

Roundtail Chub (*Gila robusta*)

Species Status Statement.

Distribution

Historically, roundtail chub inhabited most medium to large tributaries of the Upper Colorado River Basin (Holden and Stalnaker 1975), including the Colorado, Dolores, Duchesne, Escalante, Green, Gunnison, Price, San Juan, San Rafael, White, and Yampa rivers (Bezzerides and Bestgen 2002). There, the species mainly occurred at elevations below approximately 7,500 feet.

Table 1. Utah counties currently occupied by this species.

Roundtail Chub	
CARBON	KANE
DAGGETT	SAN JUAN
DUCHESNE	UINTAH
EMERY	UTAH
GARFIELD	WAYNE
GRAND	

Abundance and Trends

Unlike several other states, in Utah roundtail chub persist in reduced, low abundances throughout most of their historic range. The species does appear extirpated from several major tributary drainages including the Price, Muddy, Fremont, and Duchesne rivers, among others. However, populations of roundtail chub persist in the main stem rivers (Green, Colorado, San Juan) in low numbers, as well as various other tributaries including the White, San Rafael, and Escalante rivers.

Some populations have shown increasing trends in recent years. For example, electrofishing in the upper San Rafael River between 2008 and 2012 resulted in a mean relative abundance of 3.8 fish/hour, while results from 2013 through -2017 increased to a mean of 14.5 fish/hour. Conversely, other populations have declined recently. In the White River, managers have observed alarming decreases in relative abundance in recent years (Fiorelli 2018). Similarly, in 2002 electrofishing surveys of the middle Escalante River, roundtail chub were common, with multiple age classes captured. Since 2009 however, catch data show the relative abundance of this species to be low there.

Statement of Habitat Needs and Threats to the Species.

Habitat Needs

Roundtail chub is found most often in stream reaches that have a complexity of pool and riffle habitats (Bezzerrides and Bestgen 2002). Juveniles and adults typically live in relatively deep, low-velocity habitats that are often associated with woody debris or other types of cover (McAda et al. 1980, Miller et al. 1995, Beyers et al. 2001, Bezzerrides and Bestgen 2002, UDWR 2006). Larvae have been reported in low velocity areas associated with backwater habitats (Haines and Tyus 1990, Ruppert et al. 1993). Temperature tolerance of roundtail chub has been reported up to 102°F, but temperature preference ranges between 71°F and 75°F (Weitzel 2002). Managers in Wyoming have successfully introduced roundtail chub and found that the fish have developed self-sustained populations. This opportunity is being explored throughout their range to develop refuge, brood, and recreation populations.

Threats to the Species

Roundtail chub is vulnerable to local extirpation, as individual fish do not seem to move long distances. This makes it difficult to recolonize river sections after dewatering events, post-fire ash flows, or other local catastrophes. Bryan and Robinson (2000) reported sedentary behavior of roundtail chub in two Colorado River tributaries in the lower basin, as did Beyers et al. (2001) in a 2-mile study area in the Colorado River during a fall survey.

Threats to this species include habitat loss, fragmentation, and degradation. Diversion of water has had the most profound habitat effects, by changing flow regimes of sediment and water in main-stem rivers and their tributary stream systems. These flow changes have resulted in the loss and degradation of riparian zones, which further reduces the natural function of stream ecosystems. The reduction of large cottonwood trees and invasion of exotic species such as tamarisk has reduced the potential for large trees to fall into the river and create pool habitat. It has also resulted in heavy sediment accretion along banks, a form of incidental channelization. In desert streams, large woody debris plays a critical role in the formation of fish habitat, especially deep pools (Keller et al. 2014). The most important other threat to this species comes from an increasing diversity of non-native fish species, which function as invasive predators and competitors.

Table 2. Summary of a statewide-scale threat assessment and prioritization completed in 2013 (UDWR 2015; Salafsky et al. 2008). Note that these threat rankings do not apply at the scale of local populations; a threat ranked medium at the overall, statewide level may be the most important threat to a local population. The threat assessment provides more information not presented here, including lower ranked threats, crucial data gaps, and definitions for all the threats and data gaps.

Roundtail Chub
Very High
Agricultural / Municipal / Industrial Water Usage
Droughts
Invasive Wildlife Species - Non-native
Presence of Diversions
Water Allocation Policies
High
Channelization / Bank Alteration (direct, intentional)
Dam / Reservoir Operation
Inappropriate Fire Frequency and Intensity
Oil Shale
Presence of Dams
Problematic Animal Species – Native
Spills and Production Water
Tar Sands
Medium
Increasing Stream Temperatures
Invasive Plant Species – Non-native
Pipelines / Powerlines - Energy Development
Sediment Transport Imbalance
Storms and Flooding

Rationale for Designation.

On a range-wide basis, roundtail chub has experienced large declines in distribution and abundance. For the most part in Utah, the species persists in reduced numbers in most of its historical distribution. The rapid decline in the White River, which was a very robust population until recently, is a major cause for concern. Designation of roundtail chub as a state sensitive species will allow managers to continue and expand conservation practices including propagation and stocking, and habitat and flow restoration. Measures taken to conserve roundtail chub should also benefit flannelmouth sucker and bluehead sucker.

Economic Impacts of Sensitive Species Designation.

Sensitive species designation is intended to facilitate the management of this species, which is required to prevent Endangered Species Act listing and lessen related economic impacts. The listing of roundtail chub would have wide-ranging impacts to developing and managing water resources in Utah. It would also impact recreational fisheries management, and oil and gas development, especially due to habitat impacts from associated infrastructure and water use and potential contamination during production. There would also be increased costs of regulatory compliance for many land-use decisions and mitigation costs.

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