

# External Parasitic Arthropods

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## I. Causative Agent and Disease

A variety of different parasitic arthropods can cause external infestations of freshwater and marine fish. Some members of the group are commonly referred to as fish lice. They are commonly found on the body, around the mouth, and on the gills. Members of the class Copepoda commonly found in Alaska include the genera *Lernaea* (anchor worm) in both fresh and marine waters, *Salmincola* (discussed in other section) in fresh water and *Lepeophtheirus* (sea lice) in marine waters. The most common member of the class Branchiura in Alaska is the genus *Argulus* (fish louse). Fish infested with external parasitic arthropods are often lethargic and may flash or rub against substrate. In heavy infestations the skin may look opaque due to the production of mucus and the fins may be frayed. If epidermal or gill tissues become necrotic, secondary infections by fungi and bacteria can occur. These parasites are found worldwide.

## II. Host Species

A variety of different freshwater and marine fishes are susceptible to infestations with these arthropods.

## III. Clinical Signs

Parasitized fish may act listless and lethargic. Mechanical abrasion due to the attachment and/or feeding by the arthropods is common resulting in frayed fins, gill hyperplasia, and patchy epidermal damage and necrosis. Infections with secondary pathogens often occur.

## IV. Transmission

Most of these organisms have a direct life cycle involving a number of free-living and larval stages. Transmis-

sion is through contact with an infective free-swimming stage of the organism in the water column. The infective stage attaches to the fish where it goes through a number of larval stages before becoming an adult.

## V. Diagnosis

The larger parasites can be seen with the naked eye. Definitive identification is based on microscopic morphologies of body parts and structures.

## VI. Prognosis for Host

The prognosis for the host depends on the type, location and number of parasites present. If parasite numbers are small, fish normally survive with little deleterious effects. When present in large numbers, such as *Lepeophtheirus* in seawater netpens, they can be serious pathogens causing significant fish mortality.

## VII. Human Health Significance

There are no human health concerns associated with these organisms.



*Argulus* or fish louse



*Lepeophtheirus salmonis* copepod from the surface of a salmonid fish