Giant Floater - Pyganodon grandis

Abundance: Unknown

Status: NSSU NatureServe: G5 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). Shells of the giant floater (Pyganodon grandis) are up to 25.4 cm (10 inches) in length and color is light yellow or yellow-green with green or brown rays. These mussels do not display external sexual dimorphism. Gianter floater lives in much of Canada, the Mississippi and Red River drainages (Texas and Oklahoma), Gulf of Mexico drainage area (Louisiana and Texas), and Great Lakes and Hudson Bay basins from Texas to Nunavut and Montana to New York (NatureServe 2009). These bivalves are considered imperiled (Colorado, Iowa, and Vermont) to secure (13 states and provinces), but exotic in North Carolina (NatureServe 2009). The giant floater is widespread and common throughout nearly all of its range (Cummings and Mayer 1992). In Wyoming, giant floaters were first discovered in the Belle Fourche and Little Missouri Rivers (Cvancara 2005), and subsequently found in the Little Powder and Cheyenne Rivers. Giant floater appears to be common where the species is found in Wyoming. 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 (glochidum) disperse while attached to their host and develop into adults if released on suitable substrate. Giant floater is a habitat and host-generalist, which make the species fairly adaptable to ecological disturbances (Cummings and Mayer 1992). Natural hosts that are known for the giant floater and found in Wyoming include river carpsucker (Carpiodes carpio), white sucker (Catostomus commersoni), central stoneroller (Campostoma anomalum), pearl dace (Margariscus margarita), common shiner (Luxilus cornutus), creek chub (Semotilus atromaculatus), Iowa darter (Etheostoma exile), and Johnny darter (Etheostoma nigrum; OSUMD 2010), and possible channel catfish (Ictalurus punctatus). Other hosts of this mussel include rock bass (Ambloplites rupestris), green sunfish (Lepomis cyanellus), pumpkinseed (Lepomis gibbosus), bluegill (Lepomis macrochirus), largemouth bass (Micropterus salmoides), yellow perch (Perca flavescens), black crappie (Pomoxis nigromaculatus), white crappie (Pomoxis annularis), freshwater drum (Aplodinotus grunniens), brook stickleback (Culaea inconstans), goldfish (Carassius auratus), common carp (Cyprinus carpio), and gizzard shad (Dorosoma cepedianum). 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 giant floater mussel inhabits low velocity habitats in streams, rivers, lakes, and reservoirs, and is most often found in fine substrates such as silt and sand (Cummings and Mayer 1992; Downing et al. 2000; Whaley et al. 2004) (NatureServe 2009). This species is tolerant of lower oxygen concentration than most other mussels (NatureServe 2009).

Problems

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

Conservation Actions

- Baseline population distribution, abundance, and structure data for the giant floater are needed throughout its range in Wyoming to evaluate the need for and to help guide potential conservation actions. The viability of populations of this mussel in Wyoming is unknown.

Monitoring/Research

A population monitoring plan needs to be developed following a thorough baseline inventory of abundance and population structure.

Recent Developments

Wyoming Game and Fish Department personnel documented new occurrences of giant floater mussel in the Little Powder and Cheyenne rivers, which expanded knowledge of current distribution.

A comprehensive survey of Wyoming's native mussels and their habitats was funded by a State Wildlife Grant for fiscal years 2011 through 2013.

References

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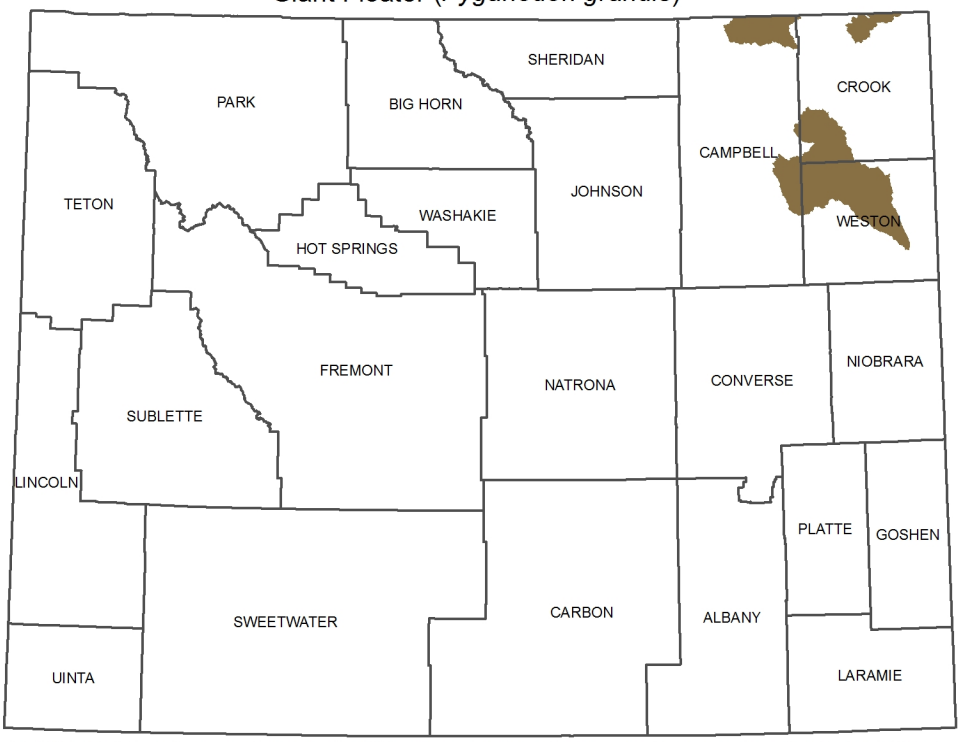
Giant Floater (*Pyganodon grandis*)



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.