

Fat-whorled Pondsail (*Stagnicola bonnevillensis*)

Species Status Statement.

Distribution

Fat-whorled pondsail was once an abundant and widespread species in prehistoric Lake Bonneville. However, determining the present distribution of the species is difficult due to the close morphological relationships among several *Stagnicola* species endemic to the Lake Bonneville Basin. The currently understood distribution of fat-whorled pondsail is five springs: Horsespring A, Horsespring B, Pipe Spring, Fish Spring, and Shotgun Spring. The springs are located approximately 20 miles northwest of Corrinne, Utah, off State Route 83 near the Thiokol solid rocket fuel facility (Moonlight Limnology 2006).

Table 1. Utah counties currently occupied by this species.

Fat-whorled Pondsail
BOX ELDER

Abundance and Trends

Fat-whorled pondsail monitoring began in 2004, and managers have continued monitoring in the fall most years since then. The number of snails observed during monitoring visits has varied greatly between years. However, the populations have shown a gradual increase since monitoring began, ranging from 228 individuals counted in 2006 to 4,813 individuals in 2017 (Edwards 2017, in preparation).

Statement of Habitat Needs and Threats to the Species.

Habitat Needs

This aquatic snail occupies spring-fed water bodies with somewhat diverse substrates (gravel, sand and silt) and temperatures between 10 and 18° C (Clark 1991; Edwards 2017, in preparation). Individuals are commonly found in 1-2' deep pools. They can be settled near the bottom on substrate or among aquatic vegetation (Clark 1991).

Threats to the Species

The limited distribution of this snail makes the species susceptible to any catastrophic natural events, or human actions, that could destroy or degrade the spring habitat where it lives. Small, isolated seeps, springs, or spring complexes are very susceptible to small-scale habitat destruction or modifications that alter the springhead or flow. Potential threats include factors

that decrease flow regionally such as prolonged drought or groundwater pumping. There are also potential local threats to individual springs such as introduction of non-native species and contamination of groundwater (Clarke 1991). Non-native species, including New Zealand mudsnail and mosquitofish, now live in the springs where this species occurs (Edwards 2017, in draft). In addition, over the past few years the water levels have been fluctuating. During 2018, reports indicated that water levels were at an all-time low, with one spring drying up completely for the first time (Thackery 2018).

Table 2. Summary of a Utah threat assessment and prioritization completed in 2014. This assessment applies to the species' entire distribution within Utah. For species that also occur elsewhere, this assessment applies only to the portion of their distribution within Utah. The full threat assessment provides more information including lower-ranked threats, crucial data gaps, methods, and definitions (UDWR 2015; Salafsky et al. 2008).

Fat-whorled Pondsnaail
High
Invasive Wildlife Species - Non-native
Small Isolated Populations
Medium
Industrial and Military Effluents

Rationale for Designation.

This species appears to be restricted to a few isolated springs. Dewatering, non-native species, and groundwater contamination are risk factors at these locations. In general, direct human pressures, and climate change, presently threaten many springs and spring systems in Utah, and managers and scientists expect these issues to intensify. In order to maintain understanding of the distribution and status of this species in Utah, managers need to conduct occasional surveys, and monitor potential threats. These activities will help prevent the possibility of Endangered Species Act listing of this species.

Economic Impacts of Sensitive Species Designation.

Sensitive species designation is intended to facilitate management of this species, which is required to prevent Endangered Species Act listing and lessen related economic impacts. An ESA listing of fat-whorled pondsnaail would impact management and development of water resources and the management of military effluent in Box Elder County. There would also be increased costs of regulatory compliance for many land-use decisions and mitigation costs

Literature Cited.

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