

# Gill Lice in Colorado



NOVEMBER 2018

## Gill Lice

Gill lice are an external parasite of trout and salmon found throughout the US including Colorado. These parasites have the potential to negatively influence salmonid fisheries throughout Colorado because they can impair fish growth, behavior and survival.

To date, only one species of gill lice has been identified in Colorado, *Salmincola californiensis*. This species of gill lice is known to infect kokanee salmon, cutthroat trout, and rainbow trout throughout the state. No infection of gill lice has been confirmed on any other species of fish in Colorado. CPW continues to work on potential management actions or other approaches to minimize the negative impacts of gill lice on Colorado's valuable native and sport fisheries.

Specifically, CPW is attempting to:

- Assess the current infection presence and intensity of gill lice.
- Determine the extent of negative effects on fish populations throughout the state.
- Identify conditions leading to high levels of gill lice.
- Identify potential management actions and approaches to reduce negative impacts on fisheries.



## Gill Lice Background

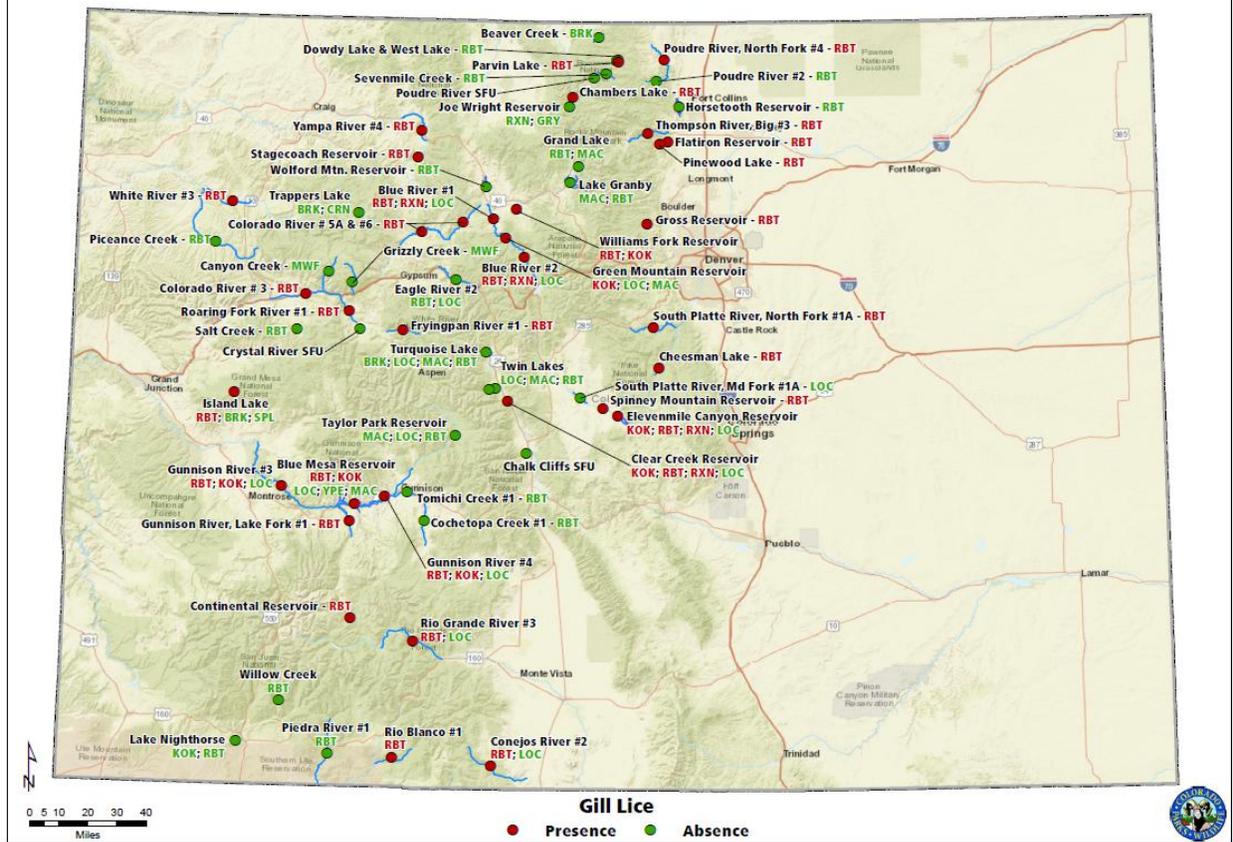
Gill lice (of the genus *Salmincola*), are a parasitic zooplankton that generally attach to the gills, mouths and fins of salmonid fishes (e.g., salmon, trout). Since the initiation of the gill lice project in Colorado in 2012, gill lice have been identified on cutthroat trout, rainbow trout and kokanee salmon. It is important to note that gill lice infestation does not make fish unsafe for consumption.

Heavy gill lice infections can prevent fish from breathing normally, inhibiting oxygen uptake through damaged gill filaments. Gill lice infestations can also negatively affect fish behavior, immune system function, growth, warm water tolerance and ultimately survival.

Gill lice were first reported in Colorado in the early 1900's. Until relatively recently, the negative effects associated with gill lice on fish were limited to infestations in hatcheries, though the presence of gill lice in some Colorado water bodies outside of hatcheries was known. However, more recently, anecdotal evidence has linked declines in fish populations with the occurrence of gill lice, and it is important to understand these more recent observations. Specifically, kokanee salmon populations in many lakes throughout the west have completely collapsed after becoming infected with gill lice.



# Gill Lice Sampling



Kokanee salmon and native cutthroat trout are ecologically and economically important fish species in Colorado that have experienced recent population declines. These populations are especially important to conserve, preserve and protect.

Gill lice research is focused on identifying and developing options for limiting the spread of gill lice to these populations as well as minimizing negative effects from gill lice in native fish populations where gill lice are already present. This research will help maintain and potentially enhance these valuable fisheries and the ecologically and economically important fish species that support them.

CPW research on gill lice is especially important because controlling or eliminating the parasite in wild fish populations is currently difficult or impossible, and this project is aimed at gaining an understanding of gill lice to address this challenge and present viable management options to reduce negative impacts associated with gill lice spread.

## Current CPW Gill Lice Research Projects

- Working with researchers and students at Colorado State University (CSU) to improve the understanding of how gill lice affect trout and salmon in the state.
- Investigating the current and potential consequences of gill lice on kokanee salmon and native cutthroat trout.
- Investigating the effects of fish size and stress on infection rates to determine potential management options. Fish stressed by high population density, low water levels, warm water temperatures or spawning may be more susceptible to gill lice.
- Completing experiments to determine if some fish species are more likely to become infected with gill lice.

## Anglers Can Help!

If you would like to report gill lice in Colorado, please e-mail [estevan.vigil@state.co.us](mailto:estevan.vigil@state.co.us) or [george.schisler@state.co.us](mailto:george.schisler@state.co.us) at CPW.

Please include information about:

Species of fish caught?

Where was the fish caught?

How long was the fish?

What parts of the fish had gill lice?

Any photos.