

# THE NATIVE FISH AQUACULTURE INDUSTRY

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## 1) *Background to the Murraylands and South Australia Aquaculture Industries*

- Inland Aquaculture is probably the most diverse sector in South Australia, in terms of the variety of species grown and production methods employed. [www.pir.sa.gov.au/aquaculture/aquaculture\\_industry/inland\\_aquaculture](http://www.pir.sa.gov.au/aquaculture/aquaculture_industry/inland_aquaculture)
- There are currently around 250 inland aquaculture licence holders in South Australia growing a range of aquatic organisms including finfish; barramundi, Murray cod, rainbow/brown trout, black bream and crustaceans; yabbies and marron. Recently there has been a significant increase in the production of ornamental species and brine shrimp
- A number of different production methods are employed, the most popular being pond culture, recirculating aquaculture systems and flow through tank systems.
- The major species produced in South Australia in terms of value and production is Barramundi. Currently, the majority of facilities producing barramundi are fully enclosed, recirculating aquaculture systems, which are able to reproduce the environmental conditions required of this northern Australian fish. [www.pir.sa.gov.au/data/assets/pdf\\_file/0004/33925/barra\\_fs.pdf](http://www.pir.sa.gov.au/data/assets/pdf_file/0004/33925/barra_fs.pdf)
- Freshwater crayfish culture in South Australia has developed from a secondary income source for broadacre sheep and crop farmers to many viable stand-alone ventures. Two species of freshwater crayfish are cultured in South Australia; the Yabby (*Cherax destructor*) and the Marron (*Cherax tenuimanus*). Whilst the yabby is native to south eastern Australia, the marron was introduced from Western Australia in the 1960's.
- The farming of Rainbow and Brown Trout is a small but valuable contributor to the aquaculture industry in South Australia. The industry was one of the first forms of aquaculture to develop in the state based around recreational fish out facilities where tourists purchase fish they catch from purpose built dams. Now there are several significant commercial producers who are moving towards value adding their production. One producer has developed a golden coloured variant of Rainbow Trout that is keenly sought by Asian Buyers.
- Native finfish aquaculture is a relatively new but rapidly expanding industry in South Australia. Currently, most interest is being shown in Murray cod, with a number of growers progressing from using extensive farm dam systems to intensive recirculating systems with promising results. Trials with Jade Perch, Silver Perch and Golden Perch are being carried out by a number of aqua culturists as there is a growing demand for these species. [www.pir.sa.gov.au/data/assets/pdf\\_file/0019/33913/native.pdf](http://www.pir.sa.gov.au/data/assets/pdf_file/0019/33913/native.pdf)
- Total production of barramundi has remained relatively stable since 1998/99, when it reached the mid 200 tonne mark. The latest Economic Impact report (2002/03) shows production of the other major species remains variable with most having reached a peak and now settling to around average yearly production.
- Rising saline groundwater is a major agricultural problem in many regions of South Australia. Landowners are now investigating means of using this saline water, including the farming of aquatic organisms. The use of saline groundwater for the farming of aquatic organisms is a relatively new industry in South Australia, but interest is expanding with successful trials on a number of marine species including Snapper and Mulloway. [http://www.pir.sa.gov.au/data/assets/pdf\\_file/0007/33937/inland\\_marine\\_fs.pdf](http://www.pir.sa.gov.au/data/assets/pdf_file/0007/33937/inland_marine_fs.pdf)
- The "Bedford Groundwater Interception Project" previously managed by the Coorong District Council is one such venture and is located in Cooke Plains, approximately 100km south-east of Adelaide. This project has investigated the use of saline groundwater for the culture of various species of marine finfish and provided the R&D that is currently being commercialised by the Waikerie Inland Saline Aquaculture Centre where mulloway are successfully cultured.
- Besides growing fish, the Bedford project has also assessed the use of saline groundwater for beta-carotene production, salt production and the production of brine.
- The Murray Aquaculture Yabby Farm at Swan Reach have been growing yabbies since 1994 at their 130 acre almond property and offer guided tours etc

## 2) *Regional Development / Expansion Potential*

- **REPORT** – The Economic Impact of Aquaculture on the State and Regional Economies 2005 -2006  
[http://outernode.pir.sa.gov.au/\\_data/assets/pdf\\_file/0018/33930/economic\\_impact\\_new.pdf](http://outernode.pir.sa.gov.au/_data/assets/pdf_file/0018/33930/economic_impact_new.pdf)
- **REPORT** - SA Aquaculture Market Analysis Project  
[http://www.pir.sa.gov.au/\\_data/assets/pdf\\_file/0011/33887/market\\_analy.pdf](http://www.pir.sa.gov.au/_data/assets/pdf_file/0011/33887/market_analy.pdf)
- Inland Aquaculture in South Australia is set on a significant growth path. Existing aqua-culturists are moving towards value adding their products and working smarter to meet the demands of the growing market.
- The Murraylands can offer potential water re-use and ground-water inception schemes to promote investment in aquaculture. The Mallee Prescribed Wells Area could provide an opportunity to develop a new Aquaculture Industry
- Native finfish aquaculture has potential to contribute to the broad economic base of the Murraylands Region. The native fish, Murray cod, callop (golden perch), catfish and silver brim have a natural 'affiliation' to the Region.
- The Eastern States have a more mature aquaculture industry than South Australia and there are a number of 'models', using a variety of technologies both in recirculating, flow through and pond (dam) culture
- The Bedford Groundwater Interception Project has the opportunity to carryout further R&D leading to the commercialisation of opportunities including micro-algae for pharmaceuticals and bio-fuel, halophytes for food, oils and fibre, and desalination technologies.  
[www.sardi.sa.gov.au/pdfserve/fisheries/aqua/prop/factsheet3.pdf](http://www.sardi.sa.gov.au/pdfserve/fisheries/aqua/prop/factsheet3.pdf)
- Harvested Carp mixed with a protein grain to produce a compounded fish meal replacement for aquaculture. The grain provides an additional source of protein in the aquaculture food product (see Report 'Mobile Carp Processing Feasibility Study')
- There is the opportunity to create a Murray cod historical museum combined with a significant recirculating culturing system showcasing the wonderful River Murray history and fish culture, as well as supporting the native fish restocking of the Murray River. This project could also provide a strong tourist drawcard for the Region.

## 3) *Identifying Investment Potential*

- The potential is for higher end investment and the use of recirculating systems to maintain control over all the variables and environmental requirements / demands (perhaps using recycled water).
- Institutional investors in Europe and USA are strong investors in the aquaculture sector and there are indicators that interest from managed investment funds in Australia could accelerate.

## 4) *Challenges*

- The market for aquaculture products is increasing every year; however it is also becoming more demanding with respect to quality and food safety. Farmed fish is more expensive to produce than wild caught.
- Aquaculture is a business that demands knowledge from day one and information, training, mentoring and workshops for new and existing aqua-culturists is needed to help them meet the challenges presented by a fast growing, intelligent seafood consumption sector.
- Model farms, quality assurance programmes and networking will help improve the efficiency and profitability of the aquaculture industry whilst inculcating environmental care and social responsibility.

- Given the stern realities of our limited water resources it is imperative that we maximise the value of our aquaculture industry.

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