

Anchor Worm and Native Freshwater Fishes

Every living organism has parasites and fishes are no exception. Parasites are small organisms that live in or on another organism, known as the host, which provides the parasite with food and shelter.

A healthy river ecosystem is one which has lots of parasites. In Western Australia there are at least 45 species of parasites in our rivers. Most of these are native species which don't cause much harm and there are few signs of disease to native freshwater fishes. There are also, however, a number of introduced parasites that can be very nasty for our native freshwater fishes. One of the worst of these is the anchor worm (*Lernaea cyprinacea*).

What is anchor worm?

Anchor worm is a parasite of the skin and gills of fish. The parasite was first found in the Canning River in 2008 and has since been found in the Serpentine and Murray Rivers, south of Perth. Although originally a parasite of goldfish and carp, anchor worm has a very wide host range and has been found on more than 45 species of freshwater fishes throughout the world. Infections in native fishes cause large wounds, bleeding, castration and high death rates.

Anchor worm profile



Anchor worms mate during the last stage of their development. After mating, the female burrows into the flesh of the fish host and attaches with an anchor-like process on the head, leaving the unsegmented, wormlike body protruding from the skin or gills of the fish.

Photo: Fish Health Unit, Murdoch University

How is anchor worm spread?

Anchor worm was probably introduced to rivers in south-western Australia through the accidental or deliberate release of freshwater fishes, such as goldfish and carp. There are currently 13 -15 species of introduced freshwater fishes in rivers in the south-west of Western Australia.

Is this a problem for native freshwater fishes?

Anchor worm causes Lernaecosis, a parasitic disease of freshwater fishes. Anchor worm is much more capable of causing disease in native freshwater fishes than in its natural hosts, goldfish and carp. This is because native freshwater fishes have limited defence behaviour and a weak immune response.

In general, introduced freshwater fishes are predators of native fishes, compete with native fishes for food, decrease water quality and introduce diseases. Anchor worm poses a significant additional threat to native freshwater fishes in the south-west of Western Australia, where 82% are unique local species and 55% of species are endangered.

What can we do about alien parasites of native freshwater fishes?

In an open, natural river system it is not feasible to eliminate anchor worms. The only way to stop the spread of this parasitic disease is to:

- Stop releasing ornamental fishes, such as goldfish or carp into rivers, lakes or waterways.
- Report fishes with parasites to WA [PestWatch](#) at www.fish.wa.gov.au.

Did you know:

- Anchor worms are not actually worms, they are a freshwater copepod. A copepod is small crustacean found in nearly every freshwater habitat.
- Only the female anchor worm attaches itself to the fish. The male attaches itself to the female.
- The parasite is named after its anchor shaped head, which burrows into the muscles of the host.

Find out more:

[Hassan, Marina H., Beatty, S.J., Morgan, D.L., Doupe, R.G., and Lymbery, A.J. \(2008\) An introduced parasite, *Lernaea cyprinacea* L., found on native freshwater fishes in the south west of Western Australia. *Journal of the Royal Society of Western Australia*, 91 \(2\). pp. 149-153.](#)

About Healthy Wildlife

The 'Healthy Wildlife Healthy Lives' – A One Health project aims to educate people about interaction with wildlife in urban areas, particularly how people and domestic animals spread diseases to wildlife, such as birds, quenda (bandicoots), native fish, bobtails and kangaroos. The project informs people about how to avoid harm to wildlife, create positive interactions with wildlife and protect and conserve the environment. The aim is to keep wildlife healthy for a healthier world.

The project is a partnership between Eastern Metropolitan Regional Council and Murdoch University, supported by Lotterywest.

VISIT: www.healthywildlife.com.au