

# DISEASE FACT SHEET

Cocahoe minnows are hardy fish; however they can be susceptible to disease. This section is meant as a guide and only covers some of the more common health problems encountered when culturing these fish. The best treatment is prevention by maintaining good water quality. In the instance of an outbreak, a fish disease expert should be consulted before going forward with any treatment. Make sure the fish disease expert is knowledgeable about which chemicals are approved for use. Also note that some of these infections can be transferred to humans in rare cases so use caution when handling infected fish, especially if you have open wounds or sores on your hands.

## Common Symptoms

While these symptoms can be indications of disease, they can also be signs of poor water quality, or other stressors.

### Fin rot

Fin rot is generally an easily spotted condition where the fins and tail of a fish become noticeably degraded. They may change colors, appear inflamed at the base and be frayed or ragged. Fin degradation begins at the edges of the fin and works its way toward the base. Once the infection reaches the base the fish

will not be able to regenerate new fin tissue, and the infection may spread to the body. Fin rot may be a symptom of disease, but this is not always the case.



Figure 1. Cocahoe minnow exhibiting fin rot. Photo: Craig Gothreaux

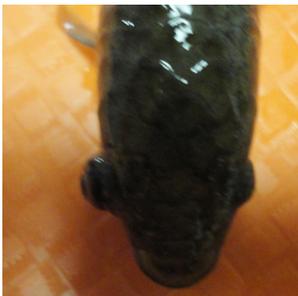


Figure 2. Cocahoe minnow exhibiting pop-eye. Photo: Paige O'Malley

### Pop-eye

Pop-eye is a common symptom that can result from a number of infections. This is another noticeable symptom. Pop-eye occurs when fluid builds up either behind the eye or in the eye. This causes bubbles in the skin surrounding the eye eventually causing the eye to bulge out of its socket. If not treated in a timely manner the fish can lose sight in the affected eye.

### Scale loss and shedding

Small amounts of scale loss occur naturally. However, when large patches of scales are lost it can become a problem. This can be a sign of an existing infection where the tissue holding the scales has become degraded. It can also indicate an infection that causes the fish to rub against hard surfaces, causing patches of scale loss. Areas without scales can open the fish up for further infection. Also be aware of areas with raised scales as this is most likely an early phase of scale shedding and can be an indicator of disease.



Figure 3. Fish with extensive scale loss on head. Picture: Paige O'Malley

### Backbone deformities

Backbone deformities are common in cultured fish. Typically the spine will bend abnormally, sometimes at an angle. Depending on the direction of the bend, this condition can be referred to as scoliosis, a horizontal bend, or lordosis a vertical bend. If developed during early life stages, the condition may be permanent. Backbone deformities have a number of causes; in cultured fish it is commonly associated with a Vitamin C deficiency. In other cases, it can also be a genetic defect, the result of an injury, or a symptom of a bacterial infection.



Figure 4. Fish exhibiting scoliosis. Picture: Paige O'Malley

## Diseases

### *Flexibacter columnaris*

This bacterial infection surfaces most commonly when cocahoe minnows are exposed to freshwater for prolonged periods of time. *Flexibacter columnaris*, commonly referred to simply as *columnaris*, is found in freshwater. It is often a secondary infection preying on fish with weakened immune systems due to stress. This disease is highly contagious and can be transferred through contaminated nets, containers, and food.

Fin-rot is a common symptom of *columnaris* as well as white or light gray spots around the fins or gills and on the head. These spots can become yellowish or brownish in color as infection progresses, and the surrounding area may become tinged with red. Infection can also cause what is known as “saddle-back” where lesions on the back extend down the sides giving a saddle like appearance. Lesions on the mouth may look cottony or moldy and will eventually lead to the erosion of the mouth structure. Fish will start breathing rapidly or gasping when the bacteria invades the gills causing the gill filaments to disintegrate.

### *Aeromonas hydrophila*

This is another opportunistic bacterium that is associated with prolonged exposure to freshwater in cocahoe minnows. This bacteria is found in almost all freshwater and in the gut of many fish. It typically only becomes a problem when the fish are stressed for long periods.

Signs of infection can be highly variable. This makes it extremely difficult to diagnose based on symptoms, and an expert should be consulted before any drastic treatment is undertaken. Signs of infection can include ulcers often surrounded by a bright red ring, tail and fin rot, loss of appetite, pale gills, abnormal swimming and hemorrhagic septicemia. Hemorrhagic septicemia is a condition that can cause lesions leading to scale shedding, hemorrhages in the gills and anal area, ulcers, pop-eye, and abdominal swelling.

### *Vibrio sp.*

*Vibrio* is primarily a saltwater and estuarine disease. It is present in most saltwater systems and usually becomes a problem when fish have been stressed. Once a fish has been infected the amount of bacteria in the water significantly increases creating a higher likelihood of other fish becoming infected.

Infection usually begins with loss of appetite and fish acting lethargic. As the infection progresses fish can begin to show boil like sores on the body, bloody open sores, discolored skin with areas of red dying tissue, and bloody blotches around the fins and mouth. If the infection becomes internal, fish can present with pop-eye, distended stomach and bloody anus. In some cases, even if infection is not fatal fish will eat very little and thus grow very slowly.

### *Streptococcus sp.*

*Streptococcus*, or Strep, is more aggressive than the previously mentioned diseases. While it is opportunistic, it can also be lethal under non-stressful conditions when it is found in high concentrations.

Affected fish typically display erratic swimming (commonly spinning or spiraling), bloody areas on the body such as at the base of fins, gill plates and anus or in the eyes and pop-eye. Death occurs rapidly with this disease. Other symptoms can include cloudy eyes, distended stomach, ulcers and loss of buoyancy control.

### Common Causes of Stress in Cocahoe Minnow Culture

- Prolonged exposure to freshwater
- Overcrowding
- Excessive handling
- Poor water quality (high levels of ammonia or nitrites or low dissolved oxygen)
- Extreme water temperatures

## **Parasites**

There are wide varieties of parasites that can affect cocahoe minnows. While there are many different types, there are characteristics that many of these infestations share. If your fish begin exhibiting some of these symptoms, taking a sample to an expert will give you a better idea of what you are dealing with and how to treat it.

Common symptoms of external parasite infestations can include concave stomach, rapid breathing, and excess mucus produced from the gills. Fish may rub against substrate, rocks or sides and bottom of holding tanks, also known as “flashing.” They may exhibit scale loss or ooze a pinkish fluid. Fins and tail erosion may also be a sign of parasite infestation. In some cases parasites may be visible hanging from fish in their fins, flesh, mouth or anus.

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Revised June 2012

