

Assemblage structure of fish and acoustic tracking in the lower Goulburn River

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Abstract:

ARI has conducted fish surveys in the lower Goulburn River since 2003 to document the status of fish assemblages and examine patterns in recruitment. The surveys have shown that fish assemblage structure was temporally dynamic from season to season, and that patterns of recruitment were variable amongst species. Acoustic tracking has also been used to investigate the movement patterns of golden perch in the lower Goulburn and mid-Murray rivers. The tracking has shown that fish from the Goulburn River move out of the system and enter the Murray River at times, and vice versa. The implications of these findings are discussed with regards to management of the system.

Project Aim:

- 1) To document the status of fish assemblages and examine patterns in recruitment in the lower Goulburn River.
- 2) To investigate golden perch movement dynamics and its link to spawning and recruitment patterns in the lower Goulburn River.

Methods;

- 1) Fish populations are surveyed in the lower Goulburn River using boat-mounted electrofishing techniques. Egg and larval fish surveys are also conducted in the lower Goulburn River using fine mesh drift nets.
- 2) Golden perch in the lower Goulburn and mid-Murray rivers are tagged with acoustic transmitters and their movements monitored via acoustic receivers.

Preliminary Results

- 1) Fish assemblage structure was temporally dynamic from season to season, and patterns of recruitment were variable amongst species.
- 2) Fish from the Goulburn River moved out of the system at times and entered the Murray River, and vice versa. Most movement of fish coincided with increased flows.

Application to Management/works to be undertaken

- An ongoing ability to monitor and report on the response of fish populations to restoration activities in the lower Goulburn.
- Understanding movement dynamics of native fish will inform the development of strategies to deal with fish passage issues in the GBCMA jurisdiction.

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Project Photographs



Further Reading

Crook, D.A. and Koster, W.M. (2006). Temporal change in fish assemblages in the lower Goulburn River, south-eastern Australia. *Marine and Freshwater Research* 57, 303-308.

Koster, W., Crook, D. and Fairbrother, P. (2004). Surveys of fish communities in the lower Goulburn River. Annual Report 2003/2004. Report to Goulburn Valley Association of Angling Clubs. Arthur Rylah Institute for Environmental Research, Department of Sustainability and Environment, Heidelberg, Victoria.