

# Argulus

## Management in stillwater trout fisheries

### Argulus in trout fisheries

Argulus is a crustacean parasite, commonly known as the “fish louse”. In trout fisheries heavy infections cause a rapid loss of condition and even death. Even moderate Argulus infections can reduce rod catches, cause distress to the trout and threaten the economic viability of fisheries.

This fact-sheet explains why Argulus is so damaging to trout fisheries and what steps a fishery manager can take to prevent or manage the parasite.



Fig. 1

### What is Argulus?

Argulus are common ectoparasites (external parasites) of freshwater fish. They are found in fisheries throughout the UK. Currently, three species of Argulus have been recorded in the UK – *A. japonicus*, *A. coregoni* and *A. foliaceus*, which is the most common. Adult parasites are flat, round and light green-brown in colour. They are often described as jelly-like, and are approximately 0.5-1.0cm in diameter. Argulus attach firmly to the skin and fins of their host with a pair of characteristic round suckers (Fig. 1 and Fig. 2). The parasites' small black eye-spots are also distinctive features (Fig. 1).

### How do Argulus affect trout?

Argulus can cause considerable damage to trout through their aggressive attachment and feeding behaviour. They feed by inserting a long spine-like structure (the stylet; Fig. 2) into the skin, which breaks down tissues through the secretion of enzymes. The repeated puncturing of the skin, combined with activity of the parasites' serrated mouth-parts, can cause substantial damage and irritation.

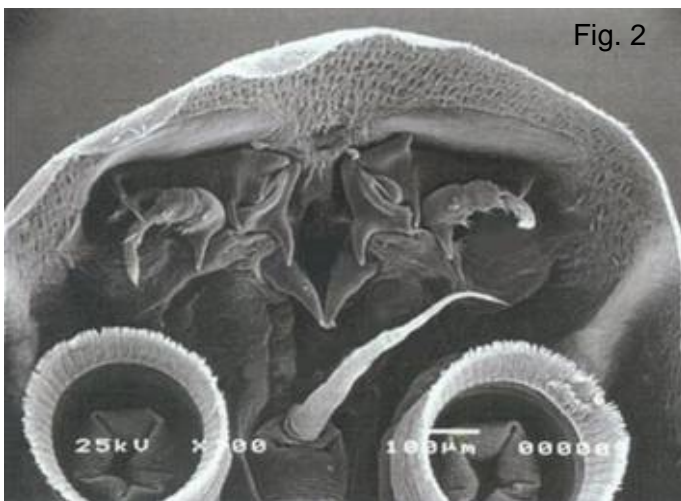
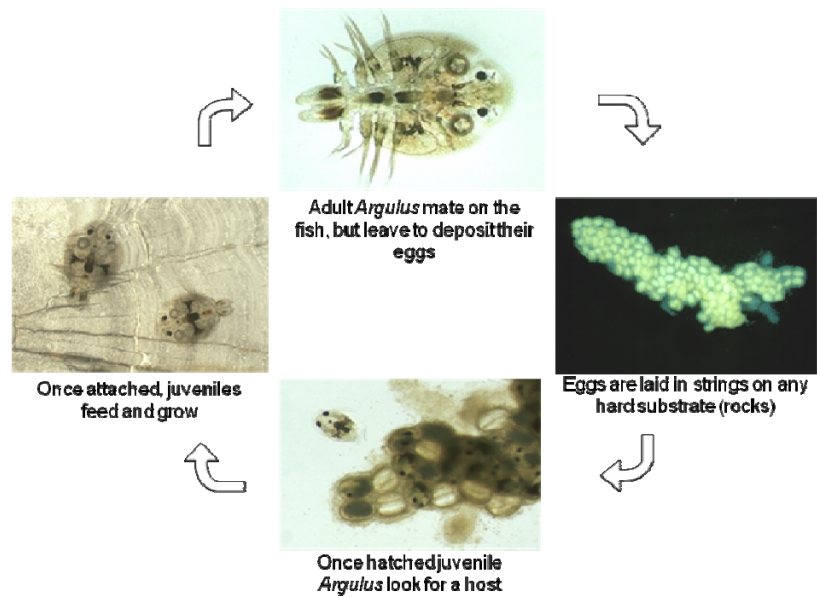


Fig. 2

Healthy trout will tolerate light parasite burdens with few adverse effects. However, heavily infested fish can harbour many hundreds of parasites and quickly become debilitated. Trout suffering from Argulus infestations often show signs of irritation, such as repeated jumping. They may shoal tightly together or congregate at the fishery margins or in areas of high water movement, such as an inlet. Individuals may stop feeding, become lethargic, lose condition and darken in colour.

## How do Argulus reproduce within the fishery?

Argulus follow a seasonal cycle of reproduction and development. Egg laying usually begins when temperatures exceed 10°C and cease during winter. Populations typically increase throughout the year, being at their greatest toward the end of the summer. Parasite numbers decline with the onset of winter, although all developmental stages (including egg strings) can over-winter.



The life cycle of Argulus

## How can Argulus infections be managed?

The use of chemical treatments in a fishery is very difficult. Consent is unlikely to be given for any chemical that would be effective. It could be harmful to the handler, the fish and the environment. Treatment is only a short term measure as it does not change the reasons why Argulus has become a problem in that fishery.

A number of fishery management measures can help reduce the impact of the parasite and prevent the build up of infections. The points below give the available options. The best options to take will depend on conditions in your fishery. If in doubt, get advice from your local Environment Agency fishery officer.

### Careful stock management

High stock densities increase the risk of Argulus problems. Careful management of the stock can reduce the risk of disease outbreaks.

### Maximise stock turnover

Rapid stock turnover reduces susceptibility to infection and limits parasite development. Monitor stock levels to maximise stock turnover.

### Trickle stocking

Trickle stocking, rather than batch stocking will increase stock turnover and minimise host parasite contact time.

### Stop or minimise catch and release

This will maximise stock turnover and reduce the risk of poor fish condition and stress.

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## **Minimise stock levels during winter**

Reducing stocks, including coarse fish, during the winter will reduce the survival of parasites over the winter period.



## **Maintain low stock during hot periods**

Hot conditions are stressful to trout, but favour rapid parasite reproduction. Don't stock during these periods and stop catch and release.

## **Drop water levels to expose egg strings**

Allowing water levels to drop will expose and kill parasite eggs laid on hard substrates.

## **Remove excess weed, improve water clarity and increase depth**

Whilst these measures may not prevent infestations, they can reduce the risks of Argulus outbreaks.

## **Drain and de-stock**

In very extreme Argulus problems, the only option may be to drain and de-stock the fishery. However, this is drastic and may only be necessary when other management options are not applicable.

## **This fact sheet has been produced by:**

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