



NSW Government

Department of Water & Energy

Survival of fish hatchlings – larval fish and flows in regulated rivers

Integrated Monitoring of Environmental Flows (IMEF) is a scientific program managed by the NSW Department of Water and Energy to monitor the ecological benefits provided by environmental flows.

Some environmental flows are released as contingency allowances to prevent long-lasting environmental damage when river or floodplain habitat is highly stressed. One objective is to support populations of native fish and their habitat, particularly during the spring-summer breeding season.

This IMEF project is designed to:

- investigate the effects of flows of water on the abundance of larval fish in regulated rivers
- assess the link between the amount of larval fish and the amount of juvenile fish in river water
- investigate the ability of environmental contingency allowances of water to restore the abundance of larval fish in regulated rivers.



The survival of hatchlings is being monitored at eight locations on the Namoi and Gwydir Rivers.

The results of the project will assist managers of water resources to select the best timing and volume of water for release from Copeton Dam as a contingency allowance to sustain a sufficient number of fish hatchlings.

The project will provide information that will be used to develop recommendations for the release of each environmental contingency allowance to protect the survival of larval fish in the Namoi and Gwydir rivers. Information gained from this project will also be applied to other regulated rivers.

Improving the environment for the natural life cycle of fish will encourage larger, more vigorous populations of native fish, which will promote a healthier, more natural ecosystem in our rivers.

All members of the community who use river water will benefit from improved river health, and water quality. Recreational fishers will benefit directly from increased numbers of fish.

Further reading

Environmental Contingency Allowance (ECA) Operations Advisory Committee 2007, *Gwydir Environmental Contingency Allowance Annual Release Program 2007–2008: Release Plan: Implementation Manual*, Department of Water and Energy.

Growns, I 2008, 'The influence of changes to river hydrology on freshwater fish in regulated rivers of the Murray-Darling basin', *Hydrobiologia*, 596, 203–211.

Humphries, P; Brown, P; Douglas, J; Pickworth, A; Strongman, R; Hall, K and Serafini, L 2008, 'Flow-related patterns in abundance and composition of the fish fauna of a degraded Australian lowland river', *Freshwater Biology*, 53, 789–813, doi:10.1111/j.1365-2427.2007.01904.x.

Project details

DWE coordinator: Dr Ivor Growns.

Study area: The Namoi and Gwydir rivers.

Duration: The project commenced in 2005, and will finish in June 2009.

Partnerships: The Fisheries Division of the NSW Department of Primary Industries.