



ARTICLE

# Salmonid Diet Study

Golden Gate National Recreation Area (<https://www.nps.gov/goga/>)

*January 15, 2021* - Golden Gate National Recreation Area's Aquatic Ecologist, Darren Fong, and Latino Heritage Intern Carter Adamson are taking a closer look at salmonid diets in the park's creeks. They used gastric lavage to obtain the stomach contents of fish in Redwood and Lagunitas creeks. They delicately inserted water-filled syringes into the fish esophagus that leads from the oral cavity into the stomach. This technique flushes out the food the fish had consumed without harming it.

Fong, Adamson, and other fish monitoring crew members examined and categorized hundreds of samples of various aquatic invertebrates and detritus in the salmonid diets. One notable organism present was the New Zealand mudsnail. This species is highly invasive and this diet study is part of an effort to determine their distribution and impact. New Zealand mudsnails can be hazardous because they may outcompete or displace native snails, mussels, and aquatic insects which native fish species depend on for food.

The mudsnails provide very little nutrition as prey. They can survive being eaten because their robust, protective shells enable them to pass through the digestive system of predators unharmed. This allows the mudsnails to increase their range through being consumed by mobile animals, such as fish and birds. The species also can reproduce asexually, only requiring a single snail to start a colony.

This disruption to the food chain may ultimately result in reduced growth rates and lower populations of fish species, so it's important to work towards mitigation efforts where the New Zealand mudsnails are most present. They can also be transported by people, pets, and equipment. The monitoring crews utilize thorough disinfecting methods after each survey to prevent further spread of New Zealand mudsnails. Visitors of the park can do their part by following posted information signs along creeks.



New Zealand mudsnail (*Potamopyrgus antipodarum*) under a light microscope

NPS / Samantha Kuglen



A beetle of the order Coleoptera (left) and a non-biting midge (Chironomidae) in the order of Diptera, a large and diverse order of flies (right), found in salmonid stomach contents.

NPS / Samantha Kuglen

See more from the [San Francisco Bay Area Coho and Steelhead Blog](https://www.nps.gov/rlc/pacificcoast/coho-steelhead-blog.htm) (<https://www.nps.gov/rlc/pacificcoast/coho-steelhead-blog.htm>) and [Bay Area Nature & Science Blog](https://www.nps.gov/rlc/pacificcoast/blog.htm) (<https://www.nps.gov/rlc/pacificcoast/blog.htm>)

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