



Potential for eel aquaculture in South Australia

Although there are four species that are native to Australia only two are considered for commercial aquaculture. They are the shortfin eel, *Anguilla australis* and the longfin eel, *Anguilla reinhardtii*. The shortfin eel is a temperate species and is found in the south, south-eastern areas of Australia ranging from Southern Queensland through to Tasmania. Its closely related cousin, the longfin eel, is more of a sub-tropical species, however does have a wide distribution from northern Queensland down to the northeastern tip of Tasmania. The shortfin eel resides in still waters including swamps and streams while the longfin eels prefer running waters.

Breeding and life cycle

Both species of eel have quite complex life cycles with life stages that exist in both fresh and salt water. Eels breed in the Coral sea at depths of around 300m with each female producing around 5 to 10 million eggs. Once the eggs hatch, ocean currents carry the larvae to the continental shelf where they develop into glass eels. Glass eels then make their way into estuaries via currents and tides during late autumn and spring for shortfin eels and summer and autumn for longfin eels. From here, glass eels develop pigment and move towards inland bodies of water where they are now known as elvers. Here the elvers mature over several years (8 to 12 years for males and 10 to 30 years for females) into adult eels which then migrate back down towards the estuaries to commence their migration to the Coral sea where the life cycle begins again. These mature eels are referred to as Silver eels due to their colour and they do not feed.

Status of eel aquaculture in Australia

The farming of eels currently occurs predominantly in Queensland, Victoria and New South Wales. Eels are cultured using both ponds and recirculating aquaculture systems. In ideal conditions eels grow to market size (150 to 200g) in around 12 to 18 months.

As the life cycle for both species has not been closed and hence there is no artificial production of juveniles, the eel aquaculture industry is reliant on the capture of glass eels and elvers by licensed fishers to supply the farmers with stock to culture. The current production of eels in Australia is 230 tonnes worth around \$2.7 million.

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Currently there is no commercial aquaculture of eels in South Australia. This is mainly due to a lack of presence of glass eels and elvers in South Australian waters and thus farmers would have to rely on obtaining stock from other states. Unfortunately harvested numbers of glass eels and elvers can be inconsistent and with stock being allocated to the eastern states first, numbers that would be available to South Australia may be unreliable and therefore may not support an eel aquaculture industry in this state.

Further information

As eel aquaculture is further developed in the eastern states, relevant authorities have further information on this subject. This information can be downloaded from the following website.

- NSW Fisheries <http://www.fisheries.nsw.gov.au/aquaculture/eels.htm>
- QLD Dept Primary Industries <http://www.dpi.qld.gov.au/fishweb/2691.html>
- New Rural Industries <http://www.rirdc.gov.au/pub/handbook/eels.html>

Alternatively a number of books are available on the aquaculture of eels. Aquaculture SA have a list of suppliers available on the website www.pir.sa.gov.au/aquaculture or by calling the office on 08 8226 0314.

The Inland Aquaculture Association of South Australia can also provide support for prospective aquaculturalists. Their contact details are as follows.

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