

Abstract

Steep Land was first acknowledged within the Soil Conservation Act 1938 legislation as Protected Lands primarily due to land degradation impacts associated with tree clearing. Early designation of these areas was mapped by hand using topographic basemaps or interpreted from aerial photographs with 3D stereoscopes at various scales. Then acquisition of satellite data enabled all of NSW to be captured, however this was coarse and mapping of steep lands remained disputable over some areas.

In 2020 Department of Customer Services (DCS) released state-wide 5m resolution digital elevation data in the form of aerial lidar and photogrammetric point-cloud. This has been generated from a combination of 1km, 2km and 5km tiles.

Department of Planning, and Environment have utilised the source data from DCS to create the Steep Land product. Data cleansing and quality assessments have been completed.

The Steep Land 5m product has been created to effectively replace the following existing products: * [Vulnerable Lands](#) - Steep or Highly Erodible (SHE) * [SRTM18](#) - Shuttle Radar

How was Steep Land determined?

Using a smoothed digital elevation model of the earth surface, a slope product was created. This was generated using the Horn 3x3 (1981) method which uses the eight pixels around the central cell to calculate the weighted gradient in north-south and east-west directions, and trigonometry to calculate the maximum slope in the aspect direction.

Having determined the slope values, accurate identification of land 18 degrees or greater and 30 degrees or greater across NSW was possible. Steep areas are identified by thresholding the slope value. Only the values of interest are extracted.

The Steep Land products are available covering NSW or in zone mosaics 54, 55, 56. They are in binary form. Please adjust the symbology as required.

18 degrees: * 0 - Not Steep (below 18 degrees) * 1 - Steep (areas identified as 18 degrees or greater).

30 degrees: * 0 - Not Steep (below 30 degrees) * 1 - Steep (areas identified as 30 degrees or greater).

Please contact data.broker@environment.nsw.gov.au for more information.

Resource locator

[Data Quality Statement](#)

Name: Data Quality Statement

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

Description:

Data quality statement for Steep Land

Function: download

[Fact Sheet - Steep Land](#)

Name: Fact Sheet - Steep Land

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

Description:

Background, development and naming information

Function: download

[Landholder Information - Steep Land](#)

Name: Landholder Information - Steep Land

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

Description:

User friendly information on background and development

Function: download

[SteepLand18_zone54](#)

Name: SteepLand18_zone54

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

Description:

Steep Land 18 degrees or greater covering MGA Zone 54 GeoTiff - 10MB

Function: download

[SteepLand18_zone55](#)

Name: SteepLand18_zone55

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

Description:

Steep Land 18 degrees or greater covering MGA zone 55 GeoTiff - 110MB

Function: download

[SteepLand18_zone56](#)

Name: SteepLand18_zone56

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

Description:

Steep Land 18 degrees or greater covering MGA zone 56 GeoTiff - 180MB

Function: download

[SteepLand18_nsw](#)

Name: SteepLand18_nsw

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

Description:

Steep Land 18 degrees or greater covering NSW GeoTiff - 300MB

Function: download

[SteepLand30_nsw](#)

Name: SteepLand30_nsw

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

Description:

Steep Land 30 degrees or greater covering NSW

Function: download

[SteepLand30_zone54](#)

Name: SteepLand30_zone54

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

Description:

Steep Land 30 degrees or greater covering MGA Zone 54

Function: download

[SteepLand30_zone55](#)

Name: SteepLand30_zone55

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

Description:

Steep Land 30 degrees or greater covering MGA Zone 55

Function: download

[SteepLand30_zone56](#)

Name: SteepLand30_zone56

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

Description:

Steep Land 30 degrees or greater covering MGA Zone 56

Function: download

Unique resource identifier	
Code	4c18549b-a6bc-4519-bc6e-2ec92c7e0d62
Presentation form	Image digital
Edition	1
Dataset language	English
Metadata standard	
Name	ISO 19115
Edition	2016
Dataset URI	https://datasets.seed.nsw.gov.au/dataset/4c18549b-a6bc-4519-bc6e-2ec92c7e0d62
Purpose	Planning, and management information
Status	Completed
Spatial representation type	grid
Spatial reference system	
Code identifying the spatial reference system	4283
Spatial resolution	5 m
Additional information source	Meta data for every data tile which makes up the digital elevation model (parent data) is available from Department of Customer Services as a downloadable HTML file. Please refer to the Elevation Data Portal hosted by Geoscience Australia
Topic category	

Keyword set	
keyword value	PHOTOGRAPHY-AND-IMAGERY-Remote-Sensing LAND-Topography
Originating controlled vocabulary	
Title	ANZLIC Search Words
Reference date	2008-05-16
Geographic location	
West bounding longitude	141
East bounding longitude	154
North bounding latitude	-37.7
South bounding latitude	-28
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	2011-01-01
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

Data is a collection of 5m Photogrametric - ADS derived 1m and 2m Pointcloud - Lidar derived The processing sequence: Resample to 5m DEM smoothing Slope creation using Horn 3x3 method Generate steep products, aspect, hillshade, 18 and 30 degrees Remove pixel islands and absorb holes equal to or 18 degrees) slope data (ba2) ba5 Steep layer 2, produced by thresholding (> 30 degrees) slope data (ba2) ba6 Sieved steep layer - Clumps less than threshold area absorbed into surrounding ba7 Finals - 100km mapsheet ba8 Mosaics

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
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Metadata date 2024-02-26T13:45:15.225882

Metadata language