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 eSPADE (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 SEED Map; 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: LSC ruleset document

document	Protocol: WWW:DOWNLOAD-1.0-http--download Description: Download the Land and Soil Capability (LSC) Assessment Scheme. Function: download
ArcGIS REST Map Services	Name: 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 information web page	Name: Land and soil information web page Protocol: WWW:DOWNLOAD-1.0-http--download Description: About land and soil information in NSW - DPIE's data systems and map products. Function: download
DPIE's Land and soil website	Name: DPIE's Land and soil website Protocol: WWW:DOWNLOAD-1.0-http--download Description: Soil information, mapping & management; land degradation & geodiversity. Function: download
Web Map Service (WMS)	Name: Web Map Service (WMS) Protocol: WWW:DOWNLOAD-1.0-http--download Description: Connect to WMS using your GIS. Function: download
KML Service	Name: KML Service Protocol: WWW:DOWNLOAD-1.0-http--download Description: Download KML for use in Google Earth. Function: download
Web Map Tile Service (WMTS)	Name: Web Map Tile Service (WMTS) Protocol: WWW:DOWNLOAD-1.0-http--download Description: Connect to WMTS using your GIS. Function: download

Unique resource identifier

Code	97fb7a2d-1ce1-4e41-ad4d-b84154bea038

Presentation form	Map digital
Edition	4.5

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

Type	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 system	5711

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
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

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 dataset

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
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Responsible party role	pointOfContact

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Metadata date

2024-09-16T23:25:04.911305

Metadata language