

# Fish habitat

## Vasse-Wonnerup wetlands

**The Wonnerup Inlet and Deadwater are important nursery habitat for recreational and commercial fish species**

Image courtesy Department of Water

The Vasse-Wonnerup wetlands provide important habitat and nursery grounds for over 30 different marine and estuarine fish species. These include important recreational and commercial species such as black bream, sea mullet, yellow-eye mullet and blue swimmer crabs. More than 80 per cent of the recreationally targeted fish species in Australia are dependent on estuaries for part of their life cycle. Blue swimmer crabs and mullet spend portions of their life cycle in the Vasse-Wonnerup wetlands before migrating back to the open ocean to spawn while black bream complete their entire life cycle in the wetland system. There are seven current commercial licences authorised to fish in the Vasse-Wonnerup wetlands, however only one licence is currently active. The Wonnerup Inlet and Deadwater are highly valued among local recreational fishers.

Image courtesy Murdoch University



**Researchers, together with local residents and students from Busselton Senior High School, fitted fish with acoustic tags that could be detected by 'listening stations' placed throughout the wetlands.**

## Monitoring and research

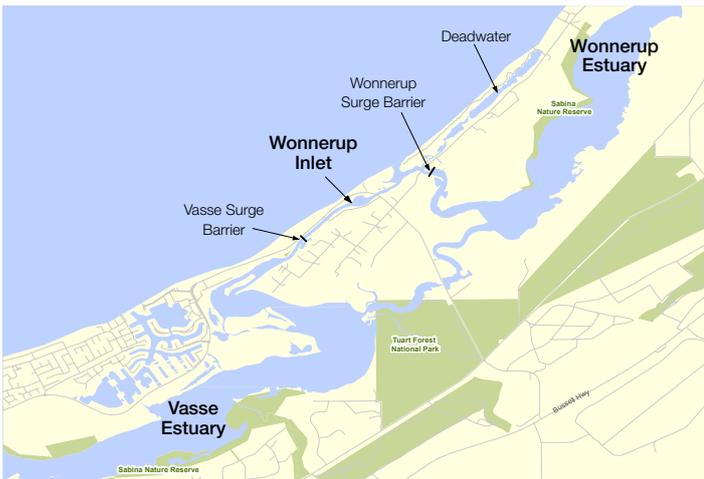
Research has been conducted by Murdoch University in the Vasse-Wonnerup system since 2012 to determine the key fish species and their populations. The studies found both the species and number of fish varied throughout the system and across different seasons. Water quality, particularly salinity, and breeding cycles of the different species were thought to be the main reasons for variations in fish populations. The studies also recorded three feral fish species - the eastern gambusia, yabby and domestic goldfish. Information from these studies has been critical in improving knowledge of fish of the Vasse-Wonnerup wetlands.



## Black bream

Black bream is an important recreational species and the population within the Vasse-Wonnerup system is potentially genetically unique. Studies have shown that the black bream living in the Vasse-Wonnerup have one of the slowest growth rates in the state. This information, together with concerns for the long-term viability of black bream following a major fish kill in 2013, helped to initiate further research into their reproduction, growth and movement patterns.

Movement of individual fish throughout the system is monitored to provide information about preferred habitats and spawning areas in response to changing environmental conditions. Acoustic tracking of black bream and mullet is being carried out by Murdoch University. The research will greatly assist future management of this important recreational fish species.



## Fish kills

Major fish kill events have been recorded in the Vasse-Wonnerup wetlands since 1905 where local papers reported the death of hundreds and thousands of fish of all kinds. One to two fish kill events have occurred per decade since then. Most fish deaths have occurred during periods of warm weather and are generally attributed to lack of oxygen in the water during times of high algal growth. The majority of major fish kills have occurred in the Vasse Estuary upstream of the surge barriers (floodgates) and less frequently in the Wonnerup Inlet. No major fish kills have been recorded in the Wonnerup Estuary. Artificially opening the Wonnerup Inlet bar and opening fish gates within the surge barriers is undertaken during the summer-autumn period to reduce the risk of fish kills.

## What the future holds

Reducing the severity and frequency of major fish kills in the Vasse-Wonnerup system is of high priority to ensure the long-term survival of estuarine species such as the black bream. Improving our understanding of fish biology, reproduction and movement will influence future management decisions regarding opening of the Wonnerup Inlet bar and fish gates on the surge barriers to enhance critical fish habitat.

Climate change will continue to place pressure on the wetland system, with reduced rainfall impacting on environmental parameters such as water temperature and salinity. A collaborative approach to management is crucial to ensure the ongoing protection of fish and fish habitat.

## More information

More information about the Vasse-Wonnerup wetlands is available under Resources on the GeoCatch website.

[www.geocatch.asn.au](http://www.geocatch.asn.au)

## Be involved

Community members will have the opportunity to be involved in the development of a management plan for the Vasse-Wonnerup wetlands. Opportunities will be promoted on the GeoCatch website or contact GeoCatch.



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