

Discovery of rare snail species in wyoming

August 1 2022



Lusha Tronstad, lead invertebrate zoologist with WYNDD at UW, led a research team that discovered the Rocky Mountain capshell (pictured) in the Snowy Range. Previously, the snail species was only known from six lakes in Colorado, one in Montana and isolated areas in Canada. Credit: Bryan Tronstad Photo

A group of researchers, led by the University of Wyoming, recently discovered a rare snail species previously unknown to the state.

Lusha Tronstad, lead invertebrate zoologist with the Wyoming Natural Diversity Database (WYNDD) at UW, led the research, which took place in the Bear River and Powder River basins, and the Snowy Range.

The Rocky Mountain capshell, or *Acroloxus coloradensis*, was

previously known from six lakes in Colorado, one in Montana and isolated areas in Canada. However, the latest research discovered the snail in the Snowy Range, located 35 miles west of Laramie.

"We found a new snail in Wyoming," Tronstad says. "This [species](#) is rare, only being known from seven other lakes in the U.S."

Tronstad was lead author of a paper titled "Aquatic Snails of the Bear and Powder River Basins, and Snowy Mountains of Wyoming," which was written for the Wyoming Game and Fish Department.

The department has statutory authority over mollusks: snails and mussels; and crustaceans: crayfish, scuds, zooplankton and shrimp, in Wyoming. That means the department is responsible for managing these invertebrates.

Bryan Tronstad, an assistant invertebrate zoologist with WYNDD, was co-author of the paper. Michelle Weschler, a graduate student in the UW Department of Zoology and Physiology from Orlando, Fla.; Sasha Maxey, a WYNDD technician; Tresize Tronstad, a Laramie High School student volunteer who helped collect snails; and Rob Dillon, a North American snail expert, also contributed to the paper.

Freshwater snails are a diverse group of mollusks that live in a variety of aquatic ecosystems, and many species are of conservation concern globally. Wyoming has 37–39 species of snails.

This study identified 18 of those species in streams, wetlands, lakes and springs in the Bear and Powder River basins, and the Snowy Range. The research group measured basic water quality and habitat characteristics at each site and within microhabitats.

"We found snails at 53% of sites we surveyed, and they were usually

most abundant in ecosystems with more algae; substrate, such as wood and aquatic vegetation; and in habitats with slower water velocity, including backwater and margins of streams," Lusha Tronstad says.

The group found the Rocky Mountain capshell in the Snowy Range and the Bear River snail, or *Pyrgulopsis pilsbryana*, in the Bear River Basin. The Rocky Mountain capshell is ranked as vulnerable throughout its range and critically imperiled in Colorado and Montana under NatureServe Explorer, the largest online encyclopedia of biodiversity in North America.

The Bear River snail is ranked as imperiled throughout its range and critically imperiled in Idaho and Utah.

"The Rocky Mountain capshell is a [rare species](#) that only occurs in a few locations, which are typically mountain lakes. Rare species contribute to biodiversity, and rare species can have large effects on ecosystems despite their status," Lusha Tronstad says. "Very little is known about these snails."

These rare snails are limpets, meaning they have a single shell that is not coiled but cone-shaped, she adds. They eat algae by scraping single-celled plants off rocks and logs.

Rocky Mountain capshell may live in other lakes in the Snowy Range or other Wyoming mountain ranges. However, the snails are difficult to find. Being very [small animals](#), they have very low abundance, and targeted surveys are needed to find them, Lusha Tronstad says.

Overall, snails were often collected in [aquatic vegetation](#) that has very high surface areas and likely provides protection from predators, according to the paper.

"Snails are a diverse group of animals that live in all aquatic habitats. We found snails in large and small streams, wetlands, ponds, lakes, reservoirs and springs," Lusha Tronstad says. "We discovered snails in about half of the aquatic ecosystems we surveyed, and one thing that may limit them is the amount of calcium in the water. Snails need calcium in order to secrete their shells. Most snails prefer slower water, probably because there is less chance that they will be swept away. Carrying their houses on their backs makes them more likely to be swept away by the current compared to other aquatic invertebrates."

The study produced many new records of snails in Wyoming and resulted in snails collected in areas that previously were not sampled. The new information will be incorporated into future state wildlife action plans and made available on the WYNDD website so that the information can be used to base management decisions, Lusha Tronstad says.

For example, the Wyoming Game and Fish Department can use the data to make informed management decisions about the snails in the state. This data is useful to manage both native and nonnative species, as well as those that are common and rare, she adds.

"The more information we have about snails, abundant or rare, the better the decisions that can be made to manage them," she says. "As we collect more data, we can make more accurate state and global ranks."

State ranks are for each state, and global ranks rate how a species is doing throughout its entire range on the globe.

"Discovering Rocky Mountain capshell in Wyoming likely will not change the species' rank. However, it does fill in a missing piece of the puzzle," Lusha Tronstad says. "We knew the snails occurred in Colorado and Montana. Thus, we surmised that they also may occur in Wyoming

between these other states."

She stresses that WYNDD only supplies the data and does not have any role in management decisions.

"We do not have any more funding to survey for snails in the near future, but we would if the opportunity arose," Lusha Tronstad says.

More information: Aquatic Snails of the Bear and Powder River Basins, and Snowy Mountains of Wyoming:

[www.uwyo.edu/wyndd/ files/docs ... DReports/22tro03.pdf](http://www.uwyo.edu/wyndd/files/docs...DReports/22tro03.pdf)

Provided by University of Wyoming

Citation: Discovery of rare snail species in wyoming (2022, August 1) retrieved 23 April 2024 from <https://phys.org/news/2022-08-discovery-rare-snail-species-wyoming.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.