## The Vasse-Wonnerup

The Vasse-Wonnerup Estuary is a Ramsar listed wetland of global importance and is home to over 37,000 birds, many of which migrate here annually from their breeding grounds in the Northern Hemisphere. They come to the wetlands to feed on the copious supply of aquatic organisms and renew their energy stores for their return journey halfway across the world.

Fishes are an important component of the diet of some waterbirds and it is not surprising that fish populations in the Vasse-Wonnerup are highly abundant. Over 30 different species of native fishes inhabit the system, including popular angling targets such as Black Bream and King George Whiting.

## A catchment under threat

In recent years, the catchment has come under increasing threat from declining water quality and excessive nutrient runoff which has caused numerous fish kills. Flow reductions due to diversion drains and declining rainfall caused by climate change have exacerbated these impacts.

The introduction of Goldfish in the Vasse River is another threat to the ecosystem. Goldfish stir up sediment as they feed, and the growth of cyanobacteria is stimulated upon passage through their gut, which contributes to algal blooms. Other introduced species like the Eastern Gambusia and Yabby compete with, consume, and harass native species.

## What's being done?

Scientists from Murdoch University have been controlling feral Goldfish in the Vasse River since 2003. In 2012, they began research into introduced and native species in the Vasse-Wonnerup catchment including mapping seasonal distributions, studying movement patterns, determining salinity tolerances, and continuing the removal of feral species. As of mid-2013, almost 2,000 Goldfish have been removed from the Vasse River and estuary.

Scientists from Murdoch University monitor fish populations in the Vasse Estuary using a seine net (above); electrofishing for feral Goldfish in the lower Vasse River (below).

## What can I do to help?

- Never release exotic species into natural waterways; this can cause major harm to aquatic ecosystems and it is illegal.
- Design ponds and dams so exotic species cannot escape into natural waterways during heavy rain or flooding.
- Dispose of unwanted aquatic pets by returning them to the place of purchase, or by placing them in a bag of water in the fridge until motionless and then freezing the bag.
- Dispose of aquarium water on dry land as it can harbour pest species, parasites, and diseases.
- Report sightings or captures of feral species in the wild to **FISHWATCH** on 1800 815 507; don't return them to the water after capture.
- Instead of exotic species, keep local native species such as Western Pygmy Perch which predate on the larvae of pest insects including mosquitoes and midges.
- Circulate this leaflet among your local community to promote awareness of feral aquatic species and the damage they cause.

---


**Photographs and text**

Mark Allen, Stephen Beatty, James Tweedley & David Morgan (Murdoch University); Gerry Allen; Rudie Kuiter.


For more information visit www.freshwaterfishgroup.com

CARING FOR OUR COUNTRY


This leaflet is an extension of a project carried out under the Commonwealth's Caring For Our Country initiative. Publication of this leaflet was funded through a Coastwest grant provided by the Western Australian Planning Commission.

Printed on 100% recycled paper

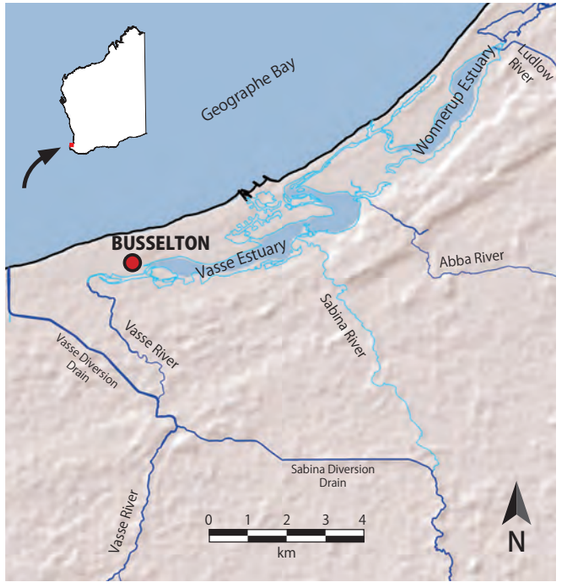

# FERAL AQUATIC INVADERS OF THE VASSE - WONNERUP

Coastwest


Freshwater Fish Group & Fish Health Unit

www.freshwaterfishgroup.com

# Rivers and resident species of the Vasse–Wonnerup




The Vasse-Wonnerup Estuary is fed by four main river systems (from west to east): Vasse, Sabina, Abba, and Ludlow. A total of six freshwater fish species (four native, two introduced) and three freshwater crayfish species (two native, one introduced) have been recorded in these rivers. The most common native species are the Western Minnow and the Nightfish. Additionally, a small number of primarily estuarine species also commonly occur in the lower reaches of these rivers (see lower right panel).

Introduced species include the widespread Eastern Gambusia which is highly abundant, especially during summer. This North American species was introduced widely throughout Australia during the 1930s as a biological control for mosquitoes. However, it is not as effective at this task as native fishes like the Western Pygmy Perch, and it competes with and nips the fins of native fishes. The Goldfish (of Asian origin) was discovered in the Vasse River in 2003 but was probably introduced during the 1990s. The Vasse population has the fastest recorded growth rate of any wild population in the world. It is a remarkably hardy and adaptable species and a serious pest both here in Australia and abroad. The Yabby (from eastern Australia) is uncommon in the Vasse-Wonnerup catchment.

## FERAL SPECIES

Eastern Gambusia (*Gambusia holbrooki*) - female

Eastern Gambusia (*Gambusia holbrooki*) - male

Goldfish (*Carassius auratus*) – numerous colour morphs are present

Yabby (*Cherax destructor*)

## Other feral fishes occurring in south-western Australia

These species, and a number of other exotics, have not been recorded in the Vasse-Wonnerup but do occur in streams and wetlands in other parts of south-western Australia. Many of them are popular ornamental species and were probably released into the wild, intentionally or otherwise, by members of the general public. Sightings or captures of these or other exotic species (not shown here) in fresh waters of the Vasse-Wonnerup or elsewhere should be reported to FISHWATCH on 1800 815 507.

Pearl Cichlid (*Geophagus brasiliensis*)

One-spot Livebearer (*Phalloceros caudimaculatus*)

Rosy Barb (*Puntius conchonius*)

Redfin Perch (*Perca fluviatilis*)

Common Carp (or Koi) (*Cyprinus carpio*)

Spangled Perch (*Leiopotherapon unicolor*)

## NATIVE SPECIES

Western Pygmy Perch (*Nannoperca vittata*)

Western Minnow (*Galaxias occidentalis*)

Nightfish (*Bostockia porosa*)

Western Mud Minnow (*Galaxiella munda*)

Koonac (*Cherax preissii*)

Gilgie (*Cherax quinquecarinatus*)

### Native estuarine & freshwater species

Sea Mullet (*Mugil cephalus*)

Western Hardyhead (*Leptatherina wallacei*)

Southwest Glass Shrimp (*Palaemonetes australis*)

Swan River (or Bluespot) Goby (*Pseudogobius olorum*)