



Northern Australia
Environmental
Resources
Hub

National Environmental Science Programme

Critical water needs for the Mitchell River

Start-up factsheet

The challenge

River catchments of the Gulf of Carpentaria, including the Mitchell River catchment, are home to many important freshwater assets such as significant commercial and recreational fisheries, threatened species, and wetlands of national significance. With considerable interest in agricultural expansion in the Gulf, there's concern these assets may be impacted by intensive development.

The assets depend greatly on the linkages between rivers, floodplains and estuaries. However, our current ability to predict the consequences of future development on these linkages is limited.

There are also significant gaps in our understanding of environmental flow requirements, such as the quantity and timing of water flows needed to trigger the migration of key aquatic species.

How will this research help?

This research will improve our understanding of the critical flow needs to sustain freshwater ecosystems in the Mitchell River catchment.

In particular, the project aims to predict the impacts of future development on important ecosystem linkages between the river and its flood-plain wetlands, and to better understand other potential risks associated with changes to flow regimes. This information is vital to help inform decision makers about water allocation that both enables agricultural development and protects environmental assets.





Right: Researcher surveying fish. Credit: Michael Douglas. All other photos: Research activities in the Mitchell River catchment. Credit: Doug Ward

Project activities

- Identifying and mapping key 'hotspots' of freshwater primary production within the Mitchell River floodplain associated with flow-driven flooding as high priority areas for protection;
- Improving our understanding of the importance of these high priority areas for sustaining fish populations, birds, turtles, crocodiles and other aquatic species;
- Identifying other flow-dependent ecological assets in the Mitchell River and how they are likely to be impacted by water resource development; and
- Increasing confidence in water planning for river catchments in the Gulf thanks to an improved understanding of ecological assets and their critical links to flow.

Where is the research happening?

The research will be undertaken within the Mitchell River catchment, with a focus on the floodplain and other key ecological assets in-stream.

Who is involved?

Stuart Bunn from Griffith University leads the project in relation to environmental flows to improve our understanding of the critical flow needs to sustain freshwater ecosystems in the Mitchell River catchment.

Doug Ward will investigate remote sensing for identifying and mapping key 'hotspots' of freshwater primary production within the Mitchell River floodplain associated with flow-driven flooding as high priority areas for protection.

Professor Bunn and Dr Ward will be supported by researchers from Griffith University, CSIRO, Queensland Department of Science, Information Technology and Innovation, Queensland Department of Agriculture and Fisheries, and Charles Darwin University.

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