

Training for researchers and river management professionals: International course offerings

Training in application and use of the River Styles Framework is delivered by developers of the Framework through a range of course offerings. These range from the five-day Professional River Styles Short Course (for accreditation in use of Stage 1 of the River Styles Framework) to one-day introductory workshops.

All international courses are offered via a flexible 'participant-hosted' model, allowing trainers to come to a location convenient to participants in a team or organisational unit. More information on hosting arrangements and pricing can be provided by emailing riverstyles@mq.edu.au.

Included in this prospectus are details on the following courses:

- 5-day Professional River Styles Short Course
- 1-day Introduction to Fluvial Geomorphology workshop
- 1-day Introduction to the River Styles Framework workshop

About the trainers

Professor Gary Brierley

Gary is co-developer of the River Styles Framework and Professor in the School of Environment, Auckland University, New Zealand. He has been teaching professional and academic courses in river science and management for more than 30 years. Gary's current research focuses on development of and application of coherent scientific guidance with which to promote river repair, recognising diversity and variability in river systems.

Professor Kirstie Fryirs

Kirstie is co-developer of the River Styles Framework and Professor in the School of Natural Sciences, Macquarie University, Australia. She has more than 20 years of experience teaching fluvial geomorphology and river management to professional, postgraduate and undergraduate students. Kirstie's research focuses on fluvial geomorphology, in particular, river evolution, sediment budgets, landscape (dis)connectivity and human disturbance to rivers.



5-day Professional River Styles Short Course (Stage 1)

This five-day, intensive Short Course was specifically developed for river management professionals, in order to provide accreditation in Stage 1 of the River Styles Framework (baseline survey of river character and behaviour). The course provides detailed, hands-on and field-based instruction. Later in the course, insights into Stages 2 to 4 (assessment of river condition, assessment of recovery potential and the geomorphic basis for prioritisation of management activities) are provided.

An accreditation framework for River Styles has been developed to ensure quality control. By completing the 5-day Professional River Styles Short Course and passing the assessment, participants will be awarded provisional River Styler status. More information on the accreditation guidelines is available on the River Styles website.

Duration: Five days, Monday to Friday 8.30 am to 5.00 pm

Location: Venue where suitable field sites are available (please contact Kirstie Fryirs or Gary Brierley to discuss requirements) – **(hosted by participants' organisation)**

Prerequisites: Some familiarity with geomorphology is of benefit

Cost to host: The host is responsible for all the organisation of the workshop venue, participant registrations and presenters' costs. This includes the following requirements:

- Presenters' fee
- Participants to provide own copy of textbooks 'Geomorphic Analysis of River Systems: An Approach to Reading the Landscape' and 'Geomorphology and River Management: Applications of the River Styles Framework'
- All catering for participants (lunch, morning and afternoon teas), printing of course booklets, provision of resources and venue
- Presenters' travel, food and accommodation expenses for duration of the course and any preparation days
- Hosts liaise with presenters to tailor course to locations, and provide locations of interest for use in examples and exercises
- Development and production of place-based resources for in-class learning and fieldwork sites.

Please contact riverstyles@mq.edu.au for more information.

Course numbers: Maximum 25 participants.

Aims of course

- Outline background principles of fluvial geomorphology
- Demonstrate the use of geomorphology as a physical template for river management
- Develop a working knowledge of the River Styles Framework (Stage 1)
- Demonstrate how to identify and interpret the character and behaviour of River Styles
- Identify River Styles and undertake practical exercises in a local catchment
- Discuss controls on downstream patterns of River Styles
- Provide insight into the geomorphic condition and recovery potential of River Styles (Stages 2 and 3)
- Discuss how River Styles data can be used in river rehabilitation and waterways management (Stage 4)

The intent of this workshop is *not* to provide training in fluvial geomorphology. Rather, through lecture presentations, discussions, field and practical exercises, we cover a range of introductory principles and



analyses of river systems and apply these as part of Stage 1 of the River Styles Framework. We focus on geomorphology (physical structure and behaviour of rivers), not hydrology, ecology or engineering.

Structure of course

Day 1:

- Presentation: Introduction to fluvial geomorphology
- Presentation: Catchment-scale relationships in river systems
- Exercise: Catchment-scale morphometrics and their effects on hydrology and geomorphology
- Presentation: Discharge relationships, impelling and resisting forces, channel geometry
- Presentation: Instream geomorphic units and floodplain forms and processes
- Presentation: River diversity
- Exercise: River diversity quiz
- Exercise: River character and geomorphic units
- Presentation: River behaviour and evolution
- Presentation: River response to human disturbance
- Exercise: River behaviour and change, human disturbance and sensitivity
- Presentation: Sediment flux relationships in river systems
- Discussion session: Take-home messages, river futures, fluvial geomorphology and river management.

Day 2:

- Exercise: Five keywords
- Presentation: Background principles of the River Styles Framework
- Exercise: River Styles quiz
- Presentation: How to apply Stage 1 of the River Styles Framework: Practical implications
- Presentation: Identifying River Styles, naming conventions and construction of River Styles trees for a range of local examples.

Day 3:

- Exercise: Mapping geomorphic units and River Styles for sites we will visit in the field
- Exercise: River Styles proformas – analysis of river character and behaviour
- Assessment task 1: Naming conventions and River Styles trees
- Exercise: Longitudinal profiles, analysis of patterns and controls
- Presentation by each group on identification of River Styles boundaries along longitudinal profiles
- Assessment task 2: Longitudinal profiles, analysis of patterns and controls.

Day 4:

- Fieldwork: Verification of River Styles – identification, analysis of river character and behaviour
- Fieldwork presentation: By each group, on the character and identification of River Styles at each field site.

Day 5:

- Assessment task 3: River Styles proformas and geomorphic maps
- Practical exercise: Construct evolutionary sequences for each River Style and presentations by each group
- Presentation: Procedures used to assess river evolution and geomorphic river condition (Stage 2 of the River Styles Framework)



- Exercise: Geoindicators for assessing river condition
- Presentation: Procedures used to assess river recovery potential (Stage 3 of the River Styles Framework)
- Exercise: Placing river evolution and condition on recovery diagrams and forecasting River Futures
- Presentation: River Styles and river management (Stage 4 of the River Styles Framework)
- Presentation: Application and use of River Styles Framework in river management – a global perspective
- Discussion session: Use of River Styles databases in your region
- Results of 'five keywords' exercise

Note: For a provisional accreditation in Stage 1 of the River Styles Framework you must pass all three assessment tasks in this five-day course (each task is linked to a required River Styles Stage 1 product).

Disclaimer

Macquarie University and the organisers of the course accept no responsibility for personal injury incurred during any training course, or travel/accommodation losses in the event of a training course being cancelled. Participants are advised to ensure that personal insurance and WH&S requirements are met by the individual and/or their employer.



1-day Introduction to Fluvial Geomorphology

This workshop is intended for anyone who is interested in geomorphology or uses geomorphology in their work.

Duration: One day, 8.30 am to 5.00 pm

Location: Office- or hall-based in any location (**hosted by participants' organisation**)

Prerequisites: None, but some familiarity with geomorphology is of benefit

Cost to host: The host is responsible for the organisation of the workshop venue, participant registrations and presenters' costs. This includes the following requirements:

- Presenters' fee
- Participants to provide own copy of textbook 'Geomorphic Analysis of River Systems: An Approach to Reading the Landscape'
- All catering for participants (lunch, morning and afternoon teas), printing of course booklets, provision of resources and venue
- Presenters' travel, food and accommodation expenses for duration of the workshop
- Hosts liaise with presenters to tailor course to locations, providing locations of interest for use in examples and exercises.

Please contact info@riverstyles.com for more information.

Course numbers: Minimum 20 and maximum 50 participants required for course to run.

Aims of course

- Develop a working knowledge of key principles in fluvial geomorphology
- Provide insight into the character and behaviour of rivers across the spectrum of diversity
- Demonstrate how fluvial geomorphology can be used in river management practice

The intent of this workshop is *not* to provide training in fluvial geomorphology. Rather, through lecture presentations, discussions and practical exercises, we cover a range of introductory principles and analyses of river systems. We focus on geomorphology (physical structure and behaviour of rivers), not hydrology, ecology or engineering.

Structure of course

Session 1:

- Introduction: What is fluvial geomorphology? Geomorphology as a physical template; An approach to 'Reading the Landscape'
- Presentation: Catchment-scale perspectives in fluvial geomorphology
- Presentation: The diversity of rivers in Australia and overseas (including introduction to the River Styles Framework)
- Discussion session: What types of rivers are you familiar with in your local catchments?

Session 2:

- Presentation: Channel geometry (bed and bank processes) and instream geomorphic units
- Presentation: Floodplain forms and processes (including comment on floodplain reworking; flood risk)
- Practical exercise: The character and behaviour of different river types

Session 3:



- Presentation: River evolution (change): patterns, connectivity and geomorphic responses to human disturbance
- Discussion: River evolution and human disturbance: forecasting future adjustments for your catchments

Session 4:

- Presentation: River management and prioritisation: River Futures
- Discussion: River management in your local catchments.

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1-day Introduction to the River Styles Framework

This workshop is intended for anyone who is interested in familiarising themselves with the River Styles Framework and how it is used for river management both in Australia and overseas.

Duration: One day, 8.30 am to 5.00 pm

Location: Office- or hall-based in any location. This course can be extended to a second day on request, with local field visits. (**hosted by participants' organisation**)

Prerequisites: Introduction to Fluvial Geomorphology course (1-day)

Cost to host: The host is responsible for the organisation of the workshop venue, participant registrations and presenters' costs. This includes the following requirements:

- Presenters' fee
- Participants to provide own copy of textbook 'Geomorphic Analysis of River Systems: An Approach to Reading the Landscape'
- All catering for participants (lunch, morning and afternoon teas), printing of course booklets, provision of resources and venue
- Presenters' travel, food and accommodation expenses for duration of the workshop
- Hosts liaise with presenters to tailor course to locations, providing locations of interest for use in examples and exercises.

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Course numbers: Minimum 20 and maximum 40 participants required for course to run.

Aims of course

- Develop a working knowledge of the River Styles Framework
- Discuss how to use the Framework in river rehabilitation and waterways management in Australia and overseas
- Provide an introductory pathway to the 5-day Professional River Styles Course (accreditation)

The intent of this workshop is *not* to provide training in how to undertake River Styles assessments. Rather, participants will develop an introductory understanding of the underpinnings of the River Styles Framework, its structure and its use in river management. From this, practitioners will be able to determine the usefulness of the framework for their work.

Structure of course

Session 1:

- Introduction: Underlying principles of the River Styles Framework
- Presentation: Stage 1 of the River Styles Framework: River character, patterns and controls
- Practical exercise: River Styles Quiz
- Presentation: Stage 1 of the River Styles framework: Interpreting river behaviour

Session 2:

- Practical exercise: Mapping River Styles and interpreting river behaviour

Session 3:

- Presentation: Stage 2 of the River Styles Framework: Catchment-framed assessment of geomorphic condition
- Practical exercise: Selecting appropriate geo-indicators of river condition for different River Styles
- Presentation: Stage 3 of the River Styles Framework: Assessing the evolutionary trajectory and geomorphic recovery potential of rivers

Session 4:

- Presentation: Stage 45 of the River Styles Framework: Implications for river management (setting geomorphic visions, identifying target conditions for river management, prioritisation based on geomorphic river condition and recovery potential, monitoring and auditing improvements in condition)
- Practical exercise: Identifying target conditions for river rehabilitation and level of intervention required
- Discussion: River Futures and applications of the River Styles Framework

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