

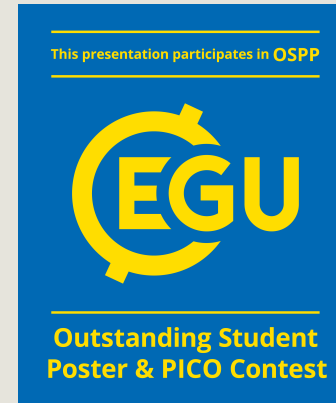
Sociogeomorphic river recovery

integrating human and physical processes

Simon Mould¹, Kirstie Fryirs¹ and Richie Howitt²

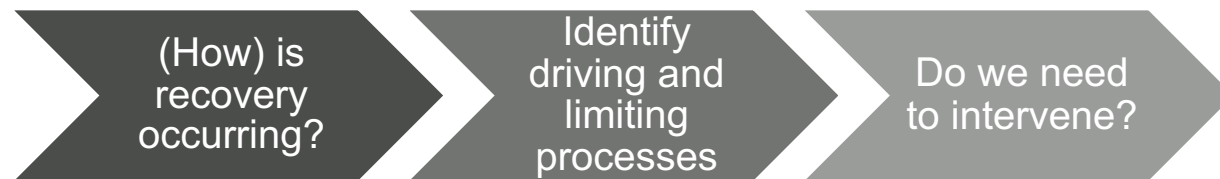
1. Department of Environmental Sciences, Macquarie University, Sydney, Australia

2. Department of Geography and Planning, Macquarie University, Sydney, Australia



Geomorphic river recovery

- **Recovery:** river's (ongoing) responses to disturbance
- **Rehabilitation:** what we do to improve river condition
- **Recovery-based river rehabilitation:** nature-based solutions to support and enhance processes that help rivers to recover

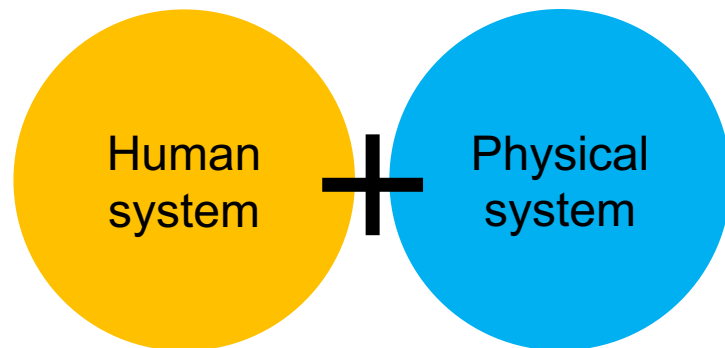


Not as simple as it looks...

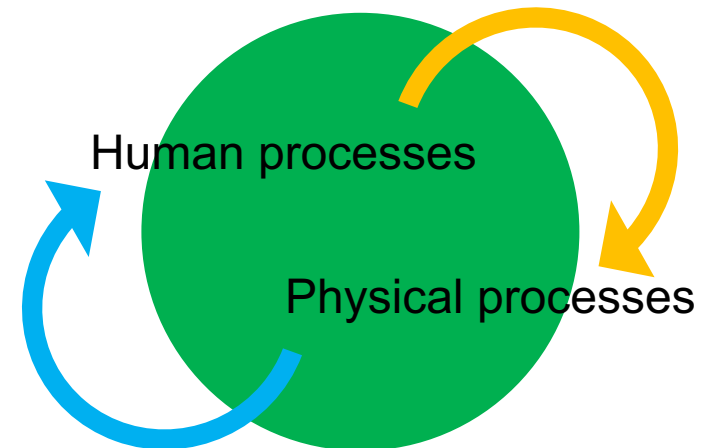
What kinds of processes are we looking for?
How do we define an 'improvement'?
When and how is intervention appropriate?

CHANS gives us a frame of reference

- Human and non-human systems are intrinsically linked (or coupled)
- But how are they coupled?



OR...



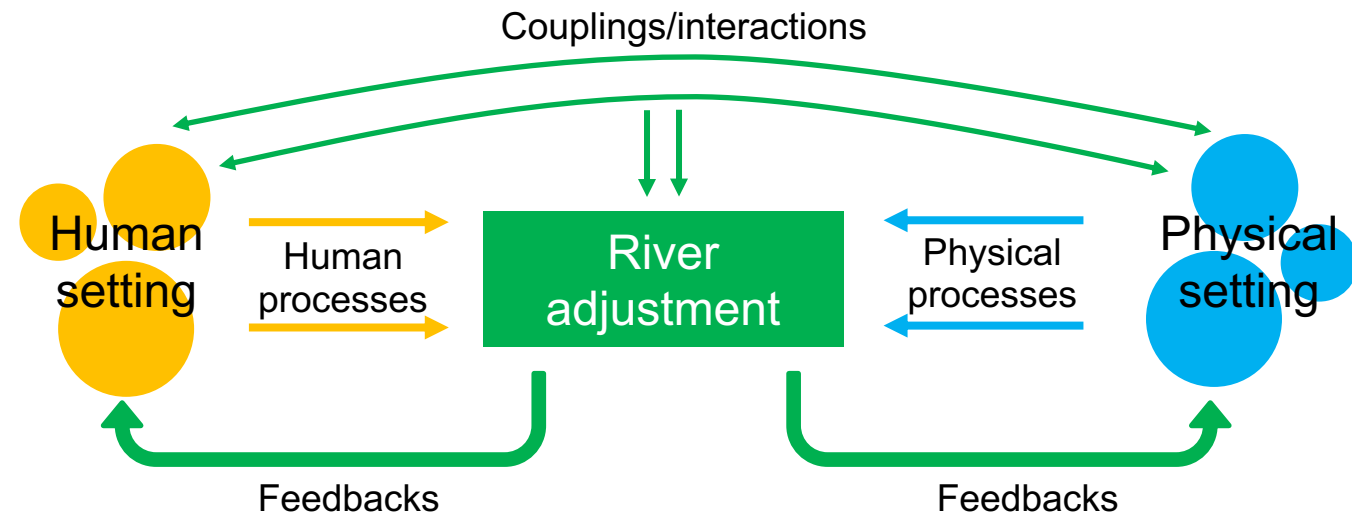
...and how can we approach this complexity?

Sociogeomorphology and rivers

- Geomorphic landscapes produce – and are produced by – **physical** and **human** processes
 - Physical: geomorphic, hydrological, ecological...
 - Human: social, economic, political, cultural...
- People re-make rivers through their “*positions, intentions and interventions.*” (Ashmore, 2015 *Geomorphology*)

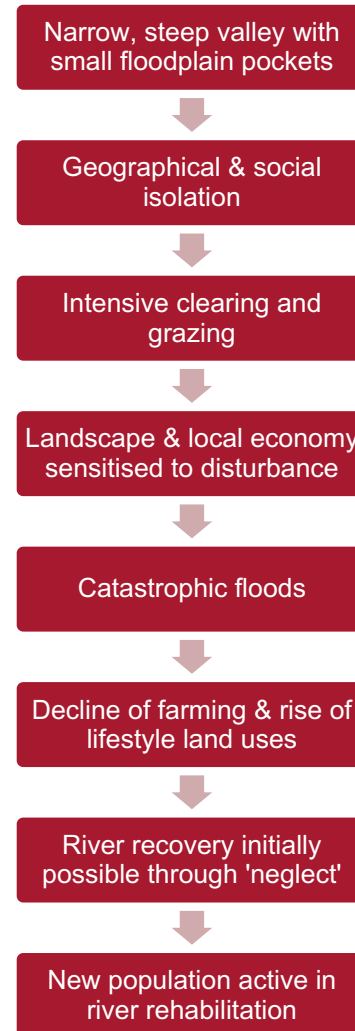
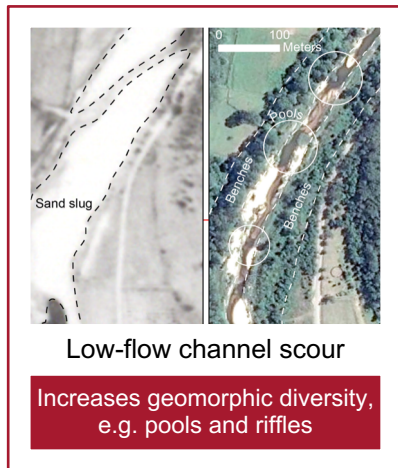
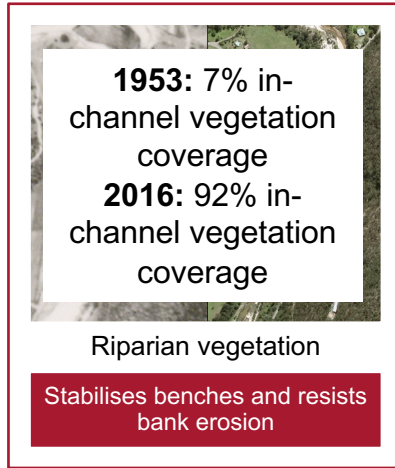
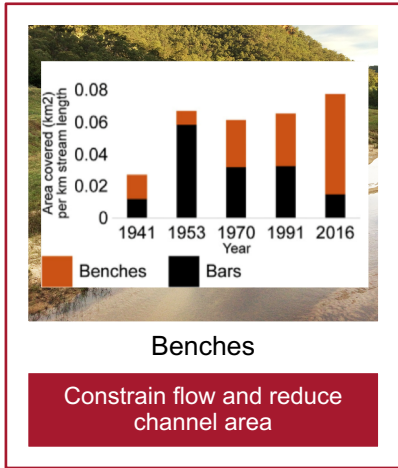
Application for river recovery?

- Recognising and explaining recovery or degradation
- Understanding constraints – physical and human
- Political action and intervention



Recognising geomorphic river recovery

MACDONALD RIVER CASE STUDY



- Social transformation coupled with river evolution
- “Social boundary conditions” constrain recovery possibilities along with physical boundary conditions



Contextualising the trajectory of geomorphic river recovery with environmental history to support river management

Simon Mould*, Kirstie Fryirs

Department of Environmental Sciences, Macquarie University, North Ryde, NSW, 2109, Australia

Being (consciously) political

CRISP'S CREEK CASE STUDY

- Sociogeomorphic environmental history allowed recognition of human relationships within a river system
- Starting point for conversations between researchers and local people
- **Development and maintenance of human relationships is a form of river rehabilitation in its own right**

“So your fascination is with those little circle things?”



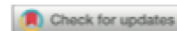
“Now they’re sort of fascinating me ... I’m looking for them now. I’m not meaning to, but it’s like subconsciously I’m doing it.”



Crisp's Creek is a chain-of-ponds river type – few geomorphically intact remnants remain

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<https://doi.org/10.1080/08941920.2017.1382627>

 Routledge
Taylor & Francis Group

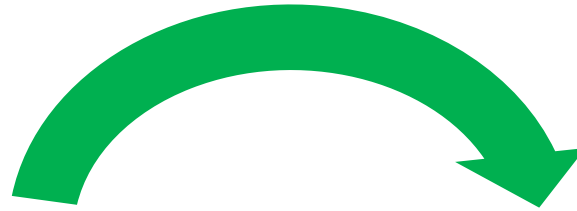


Practicing Sociogeomorphology: Relationships and Dialog in River Research and Management

Simon A. Mould^a , Kirstie Fryirs^a , and Richie Howitt^b 

^aDepartment of Environmental Sciences, Macquarie University, North Ryde, NSW, Australia; ^bDepartment of Geography and Planning, Macquarie University, North Ryde, NSW, Australia

A sociogeomorphic agenda?



Explanation

- Seeing relationships between human and physical processes
- Linking human with physical for more holistic understanding

Political action

- Appreciating the political 'work' done by science (and scientists)
- Taking responsibility for communication and application of knowledge
- Engaging constructively with human constraints on recovery

Sociogeomorphic river recovery

Simon Mould, Kirstie Fryirs and Richie Howitt

Macquarie University

simon.mould@students.mq.edu.au

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River recovery diagram

MACDONALD RIVER

