

Mulloway



Mulloway or Jewish, are one of the fish species most commonly targeted by fishers. Mulloway can be found along the east coast of Australia in estuaries, reefs, beaches as well as offshore. They use these areas at different times of their lifecycle, so are sensitive to changes in a wide range of habitats. Read on to find out more ...

Mulloway (*Argyrosomus japonicus*) are found in coastal waters from the Burnett River, Queensland, to North West Cape, Western Australia.

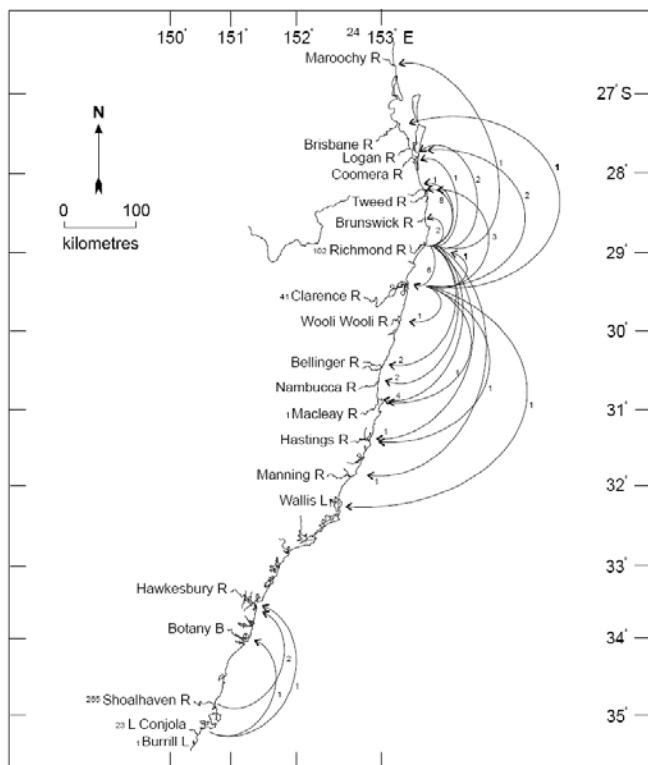


Figure 1: The movement of mulloway along the northeast coast of NSW, showing the importance of the Richmond and Clarence estuaries for sustaining the population along this stretch of coastline.²

Mulloway Habitat Fact File

Mulloway use both estuaries and marine habitats.

Mulloway can travel more than 200km between estuaries.²

Estuaries with seagrass and mangroves provide shelter and food for crustaceans and small fish which are important food sources for mulloway

Coastal development affects both estuaries and coastal waters, both of which are important habitat for mulloway.

Improving water quality in estuaries will help support the growth and development of juvenile mulloway.

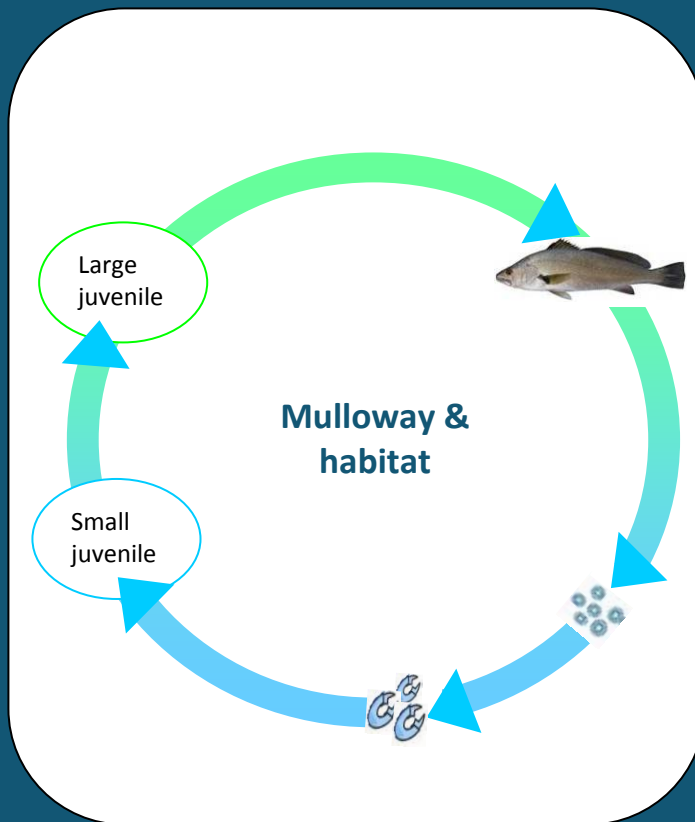


Adult Mulloway feed on squid and fish.² Seagrass, mangroves, sand and mud provide shelter and food for the animals mulloway feed on.



Mulloway use nearshore coastal waters (less than 100m depth) and estuaries³

Large juveniles can be found in deep and shallow waters overlying mud⁵ and in the lower reaches of estuaries.³



Mulloway spawn from January to April at sea and in lower reaches of estuaries.² They spawn more than once in a breeding season⁴

Juveniles grow rapidly to 35 cm long in 1 year and 87-90cm long in 5 years² In NSW, males reach maturity at 51 cm long (2+ years old) and for females at 68 cm (3+ years old)³



Larvae up to 10 mm long can be found in estuarine and coastal waters between January and April.²

Juveniles are found in estuaries and nearshore coastal waters, including surf zones.² Juveniles feed on crustaceans and small fish.

Threats to mullock habitat

Mullock are reliant on estuaries as juveniles. The abundance of mullock in an estuary is linked to its salinity and turbidity, the amount and timing of freshwater flows and the depth of water.² The prey that mullock feed on can also be affected by changes to an estuary. Without suitable prey, juvenile mullock will not survive.



If not well managed, urban development can increase the amount of sediment and pollution in an estuary, affecting food availability for mullock.

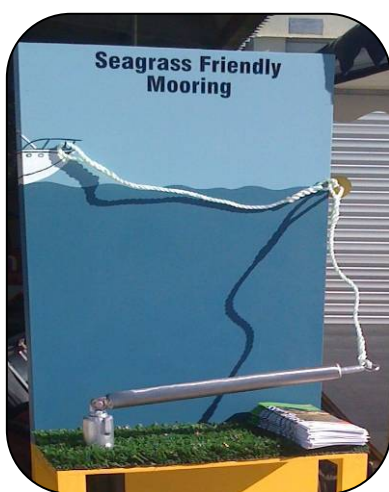
Estuaries have been affected by a range of human activities including recreation, urban development and vegetation clearing. The impacts of these activities continue to affect the habitat mullock use. The activities that have the most devastating impact to the habitat of mullock in NSW are summarised in the table below.

Threats to habitat	Impact on mullock
Urban development, agriculture and construction along coastlines and estuaries - Run off & pollution	<ul style="list-style-type: none"> ✘ Uncontrolled run-off from construction sites can add chemicals and pollution to an estuary resulting in poor water quality. Mullock rely on good water quality for growth and development of juveniles. ✘ Poor water quality can also reduce the abundance of mullock prey such as crustaceans and small fish.
Sedimentation	<ul style="list-style-type: none"> ✘ Fills holes that adult and juvenile mullock use to ambush prey ✘ Smothers aquatic vegetation that provides habitat for small fish, crustaceans and squid that are part of the mullock diet ✘ Build up of sediment can reduce the depth of water and therefore restrict access to habitat and food upstream of the estuary for juvenile mullock

Ensuring the best possible water quality in our estuaries will help to improve mullock populations. Good water quality means healthy seagrass and mangroves, which means healthy populations of the small fish and crustaceans that make up an important part of the diet of juvenile mullock. A good supply of food, and shelter, will mean more juvenile mullock survive and thrive.

What you can do

- ✓ Be mindful of what you wash down the stormwater drain
- ✓ Help plant vegetation along an estuary or sand dunes to stabilise sediment and sand and to reduce erosion
- ✓ Put the big fish back
- ✓ Continue to abide by bag and size limits
- ✓ Visit www.fishhabitatnetwork.com.au and find out what other fishers are doing to improve their local fish habitats
- ✓ Join the Fish Habitat Network (fish.habitat@industry.nsw.gov.au)



References

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- 2 Silberschneider, V. and Gray, C.A. 2007. Synopsis of biological, fisheries and aquaculture- related information in mullocky (*Argyrosomus japonicus*) (Pisces: Sciaenidae), with particular reference to Australia. *Journal of Applied Ichthyology*. Vol. 24 Issue 1 pages 7-17
- 3 Scandol, J., Rowling, K. and Graham, K., Eds 2008. Status of fisheries resources in 2006/07. NSW Department of Primary Industries. Cronulla, 334pp.
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- 5 State Pollution Control Commission. The Ecology of fish in Botany Bay. Environmental control study of Botany Bay. 1981.

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This Factsheet was prepared by Amy Kalatzis and Liz Baker, as part of the Recreational Fishers' Education Project, a partnership between Industry and Investment NSW and Southern Cross University, and funded by the NSW Government through its Environmental Trust. This factsheet can be used and distributed for education purposes.