) Assessment Scheme. Function: download Name: ArcGIS REST Map Services **ArcGIS REST Map Services** Protocol: WWW:DOWNLOAD-1.0-http--download Description: Connect to REST map services using ArcGIS or ArcGIS online map viewer. Function: download Land and soil Name: Land and soil information web page information Protocol: WWW:DOWNLOAD-1.0-http--download web page Description: About land and soil information in NSW - DPIE's data systems and map products. Function: download **DPIE's Land** Name: DPIE's Land and soil website and soil Protocol: WWW:DOWNLOAD-1.0-http--download website Description: Soil information, mapping & management; land degradation & geodiversity. Function: download Name: Web Map Service (WMS) Web Map Service (WMS) Protocol: WWW:DOWNLOAD-1.0-http--download Description: Connect to WMS using your GIS. Function: download Name: KML Service **KML Service** Protocol: WWW:DOWNLOAD-1.0-http--download Description: Download KML for use in Google Earth. Function: download Name: Web Map Tile Service (WMTS) Web Map Tile **Service** Protocol: WWW:DOWNLOAD-1.0-http--download (WMTS) Description: Connect to WMTS using your GIS. Function: download Unique resource identifier Code 97fb7a2d-1ce1-4e41-ad4d-b84154bea038 Presentation Map digital form

Edition

4.5

Protocol: WWW:DOWNLOAD-1.0-http--download

Dataset language	English
Metadata standard	
Name	ISO 19115
Edition	2016
Dataset URI	https://datasets.seed.nsw.gov.au/dataset/97fb7a2d-1ce1-4e41-ad4d-b84154bea038
Purpose	Support natural resource management and decision making. The dataset was created to assist meeting Soil Condition and Land Management theme targets for the Monitoring, Evaluation and Reporting program. It is one of the primary datasets used to create the regional Biophysical Strategic Agricultural Land (BSAL) maps under the NSW Government's Strategic Regional Land Use Policy.
Status	Completed
Spatial representation	
Туре	vector
Geometric Object Type	surface
Geometric Object Count	98726
Spatial reference system	
Code identifying the spatial reference system	4283
Equivalent scale	1:None
Additional information source	Version changes Improvements incorporated into version 4.5 include:
	 Minor adjustments to linework and attributes for the Hunter Region (version 2)
	 Updated linework and attributes for Camden Haven 1:100,000 map sheet area
	 Minor changes to spelling of some GSG names in the attribute table.
	 Minor linework edge-matching in North Coast area along with small fixups to linework and associated attributes across NSW.
	GIS Field name descriptions
	LSC_MstLmt - LSC Overall most limiting class from the eight limitations assessed under the classification.
	LSC_Acid - LSC soil acidification hazard
	LSC_WatrEr - LSC water erosion hazard
	SC_StrD - LSC Structure Decline hazard
	LSC_WindEr - LSC Wind erosion hazard
	LSC_Sh_Rk - LSC shallow soils and rockiness hazard
	LSC_Sal - LSC Salinity hazard
	LSC_Mass_m - LSC Mass movement hazard
	LSC_Watlog - LSC Waterlogging hazard

Label - Labelling field for the overall most limiting LSC class Version - Version number of linework product. VersDate - Version date of completion MstLmt Dsc - LSC class description of the overall most limiting hazard **Topic category** Keyword set keyword value **AGRICULTURE HAZARDS HAZARDS-Flood HAZARDS-Landslip** LAND-Topography **SOIL SOIL-Erosion** Originating controlled vocabulary Title **ANZLIC Search Words** Reference date 2008-05-16 **Geographic location** West bounding longitude 141.001 East bounding longitude 153.668 North bounding latitude -37.507 South bounding latitude -27.998 **NSW Place Name** NSW Vertical extent information Minimum value -100 Maximum value 2228 Coordinate reference system Authority code urn:ogc:def:cs:EPSG:: Code identifying the coordinate reference 5711 system Temporal extent Begin position 2008-08-01 End position N/A Dataset reference date Resource maintenance Maintenance and update frequency As needed Contact info

Contact position Data Broker

NSW Department of Climate Change, Energy, the Environment and Water Organisation name

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

Lineage

The best available soils datasets were sourced to provide a single (seamless where possible) layer across NSW. Datasets collated to derive this map included:

- * published and draft 1:100,000 soil landscape mapping [1:100,000 scale]
 - published and draft 1:250,000 soil landscape mapping [1:250,000 scale]
 - Soil and Land Resources of the Hawkesbury Nepean Catchment [1:100,000 scale]
 - Soil and Land Resources of the Liverpool Plains Catchment [1:100,000 scale]
 - Soil and Land Resources of the Merriwa Plateau [1:100,000 scale]
 - Soil and Land Resources of the Moree Plains [1:100,000 scale]
 - Soil and Land Resources of the Hunter Region [1:100,000 scale]
 - Reconnaissance Soil and Land Resources of the Murray CMA Catchment [1:100,000 & 1:250.000 scale]
 - Soil Landscapes of the SCA Hydrological Catchments [1:100,000 scale]
 - Soils landscapes of the Comprehensive Coastal Assessment (Bare Point, Jervis Bay, Batemans Bay and Ulladulla) [1:100,000 scale]
 - Southern Comprehensive Regional Assessment [1:100,000 scale]
 - Northern Comprehensive Regional Assessment [1:100,000 scale]
 - Reconnaissance soil landscapes of the Namoi CMA [1:100,000 scale]
 - Reconnaissance soil landscapes of the Upper Riverina (HSHL) [1:100,000 scale]
 - Reconnaissance soil landscapes of the Border Rivers/Gwydir CMA [1:100,000 scale]
 - Brigalow Belt South Western Regional Assessment [1:100,000 scale]
 - Reconnaissance Soil Landscapes of the Upper Macleay Catchment [1:100,000 scale]
 - Upper Murrumbidgee Soil Benchmarking project [1:100,000 scale]
 - Glen Innes Data Gap Reconnaissance Soils Mapping [1:100,000 scale]
 - Soil Information for the Nyngan 1:250,000 sheet [1:250,000 scale]
 - Soil Information for the Walgett 1:250,000 sheet [1:250,000 scale]
 - Soil Information for the Gilgandra 1:250,000 sheet [1:250,000 scale]
 - Reconnaissance soil landscapes of the Riverine Plains [1:500,000 scale]
 - Land Systems of the Western NSW [1:250,000 scale]
 - Land Systems of the Cobar Peniplain Bioregion [1:250,000 scale]

All map units were assigned a unique master landscape code and then assessed for eight soil or landscape limitations: topsoil acidification, salinity, water erosion, wind erosion, mass movement, shallow soils/rock outcrop, soil structure decline and waterlogging. This information was interpreted using a [rule set]

(http://www.environment.nsw.gov.au/soils/20120394lsc2spubslandingpage.htm) and stored in the Access Based Data Utility for Land and soil capability (ABDUL) expert system which calculated the final LSC classes. The system allows for a manual override to modify LSC values when required. The most limiting LSC of the 8 hazards represents the overall LSC (LSC MstLmt) result for each map unit.

Land and Soil Capability mapping was linked to the feature class to produce two final maps derived from different dissolved outputs of the data . These are available to download in shapefile format:

- 1. LSC_MstLmtAll_NSW_v4_5_211020 map polygons that share the same most limiting LSC and eight individual LSC hazard classes
- 2. LSC_MstLmt_NSW_v4_5_211020 map polygons that only share the same most limiting LSC class

Limitations on public access

Scope

DQ Completeness Commission

Effective date

2021-10-20

Explanation

All polygons were labeled with a LSC class (1-8) except for the following units below which have been labeled accordingly: water = 99 or Water; Disturbed Terrain and Rock = 98 or Not assessed. A minimal desktop and limited field review has been completed for the dominant LSC field of targeted map units used in the production of this map. In addition a more thorough desktop triage quality check has been completed for all individual LSC hazard fields of map units covered within the New England/North West, Upper Hunter, Central West, Sydney Canberra Corridor and Greater Southern Highlands Strategic Regional Land use Priority areas.

DQ Completeness Omission

Effective date

1900-01-01

DQ Conceptual Consistency

Effective date

1900-01-01

DQ Topological Consistency

Effective date

2021-10-20

Explanation

Checked for missing attributes, ArcGIS was used to ensure all polygons in the shapefile

are topologically correct (cluster tolerance 0.000003 DDeg).

DQ Absolute External Positional Accuracy

Effective date

2021-10-20

Explanation

The accuracy of this map coverage varies across NSW, as map polygon boundaries were derived from many different sources and scales (see lineage). Soil boundaries using published and draft 1:100,000 scale mapping by DPIE are generally accurate to within 100 m. Soil boundaries using published or draft 1:250,000 scale, SCA and reconnaissance 1:100,000 - 1:250,000 level soil landscape mapping are generally accurate to within 250 m. Land Systems is a different style of mapping however is published at a scale of 1:250,000 and is generally accurate to within 250m. Some small alignment issues may occur from issues with the digitizing process when first captured years ago into a digital format.

DQ Non Quantitative Attribute Correctness

Effective date

2021-10-20

Explanation

The accuracy of attributes used to derive this map coverage varies across NSW, as map polygon boundaries were derived from many different sources and map scales. A data source diagram (see *SL Thematic Data Confidence v4_5 - Metadata Figure 1 - 210429.pdf* in data package) shows these different datasets and their quality according to the data confidence classification outlined below:

- High (1) All necessary soil and landscape data is available at a catchment scale (1:100,000) to undertake the assessment of LSC and other soil thematic maps.
- Moderate (2) Most soil and landscape data is available at a catchment scale (1:100,000 - 1:250,000) to undertake the assessment of LSC and other soil thematic maps.
- Low (3) Limited soil and landscape data is available at a reconnaissance catchment scale (1:100,000 & 1:250,000) which limits the quality of the assessment of LSC and other soil thematic maps.
- Very low (4) Very limited soil and landscape data is available at a broad catchment scale (1:250,000 or 1:500,000) and the LSC and other soil thematic maps should be used as a guide only.

Responsible party

Contact position Data Broker

Organisation name NSW Department of Climate Change, Energy, the Environment and Water

Telephone number 131555

Email address <u>data.broker@environment.nsw.gov.au</u>

Web address https://www.nsw.gov.au/departments-and-agencies/dcceew

Responsible party role pointOfContact

Metadata point of contact

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Organisation name NSW Department of Climate Change, Energy, the Environment and Water

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Email address <u>data.broker@environment.nsw.gov.au</u>

Web address https://www.nsw.gov.au/departments-and-agencies/dcceew

Responsible party role pointOfContact

Metadata date 2024-09-16T23:25:04.911305

Metadata language