



Northern Australia
Environmental
Resources
Hub

National Environmental Science Programme

Environmental water needs for the Daly River

The Challenge

Governments have a strong vision for future development in northern Australia, including the expansion of irrigated agriculture. However, we need to further our knowledge to understand the ecological impacts of changes to river flows. Making decisions involving trade-offs between the water needs of communities, the environment and future industries is made more challenging without this knowledge.

The need to understand how our river systems work is particularly pressing in the Northern Territory's Daly River catchment. Most of the Northern Territory's current irrigation activity occurs in the Daly, and its reliable groundwater reserves and relatively good soils make it a prime candidate for further agricultural development. The Daly River is a unique, perennial river system in northern Australia that supports an abundance of aquatic wildlife, including 90 species of fish and eight species of freshwater turtle. The river is highly valued by the region's Indigenous people for cultural purposes and as a food source.

Furthermore, the river is arguably home to some of the best recreational fishing in northern Australia.

To better assess the impacts of further water development on these values, we need an increased ecological understanding of the river. A priority is the risk of reduced flows during the dry season and understanding the effect on the river's ecology.



Backpack electrofishing at Ooloo crossing on Daly River. Photo: Alison King. Top image: Daly River study site. Photo: Stuart Blanch

How will this research help?

The amount of water within the river, particularly during the dry season, as well as the timing of flood pulses in the wet season, is important for supporting the river's wildlife, including fish and turtles. This project will determine the water requirements of key environmental assets within the river and improve our capacity to predict the impact of current and future water allocations. The outcomes will inform water policy, water allocation planning and fisheries policy and management of the Daly River.

How will the research be carried out?

This project will build on previous research in the river, including research by the Tropical Rivers and Coastal Knowledge (TRaCK) research hub, the NERP Northern Australia Hub and the Northern Territory Government. The project will incorporate existing research, along with targeted research activities including remote sensing, habitat mapping and ecological studies to produce models that explore the relationship between river flows and key ecological assets of the Daly River system.



Eight turtle species are found in the Daly River, including pig-nosed turtles.

Photo: Ricardo França Silva

Top right: A barramundi being captured using electrofishing at Mt Nancar in the Daly River. Photo: Alison King

Where is the research happening?

The research will take place in the Daly River catchment. Field work will be conducted from Katherine township to Nauiyu / Daly River crossing where the impact of dry season water extraction on instream flows is predicted to be the greatest.



Who is involved?

The project will be led by Charles Darwin University Associate Professor Alison King.

Associate Professor King will be supported by researchers from Charles Darwin University, Griffith University, Northern Territory Department of Land Resource Management and Northern Territory Department of Primary Industries and Fisheries.

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