Lamb Rams-horn (*Planorbella oregonensis*)

Species Status Statement.

Distribution

The currently understood distribution of this aquatic snail consists of two localities in Oregon; one locality in Utah; and one in Nevada. The status of the species is uncertain in both Nevada and Utah, but for different reasons (Blevins et al. 2017, Duncan 2008, Frest and Johannes 1995; Furnish et al. 2002). The Nevada population may be extirpated. For the putative Utah population, there is some disagreement regarding whether the species collected was indeed lamb rams-horn, or possibly a similar species.

The Utah locality is the Salt Springs / Blue Lake spring complex in western Tooele County, Utah (Oliver and Bosworth 1999). Taylor (1986) identified Seminole rams-horn (*Planorbella duryi*) as the sole Planorbid that he collected from Salt Springs. Taylor suggested that the only reported observation of *P. oregonensis* from Salt Springs was actually mistaken for the introduced *P. duryi*. The latter is endemic to Florida, but now spread widely throughout the world, including Texas, New Mexico and Utah (Alexandrowicz 2003). If the Planorbid in Salt Springs / Blue Lake is indeed *P. duryi*, the mode of introduction was likely unauthorized species introduction by private citizens, who have also introduced aquarium-trade fishes to the site. However, the physicochemical properties of Salt Springs / Blue Lake are very similar to the *P. oregonensis* type locality in Oregon, Borax Lake, so it is quite possible that Taylor was wrong in his suggestion that the lamb rams-horn does not actually occur in Utah.

Table 1. Utah counties currently occupied by this species.

Lamb Rams-horn
TOOELE

Abundance and Trends

Information is completely lacking in this regard.

Statement of Habitat Needs and Threats to the Species.

Habitat Needs

This freshwater snail was first identified from the shoreline region of Borax Lake, Oregon on hard substrates or submerged vegetation. Borax Lake is a spring-fed, geothermally heated, permanent alkaline lake. It is about 1 meter deep, and its overflow creates marshy areas dominated by salt-tolerant plants and grasses. It has an average water temperature of 30°C; however, temperatures can range from 22°C to 39°C depending on the location within the lake

(Furnish et al. 2002). Many of these conditions are similar to those at Salt Springs / Blue Lake in Utah.

Threats to the Species

Specific threats remain unknown and unidentified for this species. However, human activities that fragment habitats, alter banks, deposit sediment, or degrade water quality are plausible threats in localized situations. Current potential threats to Salt Springs / Blue Lake include groundwater withdrawal leading to impacts to the aquifer and spring flow, recreational activities and vehicle access, and the introduction of more nonnative species, whether mollusk or fish.

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).

Lamb Rams-horn
Very High
Small Isolated Populations

Rationale for Designation.

Lamb rams-horn remains very poorly known in Utah, if it indeed occurs here. The lack of applicable information about the species is an impediment to threat assessment and management. In general, direct human pressures, and climate change, presently threaten many aquatic systems in Utah, and managers and scientists expect these issues to intensify. In addition, freshwater gastropods have the highest modern extinction rate of any major taxonomic group relative to their background extinction rate. This is likely attributable to their endemism and high susceptibility to habitat loss and degradation because of limited dispersal abilities (Johnson et al. 2013). Lamb rams-horn has a particularly high risk of extinction due to its extremely limited distribution and reliance on habitat originating primarily from a single water source. In order to develop adequate 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 lamb rams-horn would impact management and development of water resources

in western Tooele County. There would also be increased costs of regulatory compliance for many land-use decisions and mitigation costs.

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