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# Bruneau Hot Springsnail

## *Pyrgulopsis bruneauensis*

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Gastropoda — Neotaenioglossa — Hydrobiidae

### CONSERVATION STATUS / CLASSIFICATION

Rangewide: Critically imperiled (G1)  
Statewide: Critically imperiled (S1)  
ESA: Endangered  
USFS: Region 1: No status; Region 4: No status  
BLM: Threatened, Endangered, Proposed, and Candidate  
(Type 1)  
IDFG: Not classified

### BASIS FOR INCLUSION

Endangered under the U.S. Endangered Species Act; Idaho endemic.

### TAXONOMY

No subspecies is recognized.

### DISTRIBUTION AND ABUNDANCE

This aquatic snail is endemic to Idaho. It occurs in thermal springs along an approximately 5 mile reach of the Bruneau River and in Hot Creek (U.S. Fish and Wildlife Service 2000b). According to the U.S. Fish and Wildlife Service (2000b), in 1998 this species survived at 89 of the 131 springs occupied in 1991. The species likely no longer occurs in Hot Creek (C. Myler, USFWS, pers. comm.).

### POPULATION TREND

Based on a comparison with population estimates by Taylor (1982a), Mladenka (1992) estimated that population size declined by 50% between 1982 and 1991. The number of geothermal springs and seeps occupied by the Bruneau hot springsnail has declined by 32% from 1991 to 1998 (U.S. Fish and Wildlife Service 2000b).

### HABITAT AND ECOLOGY

The Bruneau hot springsnail inhabits small, geothermal spring runs and seeps, typically on basalt bedrock. Substrates usually comprise gravel and silt but individuals are also found on sand, mud, and algal film (Mladenka 1992). Macrophytes are usually absent from occupied habitat.

Individuals graze primarily on diatoms and algae attached to rock, wood, or plant surfaces. They have limited dispersal capabilities due to their preference for warm waters (Mladenka 1992).

Colonies are limited in extent by water temperature. Temperatures within occupied habitat range from 15.7-35.7°C. Optimum breeding temperature is from 24-35°C, and growth is reduced at low temperatures (Mladenka 1992).

## **ISSUES**

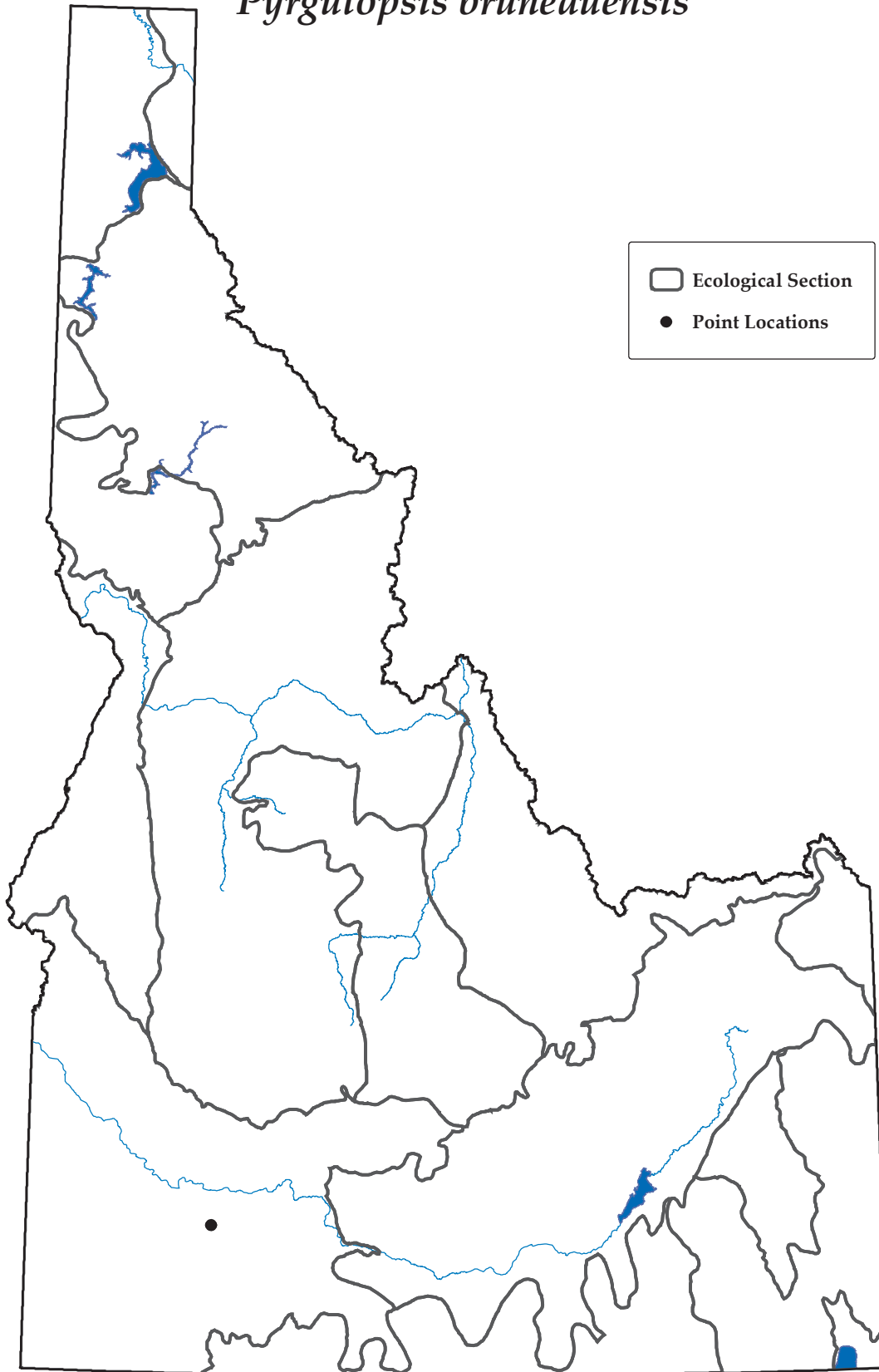
The primary threat to this species is degradation of aquatic habitat associated with seeps and springs as a result of groundwater withdrawal for agricultural purposes. This species is also susceptible to predation by a number of introduced fish, including a species of guppy and a species of *Tilapia*. Livestock use can affect habitat suitability, as well as mortality and reproductive rates (Mladenka 1992). Because populations are small, they are vulnerable to catastrophic environmental events, such as flash floods (U.S. Fish and Wildlife Service 2000b).

## **RECOMMENDED ACTIONS**

Projects focusing on distribution, habitat variables, and life history ecology have been initiated. Abundance, population structure, distribution, and habitat status are monitored at 21 sites, and surveys have been performed to locate additional sites. Groundwater development in the Bruneau area is currently regulated by the Idaho Department of Water Resources, and the U.S. Geological Survey is monitoring groundwater, spring discharge, and annual withdrawals. Fencing has been used as a mechanism for protecting some sites (U.S. Fish and Wildlife Service 2000b). Other recovery options include restoration of disturbed sites and reintroduction to historical sites.

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2 August 2005  
Point data are from Idaho Conservation Data Center,  
Idaho Department of Fish and Game.

