



GWYDIR FLOWS

Welcome to Issue 1 of Gwydir Flows, a newsletter in which we will bring you updates of work we are doing to monitor the outcomes of environmental water management in the Gwydir system. In this issue we'd like to introduce you to the program and share the news from the first year of environmental watering in 2014/15.

NEWSLETTER

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Ben and a broad-shelled turtle

THE MURRAY-DARLING BASIN

The Murray-Darling Basin Plan outlines the Australian government's commitment to make the Murray-Darling a 'healthy working river'. This means managing water in a way that supports the economic, cultural and environmental needs of the Basin and its communities.

To do this, the Australian government in association with the Murray-Darling Basin Authority and the Commonwealth Environmental Water Holder have implemented a strategy to deliver Commonwealth environmental water throughout the Basin.

The success of this program is measured by monitoring environmental outcomes across the basin over the long term, as part of the Commonwealth Environmental Water Holder's \$30 million long term intervention monitoring project.

OUR TEAM

Eco Logical Australia and the University of New England lead a team that works closely with NSW Office of Environment and Heritage and DPI Fisheries staff to collect and interpret information on the ground in two sites in the northern Basin.

Each year, this information is published in a report covering the whole Basin but we will bring you regular updates of the work being done in the Gwydir system.

The first year of monitoring has seen some great outcomes already, and we look forward to keeping you updated.



Mark setting up a remote monitoring station at Old Dromana

WHERE ARE WE WORKING?

Our monitoring focuses on the Big Leather watercourse and wetlands downstream of the Raft.

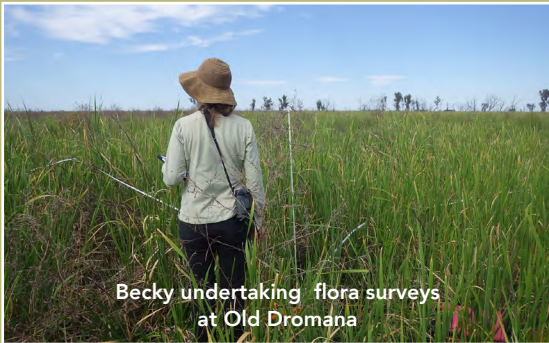
The Gwydir River at Moree supports some spectacular wetlands, parts of which are covered under several international environmental agreements.

These wetlands provide habitat and breeding sites for a huge range of water dependent flora and fauna.

We also look at the health of the river channels and how flows are affecting fish and vegetation.



Darren collecting water quality data



Becky undertaking flora surveys at Old Dromana



John using electro-shing to collect species information

WHAT DO WE MEASURE?

The program seeks to capture information across the basin on key environmental values including:

- *River connectivity*
- *Water quality*
- *Biodiversity*
- *Waterbirds*
- *Fish*

On the ground, this means monitoring flow gauges, taking water samples and conducting surveys on fish, waterbirds, water bugs, vegetation and more.

Team members visit each site up to six times each year and use remote cameras and other equipment to access real time information whenever we need it.

For further information or to view the complete annual report please visit the Commonwealth Environmental Water Office website.

Commonwealth Environmental Water Office

✉ ewater@environment.gov.au

🐦 @theCEWH

🌐 environment.gov.au/water/cewo

WHAT WE'VE SEEN SO FAR

The first year of monitoring has shown good outcomes in the Gwydir:

Biodiversity

Water delivered to the wetlands saw a boom in productivity with good outcomes for water bugs, fish and vegetation.

Waterbirds

Monitoring in the field and using remote cameras showed an increase in waterbird numbers in response to environmental watering, and in some species breeding was observed.

Fish

Environmental flows helped maintain native fish communities, and some breeding was observed, but overall fish condition was poor across the area. There's still a lot of work needed to improve control of exotic fish to help make sure the environmental water has the best possible outcome for native fish.

River Connectivity

Delivery of environmental water meant that channels in the Lower Gwydir, Gingham and Mehi-Moomin watercourses were connected several times over the year, and water was effectively delivered to the wetlands.

Water Quality

Water quality measures, including salinity, were all positive throughout the year in response to environmental water.

WHAT'S NEXT?

Overall, the watering strategy in place for the Gwydir is effective and similar positive environmental outcomes could be expected if the planned multi-year wetting and drying cycle continues.

Next year our monitoring will be expanded to incorporate wetland frogs and small fish to improve our understanding of responses throughout the entire food web.



Australasian Darter and chicks



Presence of environmental water resulted in an influx of water birds including; Magpie Geese and Spoonbills.

MEET THE TEAM

Over the coming issues we will introduce you to our team and their role in the project



Dr Mark Southwell

Senior River Scientist
Eco Logical Australia

Describe your role:

I am the Project Manager for the Gwydir & Warrego monitoring projects. I have input to the hydrology and vegetation indicators, the overall evaluation of our data and the reporting and dissemination of project findings.

What does a regular day on the monitoring project look like?

Can be anything from managing budgets and organising field work in the office, to attending meetings, doing the field work and interpreting data for reporting.

What's your most memorable moment so far?

Installing the remote cameras in the wetlands was fun, as was riding directly into the wetlands on a quadbike doing topographic surveys.

What do you wish other people knew about the monitoring project?

The added value of the long term nature of the project. Adding this information to that already collected by the NSW Office of Environment and Heritage should give us a good picture of the outcomes of environmental water in the Gwydir over an extended time period.



Dr Iris Tsoi

Post Doctoral Research Fellow
University of New England

Describe your role:

My role is to monitor things like water quality, stream metabolism and microcrustaceans. I also do macroinvertebrate (water bug) sampling as they can be useful indicators of river health.

What does a regular day on the monitoring project look like?

A regular day in the field is like an adventure. Sometimes we need to paddle canoes, ride on quad bikes or walk a couple of kilometres to reach our sampling sites. I do three five day field trips throughout the year.

In the lab, I identify and count all the bugs. These tiny creatures are an important food source for fish and other animals.

What's your most memorable moment so far?

The second field trip to the Gwydir after a heavy rainfall of 30mm in the wet season. Some low-lying areas became temporal/ephemeral wetlands and waterbirds were using it as a feeding ground.

What do you wish other people knew about the monitoring project?

We have a great and professional team with lots of different expertise who are passionate about the health of rivers and wetlands in the Murray-Darling Basin.

