

California Floater - *Anodonta californiensis*

Abundance: Unknown

Status: NSSU

NatureServe: G3 SNR

Population Status: Unknown

Limiting Factor: Unknown

Comment: None

Introduction

North America hosts the world's highest diversity of freshwater mussels (over 300 species), but more than half of the native mussels in the midwestern United States are listed as threatened or endangered (Cummings and Mayer 1992). The shells of the California floater (*Anodonta californiensis*) are up to 12.7 cm (5 inches) in length and can be yellow-green, yellow-brown, olive, pale brown, red-brown, or black (Nedeau et al. 2009). These mussels do not display external sexual dimorphism. California floaters live in the western United States from Arizona to Washington and California to Wyoming (NatureServe 2009). These mussels have a wide range, but have sparse populations (Hovingh 2004). These bivalves are considered critically imperiled (Washington, Nevada, Utah, and Arizona) to imperiled (California and Oregon; NatureServe 2009). The number of individuals and sites occupied by the California floater are likely declining in the United States (NatureServe 2009). In Wyoming, California floaters are only known from the Bear River mainstem and the shoreline of Woodruff Narrows Reservoir (Beetle 1989; Hovingh 2004; Cvancara 2005). California floaters were first found near Cokeville in the Bear River in 2008 where this species co-occurs with the western pearlshell (*Margaritifera falcata*). Only one other site in the state is known to have two living mussel populations co-occurring. Freshwater mussels are filter feeders that remove fine organic matter from the water column (Smith 2001). The life cycle of aquatic mussels requires a host fish or amphibian during the larval stage. Larval mussels (glochidium) disperse while attached to their host and develop into adults if released on suitable substrate (Cummings and Graf 2010). Natural hosts for the California floater are poorly known, but certain minnows are probably (Nedeau et al. 2009) and may include chubs (*Gila* spp.; Hovingh 2004) and cutthroat trout (*Oncorhynchus clarkii* spp.). Introduced mosquitofish (*Gambusia affinis*) were a host in the laboratory (OSUMD 2010). Raccoons, muskrats, otters, fishes, turtles, and birds all feed on mussels (Grabarkiewicz and Davis 2008). Wyoming's native mussel diversity is naturally low (7 species known), owing to the generally high elevation, headwater character of Wyoming's aquatic ecosystems, but is worthy of further study.

Habitat

The California floater prefers shallow habitats with sand and silt substrate in large rivers, lakes, and low gradient streams (Beetle 1989; Hovingh 2004; Whaley et al. 2004; Nedeau et al. 2009) with relatively stable water levels (Hovingh 2004). This mussel is found mostly in pools, near channel banks, and in sedge-occupied substrates (Cuffey 2002). It prefers low velocity flow regimes and lakes.

Problems

h Water quality degradation, chemical pollution, silt, and interrupting glochidial host fish relationships.

Conservation Actions

h Baseline population distribution, abundance, and structure data for the California floater are needed in the Bear River to evaluate the need for and to help guide potential conservation actions.

Monitoring/Research

A population monitoring plan needs to be developed, based on the range-wide trend of decline and extirpation for this species and must incorporate much needed baseline information.

Recent Developments

A living population of California floater mussels was confirmed in the main stem Bear River by Wyoming Game and Fish Department personnel during October 2008.

A comprehensive survey of Wyoming's native mussels and their habitats was funded by a State Wildlife Grant for fiscal years 2011 through 2013. This project will likely be initiated in western Wyoming.

References

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SOURCE: Digital maps of ranges for Wyoming Species of Greatest Conservation Need: April 2010. Wyoming Game and Fish Department. Note that brown indicates the current known range of the species.