Aquatic snails - Aquatic gastropods

Abundance: Unknown

Status: NSSU NatureServe: G5 SNR

Population Status: Unknown

Limiting Factor: Unknown

Comment: None

Introduction

Aquatic snails and limpets or class Gastropoda are soft bodied molluscs with a spiral, coiled disk-shaped (snails), or cone-shaped shell (limpets). Aquatic snails and limpets are composed of a muscular foot, head, visceral mass (contains organs), and a mantle (secretes shell). Shell length or width varies between 0.2 and 7 cm (0.1 to 2.8 inches). About 526 species of aquatic snails and limpets are known across North America (Brown and Lydeard 2010). According to NatureServe (2009), 54% of the snails and limpets in North America are considered critically imperiled or imperiled (G1/T1 or G2/T2). Aquatic snails and limpets are typically scrapers, eating algae, microbes, fungi, and detritus off of solid substrate such as rocks, logs, or macrophytes (Smith 2001). Freshwater snails and limpets tend to lay eggs in spring. Most snails and limpets lay eggs on substrate, but the families Viviparidae and Thiaridae are live-bearers. The families Physidae, Lymnaeidae, Planorbidae, Ancylidae, Valvatidae, Acroloxidae, and Lancidae are hermaphroditic, but females and males are separate in all other families of freshwater gastropods. Most snails and limpets live 9 to 15 months; however, some species can have 2 to 3 generation in one year especially in warmer climates and others may live up to 4 years. In Wyoming, 50 species and subspecies of freshwater snails and limpets are known (Beetle 1989)(NatureServe 2009). Of these gastropods, 16% are considered critically imperiled or imperiled (G1/T1 or G2/T2). Cave physa (Physa spelunca) is the only aquatic snail endemic to Wyoming. Green River pebblesnail (Fluminicola coloradoensis), ashy pebblesnail (Fluminicola fuscus), Utah physa (Physa gyrina utahensis), rotund physa (Physella columbiana), and Bear Lake springsnail (Pyrgulopsis pilsbryana) are all considered imperiled in Wyoming. Great Basin ramshorn (Helisoma newberryi), cave physa (Physa spelunca), and fat-whorled pondsnail (Stagnicola bonnevillensis) are considered critically imperiled in Wyoming.

Habitat

Aquatic snails and limpet live in both lentic and lotic ecosystems on substrate in the benthos or near the air-water interface on aquatic vegetation or other such substrate.

Problems

- Lack of basic information on distribution and ecology precludes status assessments in Wyoming.
- New Zealand mudsnails outcompete native aquatic snails.

Conservation Actions

- Effective means to control New Zealand Mudsnail are needed.
- A general description of aquatic snail distributions and ecology is needed in Wyoming.

Monitoring/Research

Monitoring plans for some species may be needed, but must be based on baseline distribution and ecology.

Recent Developments

A project lead by University of Wyoming researchers and supported by the Wyoming Game and Fish Department is underway to evaluate the distribution and ecology of Wyoming's aquatic snails. One-hundred and twenty sites were sampled in the North Platte and Big Horn River drainages. At these sites, 5 families representing 12 different genera and subgenera were collected (C. Narr, in prep).

References

Beetle, D. E. 1989. Checklist of recent Mollusca of Wyoming. Great Basin Naturalist 49:637-645.

NatureServe. 2009. NatureServe Explorer: An online encyclopedia of life [web application] Version 7.1. NatureServe, Arlington, Virginia. Available http://www.natureserve.org/explorer. (Accessed: January 14, 2010).

Brown, K. M., and C. Lydeard. 2010. Mollusca: Gastropoda. J. H. Thorp and A. P. Covich, editors. Ecology and Classification of North American Freshwater Invertebrates. Academic Press, New York. Pages 277-307 .

Smith, D. G. 2001. Pennak's Freshwater Invertebrates of the United States. John Wiley and Sons, Inc., New York. Pp. 638.

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SOURCE: Digital maps of ranges for Wyoming Species of Greatest Conservation Need: April 2010. Wyoming Game and Fish Department. A range map is unavailable for the taxa because distribution and ecology are poorly known in Wyoming.