



Introduction

Furunculosis is caused by the bacterium *Aeromonas salmonicida*, which causes raised muscle lesions/skin boils. The disease typically affects salmonids but has been reported in several non-salmonid species. Furunculosis has been reported globally and can cause great economic losses in hatcheries if not treated.

Species Affected

Aeromonas salmonicida typically infects wild and cultured salmonids (trout and salmon). In trout, Brown and Brook Trout are most susceptible, whereas Rainbow Trout are often refractory to disease. *Aeromonas salmonicida* has also been reported in several non-salmonid species.

Clinical Signs

Furunculosis is named after its raised skin boils that resemble furuncles in mammals,

despite fish not having hair follicles and furuncles. These boils occur in chronically affected fish (Image A-C). Chronic infection typically occurs in older fish and may also result in lethargy. Acute infections are more common in young fish and may lead to high mortality within 2-3 days. Signs of acute illness may be absent externally and may be limited to a darkened coloration of the fish. Signs of furunculosis in non-salmonid fish may include ulcerative skin lesions.

Transmission

Aeromonas salmonicida is an obligate gram-negative bacterium. Horizontal transmission occurs in the water, when fish are infected by coming into contact with the bacterium in the water column or by the fecal-oral route. This bacterium can be introduced into hatcheries by vectors, such as birds, or other means that can introduce the bacterium from the wild to hatcheries.

For this reason maintaining high biosecurity is important to reduce the chances of this bacterium from being introduced.

Diagnosis

Furunculosis can be diagnosed by culturing and isolating bacteria taken from blood, kidney, or lesions on common bacteriological agar, such as tryptic soy agar (TSA).

Treatment

Furunculosis may be treated by a variety of aquaculture-approved antibiotics, such as florfenicol, oxytetracycline, and romet through a veterinary feed directive (VFD). It is important to test bacterial strains for antibiotic resistance prior to initiating treatment.

Epidemiology

Furunculosis is distributed globally in both marine and freshwater fisheries. The bacterium is horizontally transmitted through the water column. It is believed that the bacterium persists in previously infected fish, and fish become “carriers” of the bacterium after clearing an infection. Transmission may also occur by vectors, such as birds, other wildlife, and poor biosecurity practices.

In September of 2013 Furunculosis was reported at the Pequest Trout Hatchery. The disease affected Brown and Brook Trout. A complete Q&A was written up, [Questions and Answers Concerning Furunculosis \(nj.gov\)](#), which outlines the events that occurred related to furunculosis in 2013. Management of the disease ultimately resulted in an altered stocking program and the Pequest Trout Hatchery has since produced solely Rainbow Trout, which have proved to be resistant to the disease. In the future, the hatchery will repopulate with other trout species.

Additional Information

[Furunculosis, Diseases of Wild and Cultured Fishes in Alaska](#)

[Questions and Answers Concerning Furunculosis \(nj.gov\)](#)

[NJDEP Division of Fish & Wildlife - Furunculosis](#)



**Office of Fish and
Wildlife Health and
Forensics**

