



Fitzroy River, photo Patch Clapp



**Northern Australia
Environmental
Resources
Hub**

National Environmental Science Programme

Transdisciplinary research for water management

Start-up factsheet

We need new research approaches to address complex problems

Transdisciplinary research brings together scientists from multiple disciplines to provide solutions to complex, socially relevant problems. Transdisciplinary research also involves the collaboration between

researchers and research users, enabling mutual learning between all participants. These two elements – interdisciplinary and participatory research – can improve the likelihood of research adoption by users. However, to date some questions remain unanswered: What are the impacts of transdisciplinary research? Does it really create more useful knowledge? And does the extra investment translate into real-world benefits?



This research is based in WA's Fitzroy River catchment.

Overview

This project will:

- evaluate the use of a transdisciplinary – interdisciplinary, participatory and applied – research approach in WA's Fitzroy River catchment
- contribute to water management in the Fitzroy catchment by facilitating co-production and integration of knowledge generated by four research projects
- contribute to addressing complex sustainability issues in northern Australia and beyond by informing the design of future research approaches.

A transdisciplinary research approach will be evaluated

Four Hub projects in WA's Fitzroy catchment are working together to create knowledge around water resource management. This new project is facilitating these four projects to work together in a transdisciplinary approach (Figure 1) that includes collaborating closely with research users such as governments, Traditional Owners, industry and environmental groups.

This project aims to:

- Contribute to the design and implementation of strategies that enhance the transdisciplinarity of the four Fitzroy catchment projects, increasing the potential uptake of research outputs in decision-making
- Draw lessons that can inform the design, implementation and evaluation of future transdisciplinary environmental research.

The team will use program evaluation – a widely used evaluation approach – to assess how the projects are

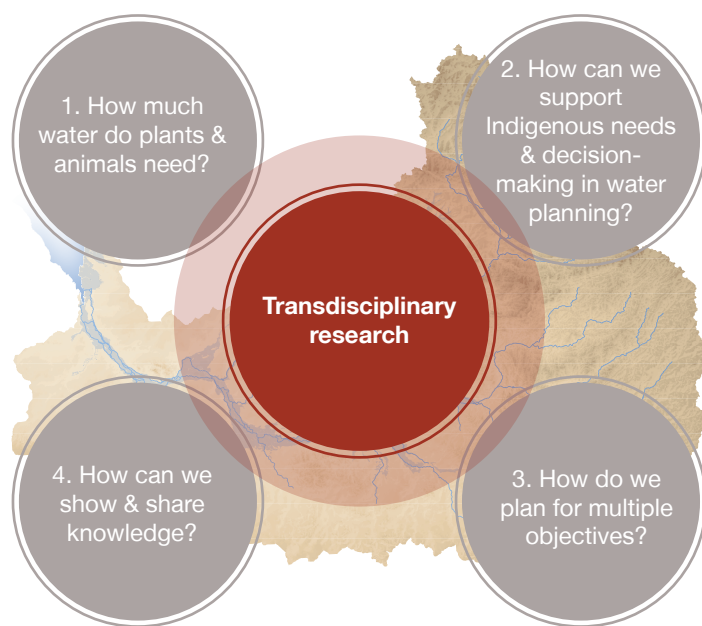


Figure 1. Diagram representing the four Hub projects collaborating in a transdisciplinary approach in WA's Fitzroy catchment. Each circle represents a project and the corresponding question it answers: 1. Environmental Water Needs, 2. Indigenous Water Needs, 3. Multi-Objective Planning, and 4. Showing and Sharing Knowledge. The central circle represents the issue of water management planning in the Fitzroy catchment, around which the projects are collaborating using a transdisciplinary approach.

coordinating their work and whether they are moving towards their intended goals and working effectively with research users. This will also provide answers to the three questions posed earlier.

Project activities

- Develop a theory of change that explains how the four projects' activities will achieve their common goals
- Design an evaluative approach that can be used by funders and researchers to assess the strengths and weaknesses of transdisciplinary research and identify a list of indicators to be used in the evaluation
- Interview research users, funders and researchers to check whether the projects are reaching towards their common goals
- Use interviews, participant observation and the analysis of relevant documents to identify the research impacts jointly achieved by the transdisciplinary research group working in the Fitzroy catchment.

Anticipated outputs

- Publications identifying the challenges and opportunities for research teams doing transdisciplinary research, and advantages and disadvantages associated with this approach
- A report with recommendations to research funders aiming to support transdisciplinary research projects
- A list of questions that researchers could address before they decide which (and what level of) transdisciplinary research to use
- An evaluative approach that can be used by researchers and funders in assessing the impacts of transdisciplinary research.

Who is involved?

This project is being led by Professors [Michael Douglas](#) and [David Pannell](#) from The University of Western Australia, supported by [Dr Milena Kiatkoski Kim](#).

Contact: michael.douglas@uwa.edu.au, david.pannell@uwa.edu.au or milena.kim@uwa.edu.au

For further information and project updates, visit the project webpage at nespnorthern.edu.au/projects/nesp/transdisciplinary.



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nespnorthern.edu.au

nesp.northern@cdu.edu.au



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