

Title NSW post-fire debris flow susceptibility map

Abstract

Debris flows are extremely damaging and dangerous post-fire hazards that can cause significant short- and long-term impacts to rivers and aquatic ecosystems, water quality, and infrastructure. However, they are relatively poorly documented in NSW. High-resolution aerial imagery highlights significant debris flow activity in parts of NSW severely impacted by the 2019/20 Black Summer bushfires, specifically the Tuross, Tumut and Lake Burragorang catchments which were mapped in detail. This inventory of debris flow occurrences was used to train and validate a predictive logistic regression model using key predictor variables slope, fire severity, aridity, geology and soil erodibility. The model outputs can inform assessments of future potential hazards to threatened aquatic species, remote infrastructure such as roads and properties, and drinking water reservoirs and associated infrastructure.

For more information, please read the accompanying report, 'Post-fire debris flows in NSW: Susceptibility modelling and implications for management', or check out this link: <https://www.environment.nsw.gov.au/topics/water/estuaries/estuaries-research/bushfire-affected-waterways>

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:

Data quality statement for NSW Post-fire Debris flow susceptibility map

Function: download

[NSW Debris flow probability-Logistic regression model output \(classified\)](#)

Name: NSW Debris flow probability-Logistic regression model output (classified)

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

Description:

The logistic regression model's final output values underwent classification into three distinct classes. The classification cut-off ranges were defined as follows: Values ranging from Zero to 48% were classified as 1 (Zero/Low probability), 48% to 72% were assigned as 2 (Moderate probability), and 72% to 100% were identified as 3 (High probability). To gain a clearer understanding of how the cut-offs were defined, refer to the accompanying report, 'Post-fire debris flows in NSW: Susceptibility modelling and implications for management'. The report will be available soon.

Function: download

[ArcGIS REST Service: NSW Debris flow probability](#)

Name: ArcGIS REST Service: NSW Debris flow probability

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

Description:

An ArcGIS Server web service represents a GIS resource such as a map, locator, or image that is located on an ArcGIS Server site and is made available to client applications. Depending on the layers enabled, this web service allows a user to query its features and/or visualise the dataset. This service is aimed at advanced geographical information users, and will require access to geographical information system (GIS) software such as ArcGIS/ArcMap.

Function: download

[Post-fire debris flows in NSW South Wales - Susceptibility](#)

Name: Post-fire debris flows in NSW South Wales - Susceptibility modelling and implications for management

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

[modelling and implications for management](#)

Description:
The purpose of the report is to outline the methods used in developing and validating the model, while also discussing the implications of the susceptibility map for land and water management.

Function: download

[WMS Service](#)

Name: WMS Service

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

Description:

WMS Service

Function: download

Unique resource identifier

Code f4b9f20a-65d5-4b64-8803-55c8beb1a67d

Presentation form Map digital

Edition 1

Dataset language English

Metadata standard

Name ISO 19115

Edition 2016

Dataset URI <https://datasets.seed.nsw.gov.au/dataset/f4b9f20a-65d5-4b64-8803-55c8beb1a67d>

Purpose Post-fire management planning

Status Completed

Spatial representation type grid

Spatial reference system

Code identifying the spatial reference system 4283

Spatial resolution 5 m

Additional information source Debris flow mapping within study areas (Tuross, Tumut, and Burragorang) for training models relied on satellite imageries dated subsequent to the 2019-2020 NSW bushfire. High-resolution (~7 cm) NearMap acquisitions of aerial imagery across a broad swathe of lower Tuross catchment (12/03/2020 and 23/01/2021) and Lake Burragorang region (17/01/2021) allowed mapping of discrete post-fire debris flows. This inventory of known debris flow occurrences, supplemented by debris flow mapping undertaken by the Natural Resources Commission (NRC) - NSW Government (2023) in upper Tuross catchment (17/01/2022 - 14/02/2022) and in the Tumut catchment (03/01/2021 - 09/10/2021).

Topic category

Keyword set	
keyword value	HAZARDS-Fire SOIL-Erosion WATER-Quality
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	2021-01-03
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 debris flow susceptibility map comprises a classified raster dataset generated through logistic regression modelling approach. For more information, please read the accompanying report, 'Post-fire debris flows in NSW: Susceptibility modelling and implications for management'.

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 2024-06-27T04:19:22.512407

Metadata language