

# This small alien fish is taking over Australia's waterways!

## What is Eastern gambusia?



Eastern gambusia (*Gambusia holbrooki*)  
– male gambusia are much smaller than the female.

### What is Eastern gambusia?

Gambusia are a small fish introduced to Australia in 1925 to control mosquitoes. However, mosquito larvae don't feature much in its diet, and native fish are actually much better at controlling mosquitoes.

Gambusia prefer still and slow moving water such as wetlands, weir pools, lakes, farm dams and billabongs. They readily move into new water bodies and are now distributed throughout much of Australia.

Gambusia are also known by many other names:

- » Mosquito fish
- » Guppy
- » Plague minnow
- » Top minnow

### Why is gambusia a problem?

#### Gambusia are prolific breeders

- » Gambusia can breed up to nine times in one season, producing 50–300 live young each time.
- » Females can breed from two months of age.
- » Ten adult female fish can produce 5 million offspring in six months!

#### Gambusia are aggressive predators

- » They attack, kill and eat juvenile native fish, waterbugs, frog eggs and tadpoles.
- » They nip at much larger fish, including the iconic Murray cod, causing fungal infections and death.
- » They compete with native fish for food.
- » Gambusia have been implicated in the decline of at least nine fish species and more than ten frog species.

#### Gambusia are tough little fish

Gambusia have a very high tolerance for poor water quality, especially extremes in temperature and salinity, as well as low dissolved oxygen and dirty water.

#### Identifying gambusia

Gambusia tend to be found in the top 15 cm of water bodies and are usually seen around the water's edge.

There are a few key features that help to tell gambusia apart from small native fish species:

- » Gambusia have only one rounded dorsal fin.
- » Gambusia have a flattened and pointed head with an upturned mouth.
- » Pregnant female gambusia have a large black blotch just above the vent. They reach a maximum of 60 mm and males 35 mm.

### Can you spot the difference?



**gambusia:** pointed head that is flattened on top | single dorsal fin | black blotch on pregnant female



**Midgely's gudgeon:** rounded head | two dorsal fins

Small native fish such as Midgely's gudgeon (*Hypseleotris* sp.) shown above can be easily confused with gambusia (top).

All images: Gunther Schmida

# What is Eastern gambusia?

*This small alien fish is taking over Australia's waterways!*

## Control and Management

Currently, there are minimal effective control options for managing gambusia in open waterways. Once pest fish become established in a waterway it can be almost impossible to eradicate them.

Early stages of research experiments by the Department of Sustainability & Environment (Victoria) are showing that native fish populations can recover if gambusia can be totally removed from a water body.

Protecting areas that are gambusia free is the best way of preventing further spread.

## What is currently being done?

Gambusia is listed as noxious in NSW. It is illegal to sell or possess gambusia, even in aquaria, outside the greater Sydney area.

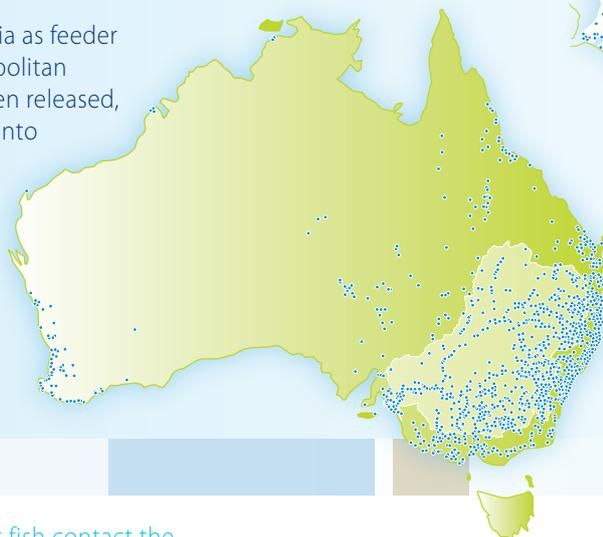
The introduction of fish, including gambusia, to waters outside of their natural range has also been listed as a key threatening process in NSW under the *Fisheries Management Act 1994*. The listing acknowledges the impact on native fish and helps develop strategies to reduce this impact.

## Where are gambusia found?

Gambusia are widely distributed throughout Australia, and are found in every river of the Murray–Darling Basin.

### Distribution of gambusia in Australia

In NSW, the sale of gambusia as feeder fish is illegal outside Metropolitan Sydney. Gambusia have been released, accidentally or intentionally, into waterways, spreading their range.



## What can you do?

Report sightings of pest fish, by either:

» Phone – (02) 4916 3877 (recorded 24 hour service)

» Complete the online form at: [www.dpi.nsw.gov.au/fisheries/pests-diseases/aquatic-pest-sighting](http://www.dpi.nsw.gov.au/fisheries/pests-diseases/aquatic-pest-sighting)

» Or email [aquatic.pests@industry.nsw.gov.au](mailto:aquatic.pests@industry.nsw.gov.au)

**Do not transport or release gambusia; this is the main reason for their continued spread.**

## Healthy habitat = healthy native fish populations

Healthy habitat is critical to improving native fish populations.

Native fish populations in the Murray–Darling Basin are estimated to be at just 10% of pre-European levels.

The Conservation Action Unit is part of NSW Fisheries and its function is to rehabilitate fish habitat and native fish populations in NSW.

Healthy habitat will help native fish to be more resilient against the impacts of alien fish.

## General information regarding all live fish in your possession:

- » Do not release any alien fish into a waterway – it is illegal.
- » Design fishponds so that plants, snails, fish or eggs can not escape during heavy rains, and screen all overflow areas.
- » Don't return pest fish to the water – if you catch a pest fish dispatch it humanely and utilise or dispose of it appropriately.

## Further reading:

[www.dpi.nsw.gov.au/fisheries/pests-diseases/freshwater-pests/species/mosquito-fish](http://www.dpi.nsw.gov.au/fisheries/pests-diseases/freshwater-pests/species/mosquito-fish)

[www.dpi.nsw.gov.au/fisheries/habitat/publications/threats/introduction-fish-fresh-waters](http://www.dpi.nsw.gov.au/fisheries/habitat/publications/threats/introduction-fish-fresh-waters)

[www.dpi.nsw.gov.au/fisheries](http://www.dpi.nsw.gov.au/fisheries)

Freshwater pest fish in New South Wales & NSW Primefact 1060 (2011)



## Distribution of gambusia in the Murray–Darling Basin

Their current distribution also includes most coastal drainages in NSW, Queensland and Victoria. They're found in Western Australia and the Northern Territory and have been recorded in Tasmania.

For more information on pest fish contact the **Aquatic Biosecurity Unit** at [aquatic.pests@industry.nsw.gov.au](mailto:aquatic.pests@industry.nsw.gov.au) or 02 4982 1232.

For more information on aquatic habitats and aquatic rehabilitation contact the **Conservation Action Unit** on 02 6881 1270.