



# Use of Geomorphology in River Management

## IDENTIFY SOLUTIONS FOR RIVER CONSERVATION, MANAGEMENT AND REHABILITATION IN AUSTRALIA

### SUMMARY

Progressive river management industries use advanced understandings of geomorphology in practice. Such knowledge informs the implementation of conservation or rehabilitation activities to treat ecosystem health problems and mitigate the effects of droughts and floods.

The Use of Geomorphology in River Management microcredential will improve your knowledge of using geomorphology in practice, with a focus on identifying treatment solutions and techniques, river rehabilitation project design and adaptive management approaches. You'll first attend an online tutorial introducing you to fluvial geomorphology concepts and river management. The in-person component begins with a three-day field trip where you'll participate in practical activities. You'll then continue your learning on campus in an active learning environment that includes a mix of short presentations and a range of practical learning activities.

### KEY FEATURES

- **Gain recognition towards further study**  
Successfully complete this microcredential and you may receive RPL towards a graduate certificate or diploma.
- **Enhance your employability**  
Upskill, reskill and extend your knowledge of river management.
- **Learn from world-renowned experts**  
Interact with teachers and colleagues in an active learning environment.
- **Undertake hands-on learning in a real-world setting**  
Apply your skills and knowledge during a three-day field trip.

### KEY DETAILS



#### MODE

Online, on campus and off campus



#### DURATION

Online, self-directed pre-work will be available after 25 November 2024

3-day field trip (Hunter Valley):

Saturday 11 January 2025 – Monday 13 January 2025

4-days on campus (North Ryde):

Tuesday 14 January 2025 – Friday 17 January 2025



#### LOCATION

- Hunter Valley, NSW
- Wallumattagal Campus, North Ryde NSW 2109



#### WHO SHOULD ATTEND?

Professionals operating in the river science or environmental management spaces who are looking to upskill or reskill.



**EXPLORE RIVER CONSERVATION**  
and rehabilitation strategies in an  
Australian context



**STUDY IN AN ACTIVE  
LEARNING ENVIRONMENT**  
designed to foster collaboration and  
practical learning



**BE AN ENVIRONMENTAL CHAMPION**  
by learning how to conserve and  
rehabilitate rivers

**LEARNING OUTCOMES**

- Use a range of information sources to develop an understanding of the pressing challenges faced in river conservation and management in Australia.
- Apply geomorphic science to the solution of river conservation, management and rehabilitation issues.
- Identify and use appropriate field assessment approaches to measure, analyse and interpret river conservation, management and rehabilitation solutions.
- Demonstrate communication skills using oral, visual and written formats to convey an advanced understanding of the use of geomorphology in river management.

**WHO YOU’LL LEARN FROM**



**KIRSTIE FRYIRS – PROFESSOR**

Professor Kirstie Fryirs – School of Natural Sciences at Macquarie University and certified geomorphologist – is renowned for her work on fluvial geomorphology and river management. She researches the structure and function of rivers; how they adjust and evolve; how they’ve been impacted by anthropogenic disturbance; and how geomorphology can best be used in river conservation, recovery and rehabilitation. She also researches how catchmentsediment budgets and (dis)connectivity operate, and how rivers and catchments may respond to future disturbances, particularly floods and droughts.

**HOW YOU’LL LEARN**

<p><b>PRE-RECORDED ONLINE TUTORIAL</b> 2 HOURS</p>	<p>Once you receive access to the online learning platform, ProLearn, listen to the pre-recorded online tutorial. This tutorial introduces the microcredential and outlines the arrangements you need to make for both the on-campus days and field trip, including group set-up, accommodation bookings and transport arrangements.</p> <p>The online tutorial also contains a self-directed questionnaire that will establish your level of proficiency in fluvial geomorphology and river management, and help you determine how much pre-microcredential preparation you’ll need to undertake. You can do this non-assessable questionnaire in your own time.</p>
<p><b>ONLINE PRE- MICROCREDENTIAL WORK</b> 4 HOURS</p>	<p>You’ll undertake self-directed pre-work via ProLearn, which involves a set of preparatory readings. If you have experience in fluvial geomorphology, this will be refresher material. If not, this material will establish some foundational understanding. If you have no foundation knowledge of fluvial geomorphology, you should consider enrolling in the Geomorphic Analysis of Rivers microcredential that runs immediately before this microcredential.</p>
<p><b>FIELD TRIP: HUNTER VALLEY</b> 3 DAYS</p>	<p>You’ll visit a range of sites where you’ll interpret and discuss how to use geomorphology in river management. This will include rapid assessments of riparian condition, identifying geomorphic threats and issues and considering river rehabilitation responses.</p>
<p><b>ON-CAMPUS SESSIONS</b> 4 DAYS, 9AM – 5PM</p>	<p>You’ll undertake activities individually, in small groups and as a class. Each short introduction session is followed by an active learning practical activity that will reinforce your learning.</p>

*“This micro-credential really illustrates how geomorphology is desperately needed front and centre if we are to solve river health and rehabilitation challenges going forward.”*

**Danelle Agnew**

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MICRO-CREDENTIAL GRADUATE

**FIND OUT MORE**

[microcredentials.mq.edu.au/courses/use-of-geomorphology-in-river-management](https://microcredentials.mq.edu.au/courses/use-of-geomorphology-in-river-management)