WATER SECURITY FOR NORTHERN AUSTRALIA PROGRAM (WSNA)

ORD RIVER IRRIGATION AREA

East Kimberley, Western Australia



WSNA program locations

Project 3.1 Review of water/catchment management in tropical environments

Timeline: 2023 to 2024

The Ord River Irrigation Area is one of the four nodes in the Water Security for Northern Australia program. The ORIA supports a broad array of agriculture including melons, mangos, cotton and broadacre cropping. The ORIA is presently in Stage 2 of development with farms to the east of Kununurra and Stage 3 farms are proposed for the NT.

Managing water quality in tropical catchments that experience high rainfall and possible agricultural runoff, calls for specialised strategies to maintain water quality standards and balance sustainable development needs.





Project (3.1) As interest in Northern Australia's agricultural development grows, it's crucial to review and understand the various management approaches used in these catchments. This project will review catchment management strategies to maintain water quality in tropical regions with high agricultural activity, taking learnings from catchments across the north as well as the Great Barrier Reef. A final review and stakeholder meetings on effective management models will shape the report's recommendations which has been requested by the WA Government.

research topics

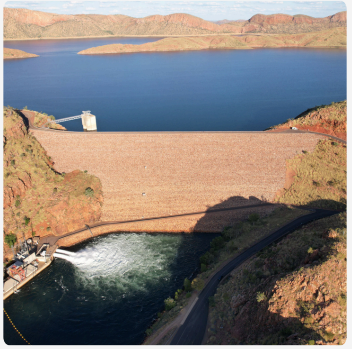
- Identify the climatic, hydrological, ecological and agricultural factors relevant to the Keep River catchment to inform management plan options.
- Identify catchment management strategies and their efficacy in tropical catchments with intensive agriculture.
- Review of the international peer-reviewed literature on management approaches to maintain and improve surface water quality.

what's happening

- Collating water quality management and monitoring plans from 20 catchments in tropical Australia.
- Collating over 90 additional resources like academic journal articles and reports and recommendations relating to water quality management from tropical environments.
- Meetings held with DPIRD and local stakeholders to determine needs of the review and develop preliminary interim management plans.

did you know?

Tropical agriculture on the Ord River began in 1941, and Lake Argyle was created in 1971, which remains the largest freshwater storage on mainland Australia!



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Project 3.2 Agricultural runoff and impacts to the Keep River

Timeline: 2023 to 2024

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The Keep River traverses the border between WA and the NT before discharging into the Joseph Bonaparte Gulf. It provides a crucial habitat for several endangered species, including the Speartooth Shark and the Largetooth Sawfish.





Project (3.2) aims to facilitate the effective management of the Keep River catchment, striking a balance between agricultural development and the conservation of biodiversity. The project is contributing to the protection and preservation of the diverse species inhabiting the River by ensuring effective maintenance of surface water quality. Robust approaches to measure key water quality indicators are used to gather comprehensive information on water quality within the River's ecosystem.

research topics

- Research to inform the runoff management of the ORIA to ensure surface water quality.
- Ecosystem preservation to maintain water quality standards to safeguard the significant and diverse species in the Keep River ecosystem.
- Informative decision making by establishing quicker turnarounds for water quality data to manage agricultural runoff and sustain the Keep River's health and agricultural benefits.

what's happening

An experienced project team have come together specialising in tropical agricultural catchments to support surface water quality in the Keep River.

A review of the crops grown and chemicals used in the Ord River Irrigation Area will inform a risk analysis.

Implementation of nutrient loggers and flow data to inform risk periods caused by runoff events.

did you know?

Despite its much lower flow compared to the Ord River, the Keep River is crucial to the region's ecology. It's an important habitat for several rare and significant species, like the Northern River Shark and the Largetooth Sawfish.



Northern River Shark
Credit: Freshwater Fish Group and Fish Health Unit, Murdoch University

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Project 3.3 Understanding the values of water in the Ord River Irrigation Area (ORIA)

Timeline: 2023 to 2024

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Water in the Ord River Irrigation Area is supplied from Lake Argyle and is utilised for town supplies, irrigated agriculture, hydro-electricity production, and environmental conservation.





Project (3.3) will delve deeper into the dynamics of ORIA's water system to understand the intrinsic value of water to its users to support robust, resilient and adaptable management approaches.

The research team consists of social scientists, economists and hydrologists. They'll be gaining insights into water management when responding to climate change impacts and insights for managing new industries like green hydrogen.

The project will explore water use efficiency and its role in agricultural development of the region.

Data on water and cropping will be consolidated to form the basis for inclusive, mixed-method social science research that is collaboratively designed with local stakeholders.

research topics

Co-development of Social-Science Research Design: with local stakeholders to capture diverse perspectives and experiences.

Water Value Perception: to understand how the various stakeholders value water in the ORIA.

The role of water in future development: to explore the importance of water and its use in the development of the Ord River Irrigation Area.

Emerging Industries and Future Water Demand: by assessing the impacts on current and potential water demand from emerging industries and changes under future climate scenarios.

did you know?

The maximum capacity of Lake Argyle is 10,770 gigaliters which is 20 times more than Sydney Harbour. It's so big it can be seen from space!



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