Fish Ecology
SARDI AQUATIC SCIENCES

The Fish Ecology subprogram conducts research and provides advice across government, non-government organisations and the community regarding the ecology of freshwater and estuarine fish in southern Australia. The primary objective of the program is to undertake applied research on the ecology of freshwater and estuarine fishes that is relevant to natural resource management.

Overview

The subprogram conducts a broad range of research projects relating to fish movement and migration, the facilitation of fish passage, fish recruitment, flow related ecology, threatened species conservation and the habitat requirements of freshwater and estuarine fishes.

A key current project is the Murray River Fishway Assessment Project, a collaborative tri-state project that is quantitatively assessing the performance and long-term ecological benefits of constructing fishways on all weirs and barrages between Lake Hume and the sea. This research program has strong links with researchers in all Australian states, USA, UK and France. Other current projects involve novel research on the movement of adult and juvenile fish using radio and acoustic telemetry, passive integrated transponder (PIT) and trapping techniques, and the conservation of nationally listed threatened fish species.

Through these projects we work in close association with Primary Industries and Regions South Australia (PIRSA), the Department for Water (DFW), the Department of Environment and Natural Resources (DENR), the South Australian Murray-Darling Basin Natural Resource Management Board (SAMDBNRMB) and the Murray Darling Basin Authority (MDBA) to inform the conservation and restoration of aquatic ecosystems in the rivers and estuaries of southern Australia, including the Chowilla and Coorong, Lower Lakes and Murray Mouth Icon Sites.

Key Research Projects

2004 – Present: Investigation of fish ecology in the Chowilla Anabranch system, including distribution and abundance, and migration and recruitment ecology (funded by DFW/MDBA).

2006 – Present: Fish recruitment and movement in the Coorong and Lower Lakes of the Murray River in response to freshwater inflows (funded by DFW/MDBA).

2001 – Present: Sea to Hume Dam Fish Passage Project. A collaborative (SA, VIC and NSW) research project investigating the performance and ecological response to newly constructed fishways on the Murray River (funded by MDBA).

Recent Publications

Bice, C.M. and Zampatti, B.P. (2011) Engineered water level management facilitates recruitment of non-native common carp, *Cyprinus carpio*, in a regulated lowland river. *Ecological Engineering* **37**: 1901-1904.

Zampatti, B.P., Bice, C.M. and Jennings, P.R. (2010) Temporal variability in fish assemblage structure and recruitment in a freshwater-deprived estuary: The Coorong, Australia. *Marine and Freshwater Research* **61**: 1298-1312.

Stuart, I.G., Zampatti, B.P. and Baumgartner, L.J. (2008) Can a low-gradient vertical slot fishway provide passage for a lowland river fish community. *Marine and Freshwater Research* **59**: 332-346.

Zampatti, B.P., Bice, C.M. and Jennings, P.R. (2011) Movements of female congolli (*Pseudaphiris urvilli*) in the Coorong and Lower Lakes of the River Murray. South Australian Research and Development Institute (Aquatic Sciences), Adelaide. SARDI Publication No. F2011/000333-1. SARDI Research Report Series No. 577.

Leigh, S.J. and Zampatti, B.P. (2011) Movement and spawning of Murray cod (*Maccullochella peelii*) and golden perch (*Macquaria ambigua ambigua*) in response to a small-scale flow manipulation in the Chowilla Anabranch system. South Australian Research and Development Institute (Aquatic Sciences), Adelaide. SARDI Publication No. F2011/000646-1. SARDI Research Report Series No. 536.

Staff

Brenton Zampatti - Subprogram Leader
Brenton graduated from the University of Adelaide and has over 16 years experience conducting research on freshwater and estuarine fish ecology throughout southeastern Australia. Brenton has extensive experience managing large, applied research projects and providing advice on fish ecology, the ecological impacts of river regulation and environmental water requirements. Brenton has written over 50 publications, including scientific papers, technical reports and popular articles and has presented at many national and international conferences. Brenton regularly gives presentations to public forums and community groups, has lectured on freshwater fish ecology at a tertiary level and supervises Honours and PHD students.

Other staff

Chris Bice - Senior Research Officer
Sandra Leigh - Research Officer
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