

Propagation and Systems

SARDI AQUATIC SCIENCES

SARDI



The Propagation and Systems program conducts R&D activities to support the expansion of aquaculture production in South Australia. This involves research to propagate new species, improve hatchery rearing of marine finfish species and development of sustainable aquaculture production systems.

Overview

The program has conducted research projects that have been instrumental in the development of marine finfish aquaculture in South Australia. Early research was undertaken on the aquaculture potential for snapper, (*Pagrus auratus*) and this has led to the establishment of commercial enterprises that have since moved on to produce yellowtail kingfish, (*Seriola lalandii*) and mulloway (*Argyrosomus hololepidotus*). The program has also evaluated the aquaculture potential of King George whiting.

The program has also undertaken consultancy projects and has worked in Singapore to help in the design and construction of marine finfish broodstock holding, larval rearing and nursery facilities at the Marine Aquaculture Centre on St John's Island. Aquaculture system development work has more recently focussed on developing systems to allow production of species in saline groundwater. First efforts were undertaken at Cooke Plains Inland Saline Aquaculture Research Centre and more recently at SARDI where groundwater associated with dryland salinity was used. Recently the program developed the Waikerie Inland Saline Aquaculture Centre to research ways in which aquaculture could utilise waste saline groundwater from salinity interception schemes along the Murray River for finfish aquaculture.

Research Projects

Australian Seafood CRC: Southern bluefin tuna larval/juvenile rearing.

Australian Seafood CRC: Improvements in yellowtail kingfish, larval survival and quality.

2006/140 ACIAR: Achieving consistent spawning of captive yellowfin tuna (*Thunnus albacares*) broodstock at Gondol Research Institute for Mariculture, Bali, Indonesia.

Centre for Natural Resource Management: Research and foster investor attraction for establishment of commercial aquaculture parks aligned to major saline groundwater interception schemes (SIS's) in South Australia.

2004/212 Aquafin CRC-SBT Aquaculture Subprogram: Assessment of alternative platforms for southern bluefin tuna research.



Recent Publications

Flowers, T.J. and Hutchinson, W. 2004. Productive uses for saline groundwater using semi-intensive integrated aquaculture. SARDI Aquatic Sciences, Adelaide. pp 82.

Flowers, T.J. and Hutchinson, W. 2004. Preliminary studies towards the development of an aquaculture system to exploit saline groundwater from salt interception schemes in the Murray Darling Basin. SARDI Aquatic Sciences, Adelaide. pp 27.

Flowers, T.J. and Hutchinson, W. 2005. Overseas travel report: Inland saline aquaculture study tour USA and Israel, October 2004. SARDI Aquatic Sciences, Adelaide. pp 60.

Flowers, T.J. and Hutchinson, W. 2005. Characterisation of the effects of air extraction fans to ventilate aquaculture polytunnels at the Cooke Plains Inland Saline Aquaculture Research Centre, South Australia. SARDI Aquatic Sciences, Adelaide. pp 19.

Ham, J.M. and Hutchinson, W. 2003. Spawning and larval rearing research on King George whiting (*Sillaginodes punctata*) relevant to aquaculture and fisheries biology. FRDC Final Report. FRDC Project No. 97/314. pp 294.

Hutchinson, W., Black, I. and Buchanan, J. 2008. Assessment of alternative platforms for southern bluefin tuna research. Aquafin CRC project 1A.9 (FRDC Project 2004/212) pp 57.

Hutchinson, W. and Vandeppeer, M. 2004. Water quality: Effects and management on abalone farms. SARDI Aquatic Sciences, Adelaide. pp 65.



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Staff

Mr Wayne Hutchinson, Subprogram Leader

Mr Hutchinson completed an aquaculture related MSc at the University of Tasmania in 1994 and joined SARDI. He has extensive knowledge and experience in finfish propagation, larval and juvenile rearing, as well as in the design of aquaculture systems, in particular those involving recirculation. His research on striped trumpeter, snapper, King George whiting, mulloway and yellowtail kingfish has been closely aligned to the commercialisation of these species in South Australia. His development of aquaculture systems has included the commissioning of a number of research facilities in South Australia and another in Singapore, as well as problem solving at commercial aquaculture facilities both in Australia and overseas.

Dr Bennan Chen Research Scientist

Dr Chen has recently joined SARDI and Flinders University as a Marine Innovation South Australia appointment and a Postdoctorate with the Australian Seafood CRC. In this position he works closely with commercial participants researching the larval rearing of yellowtail kingfish and southern bluefin tuna. Although he completed his PhD at Flinders University in 2006 on the structural and functional development of yellowtail kingfish larvae, he has researched marine finfish larval rearing since 1986. He has experience covering a wide range of aquaculture species, including; snapper, black sea bream, redfin puffer, left-eyed flounder, sea perch, barramundi and brown-marbled grouper. He undertook much of this past research while at the Institute of Oceanology (Chinese Academy of Sciences), where various components included working with commercial aquaculture ventures.

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