



## EARLY RESULTS FROM ENVIRONMENTAL WATERING IN COLLIGEN CREEK

### Why was environmental water provided?

Environmental water was delivered in Colligen Creek, New South Wales, in November and December 2011 to improve river conditions and encourage native fish to migrate, spawn and grow.

Native fish in the Colligen Creek include the large bodied Murray cod, silver perch and golden perch. Small native fish include the native carp gudgeon.



### Why are native fish important?

Healthy native fish populations are essential for a healthy Murray–Darling Basin environment. They are a key part of ecological processes in the rivers and wetlands and also provide social, economic, cultural, aesthetic and spiritual benefits to local communities.

Environmental water is being used to help prevent the decline of native fish in the Basin by increasing their health, numbers and diversity.



Murray-Darling carp gudgeon,  
Photo by Gunther Schmida © MDBA

### What did the environmental watering achieve?

Early results showed that after the watering in Colligen Creek:

- there was an increase in the breeding of carp gudgeon, a small native fish
- there was an increase in the types of microscopic organisms that are eaten by native fish in the Creek
- the levels of microscopic plants and algae, which are important food for fish and other animals, were maintained.

The following findings will be made clearer when the final results of the monitoring are available:

- there was no evidence of increased breeding of Murray cod, although they were present in the Creek
- there was a decrease in the numbers and types of macroinvertebrates (e.g. insects, worms, snails) in the Creek immediately after the environmental flow. This pattern may change when longer-term responses are examined.

### How were the results identified?

Charles Sturt University lead a collaborative team of scientists including partners from the Murray Catchment Management Authority, Monash University, and the Wakool River Association, to monitor the outcomes of environmental flows on fish in Colligen Creek. The scientists monitored the number and types of native fish in the Creek to identify whether the delivery of the environmental flow enabled native fish to move within the system and spawn.



Scientists measured the changes in water quality to identify the suitability of river conditions to support fish, and also measured changes in the numbers and diversity of water insects and algae as an indicator of food availability for the fish.

Monitoring was undertaken in Colligen Creek and in three nearby rivers that did not receive environmental water. This allowed the research team to determine if the responses in Colligen Creek were due to environmental watering or other factors.

Environmental responses to the watering in Colligen Creek were also assessed by comparing results from before and after the environmental watering events.



The full report of the early results is available at: [www.environment.gov.au/ewater/publications/ecosystem-response-monitoring-natural-edward-wakool.html](http://www.environment.gov.au/ewater/publications/ecosystem-response-monitoring-natural-edward-wakool.html)

The final results of the monitoring of environmental watering in the Edward-Wakool river system during 2011-12 are expected to be available in late 2012.



**To contact us** please call 1800 218 478 or send an email to: [ewater@environment.gov.au](mailto:ewater@environment.gov.au). You can also subscribe to our mailing list by visiting [www.environment.gov.au/ewater/contacts/subscribe.html](http://www.environment.gov.au/ewater/contacts/subscribe.html).

**For further information** on the management and use of Commonwealth environmental water please visit [www.environment.gov.au/ewater/publications/index.html](http://www.environment.gov.au/ewater/publications/index.html).

## Colligen Creek

Colligen Creek is located in the Edward-Wakool river system, southern New South Wales. Environmental water, comprising 5.5 gigalitres from the Commonwealth and 1.7 gigalitres from New South Wales, was delivered to Colligen Creek in November and December 2011.

More information on Commonwealth environmental watering actions in the Edward-Wakool River system is available from [www.environment.gov.au/ewater/southern/murray/index.html](http://www.environment.gov.au/ewater/southern/murray/index.html)



(a) Colligen Creek prior to the environmental flow



(b) Colligen Creek during the environmental flow

Photos (a) and (b) above by Robyn Watts