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
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Metadata date

2024-06-27T04:19:22.512407

Metadata language