Roundtail Chub - Gila robusta

Abundance: Rare

Status: NSS1 (Aa) NatureServe: G3 S3

Population Status: Greatly restricted in numbers and distribution and extirpation is possible.

Limiting Factor: The biggest limiting factor for roundtail chub is invasive species. This threat has significant impacts through competition and predation. The threat of invasive species is growing with introductions of new species and the expansion of existing species. This is particularly true of predatory fish. Population of roundtails in Wyoming are imperiled due to limited distribution and declines in numbers.

Comment: NSS Ranks are reviewed and revised with each SWAP revision. No changes were made for this species in this revision.

Introduction

Roundtail chub, along with flannelmouth sucker Catostomus latipinnis, and bluehead sucker C. discobolus are all relatively large-bodied species native to the Colorado River drainage. These three imperiled fish are collectively called "the three species" and their conservation has been a cooperative effort spanning state lines (Utah Department of Natural Resources 2006, updated in 2011). Once common throughout the drainage, roundtail chub currently occupy approximately 45% of their historic range in the Colorado River Basin (Baxter and Stone 1995; Bezzerides and Bestgen 2002). They still occur in relatively low numbers throughout the Green River drainage of Wyoming, with lentic populations in the Finger Lakes of the New Fork Drainage (Baxter and Stone 1995; Gelwicks et al. 2009). Roundtail chubs are omnivorous. Larvae feed on diatoms and filamentous algae (Neve 1967). Juveniles feed on aquatic insects, crustaceans, and algae. (Bestgen 1985). Adults consume these food items as well as terrestrial gastropods, insects, and reptiles (Rinne 1992). Laske et al. (2011) showed that lentic populations consumed terrestrial and aquatic insects, vegetation, and fish. Spawning takes place in the spring and early summer during the falling limb of the snowmelt runoff hydrograph (Brouder 2001, Laske et al. 2011). During this time, the adhesive, demersal eggs are deposited over gravel in deep pools and runs (Neve 1967). Movements have been observed to coincide with the spawning season (Bestgen et al. 1987; Beatty 2005; Compton 2007).

Habitat

Roundtail chub are most commonly found in pool-riffle habitats of Colorado River Basin rivers and streams (Bezzerides and Bestgen 2002). Adults are associated with low current velocities, deep pools, undercut banks, woody debris, and boulders (Bestgen 1985; Bestgen and Propst 1989). Populations are also found in several lakes in the Upper Green River drainage in Wyoming (Laske 2010)

Problems

- The effects of water development and reservoir construction exacerbated by drought have cut off this species' migratory corridors, degraded its habitat, and encouraged the spread of nonnatives.
- Habitat degradation (e.g., dewatering, loss of connectivity) and introduced species pose the most serious threats to this species' persistence.

Conservation Actions

- Continue as a signatory to the "Rangewide Conservation Agreement for Roundtail Chub, Bluehead Sucker and Flannelmouth Sucker" (Colorado River Fish and Wildlife Council 2004).
- Continue efforts to maintain flows and connectivity.
- Develop methods for holding and spawning in captivity.
- Continue to educate landowners and the public about the importance of maintaining habitat for native fish
- Evaluate the potential for restoring populations within suitable portions of historic range that are currently uninhabited or where competing species can be removed.
- Continue efforts to remove competing and hybridizing nonnative species to secure, enhance and restore populations.
- Continue to partner with other agencies and conservation organizations (e.g., BLM, Little Snake River Conservation District, and Trout Unlimited) to address conservation needs for this species.
- Use transplants as a means of establishing new lentic populations that are free from predatory threats.
- Chemically treat Muddy Creek to remove nonnative species.

Monitoring/Research

Continue regular monitoring of drainages containing the three species to track population trends and the abundance and ranges of nonnative species.

Conduct monitoring before and after chemical treatments and transplants to determine the success of removal/transplant efforts.

Continue to identify and record observations while conducting fisheries management sampling.

Recent Developments

The Wyoming Game and Fish Department is a signatory to the "Rangewide Conservation Agreement and Strategy for Roundtail Chub Gila robusta, Bluehead Sucker Catostomus discobolus, and Flannelmouth Sucker Catostomus latipinnis" (Utah Department of Natural Resources 2006). Most other wildlife and land management agencies within the native range of roundtail chub have also signed this agreement.

A survey from 2002-2006 of the three species throughout the Green River drainage in Wyoming has been completed and summarized in a report (Gelwicks et al. 2009). Surveys indicate that the most imminent threat to the persistence of roundtail chubs is habitat degradation, mainly due to water development.

Genetics analyses reveal that Wyoming populations contain unique haplotypes not found in downstream populations (Douglas and Douglas 2008).

Three graduate studies were completed describing roundtail chub populations, habitat, and/or movement in Muddy Creek (Bower 2005; Beatty 2005; Compton 2007).

Long-term (Cavalli 2006) and short-term (Senecal et al. 2010) management plans for Wyoming's three species have been completed.

The first transplants to establish roundtail chub populations in lakes where lake trout and brown trout are absent was conducted (WGFD 2010). Transplanted fish have survived, but no evidence of reproduction has been documented (Wyoming Game and Fish Department 2015).

A University of Wyoming graduate, Sara Laske, completed a MS thesis describing habitat use and diets of roundtail chub, brown trout, and lake trout in Halfmoon and Little Halfmoon lakes (Laske 2010).

A Colorado State University graduate study was done to determine the jumping and swimming abilities of burbot and white sucker in order to design effective barriers to prevent their spread in the Green River drainage of Wyoming (Gardunio 2014).

Work to restore native species including roundtail chub, through the removal of nonnatives, in the Muddy Creek drainage continues.

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Roundtail Chub (*Gila robusta*)

SOURCE: Digital maps of ranges for Wyoming Species of Greatest Conservation Need: February 2016. Wyoming Game and Fish Department. Note that brown indicates the current known range of the species.