

Invasive Species

SARDI Aquatic Sciences

This new SARDI Aquatic Sciences subprogram conducts research and provides practical advice to river managers and key stakeholders regarding the distribution, abundance, ecological impacts and management of invasive freshwater fishes such as common carp (*Cyprinus carpio*).

Research projects are conducted in collaboration with state and federal agencies, including the Murray Darling Basin Commission, the Invasive Animals CRC, AMLR & SA MDB NRM Boards, Murray Darling Freshwater Research Centre (VIC), NSW Fisheries, the University of Adelaide and the Adelaide City Council.

Overview & Research Projects

Presently, there are four key research projects within the subprogram:

1. 'Spawning migrations and attractant flows: Achilles' Heel exploitation of innate carp behaviours' – involves the development and evaluation of wetland carp separation cages and carp push traps for use at wetland inlets, and the testing of sensory attractants to optimise the uptake of carp into traps.

2. 'Evaluation of carp exclusion screens for use at wetland inlets' – evaluating aspects of the construction and configuration of wetland carp exclusion screens to inform the development of 'optimised' screens and operational standards to govern their future construction, use and management across the distribution of carp.

3. 'Development and implementation of an integrated carp management strategy for the Torrens Lake, Adelaide' – The strategy is informed by recent information indicating that carp exhibit distinct, predictable distribution and habitat selection patterns that can be exploited for control purposes.

4. 'Integrated carp management at Banrock Station wetland' (project has been on hold since Aug 2007 due to the ongoing drought conditions in the SA Murray) - envisaged to be the first to quantitatively demonstrate the effects of carp on the aquatic environment, and additionally, the ecological benefits their removal using an integrated approach.

We also advise and provide research services to other projects focussed on a) developing carp population models for the MDB, b) identifying carp recruitment 'hot spots', and c) quantifying the ecosystem impacts of trout on native fish communities within the Mount Lofty Ranges, SA.

Selected Publications

Smith, B., Vilizzi, L. and Conallin, A. (2007). Analyses of the combined 'fish' dataset from the 2004-7 River Murray Wetlands Baseline Surveys. 46 pp.

Thwaites, L. and Smith, B. (2007). Conceptual development of carp push traps. 20 pp.



Smith, B. and Hammer, M. (2006). Mapping the current distribution of native and exotic fishes within the South Australian Murray Darling Basin. 60 pp.

Smith, B. (2005). The state of the art: a synopsis of information on carp in Australia. 67 pp.

Smith, B. B., Sherman, M., Sorensen, P. W. & Tucker, B. (2005). Current-flow and odour stimulate rheotaxis and attraction in common carp. 31 pp.

Program Staff

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