Title	Lake Wyangan Flood Study

Abstract

Conclusions

The objective of the study was to undertake a detailed flood study of the Lake Wyangan catchment and establish models as necessary for design flood level prediction.

Through the undertaking of the flood study it has been found that during flood events the majority of the catchment runoff flows to Tharbogang Swamp rather than Lake Wyangan, as had previously been assumed. Historically there has been little response of Lake Wyangan water levels to rainfall events within the catchment, with only the March 1989 event producing a significant response. The limited response in Lake Wyangan is due to a number of factors:

- It has a relatively small catchment area of around 100km2, including diverted catchment runoff through the Lake View Drain (Lake Wyangan's natural catchment is around 75km2);
- The calibration process found the catchment to indicate a high initial rainfall loss for the events considered. A large amount of rainfall (>60mm) is required before any catchment runoff is generated and a response in the lake can be observed; and
- A proportion of the catchment runoff volume is retained in temporary flood storages in the catchment, rather than further contributing to the flood storage in the lake.

Being a volume-driven closed-catchment system with no natural outlet, flood levels in Lake Wyangan and Tharbogang Swamp are directly related to the catchment runoff volume generated by any given flood event. The high rainfall losses generate relatively small effective rainfall depths and the flood levels are therefore highly sensitive to changes in the adopted initial loss value. The calibration process found an initial loss value of around 60mm to be appropriate for the events considered. However, due to the characteristics of the available design rainfall temporal pattern, this loss value was reduced for design purposes.

Tharbogang Swamp has a much larger catchment area than Lake Wyangan and therefore shows a much greater flood response. Unfortunately there has been no history of flood level recording in Tharbogang Swamp to compare to the modelled flood response.

The study also identified a number of local overland flow paths which impact of the planned development areas of Council's Growth Strategy 2030. It is important that these flow paths are taken into consideration during the stages of development planning.

The flood study will form the basis for the subsequent floodplain risk management activities, being the next stage of the floodplain risk management process. The key locations to consider during this process have been identified as:

- Locations where there is potential for cross-catchment flow transfer from the Tharbogang Swamp catchment into Lake Wyangan (potential changes to the existing flow distribution may result from future on-ground works in these localities) ; and
- Locations where the floodways occur within the proposed development areas of the Giffith Growth Strategy 2030.

Resource locator

Lake Wyangan Flood Study	Name: Lake Wyangan Flood Study Protocol: WWW:DOWNLOAD-1.0-http--download Function: download

Unique resource identifier

Code	ecfc024f-d2ab-4b41-bfad-e63cbb3d169f

Presentation form

Edition

01/03/2018

Dataset language	English

Metadata standard

Name	ISO 19115
Edition	2016

Dataset URI	https://datasets.seed.nsw.gov.au/dataset/ecfc024f-d2ab-4b41-bfad-e63cbb3d169f
Purpose	Land and Resource Management
Status	On going

Spatial representation

Type	vector

Spatial reference system

Code identifying the spatial reference system	4283

Topic category

Keyword set

keyword value

Originating controlled vocabulary

Title	ANZLIC Search Words
Reference date	2008-05-16

Geographic location

West bounding longitude	145.813293
East bounding longitude	146.192322
North bounding latitude	-34.250406
South bounding latitude	-33.890937
NSW Place Name	Lake Wyangan

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	
End position	N/A

Dataset reference date

Resource maintenance

Maintenance and update frequency	As needed

Contact info

Contact position	Data Broker
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Responsible party role	pointOfContact

Limitations on public access

Responsible party

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Metadata date

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