

Flannelmouth Sucker - *Catostomus latipinnis*

Abundance: Extremely rare

Status: NSS1 (Aa)

NatureServe: G3G4 S3

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

Limiting Factor: Genetics: species declining in genetic purity due to introgression with nonnative sucker species.

Comment:

Introduction

Flannelmouth sucker, along with roundtail chub *Gila robusta*, and bluehead sucker *C. discobolus* are all relatively large-bodied species of imperiled Colorado River fish. The three are collectively called “the three species” and their conservation is a cooperative effort which spans state lines (Colorado River Fish and Wildlife Council 2004). Although flannelmouth sucker were once widespread throughout the Colorado River basin, they currently occupy approximately 45% of their historic range (Bezzarides and Bestgen 2002). Reasons for declines include dam construction and operation as well as predation, competition and hybridization with non-native fishes. The primary cause of declines in Wyoming is the risk of genetic introgression with widely distributed non-native suckers (Bezzarides and Bestgen 2002; McDonald et al. 2008). Although genetically pure individuals still exist throughout the Green River drainage in Wyoming, upper Bitter Creek houses the states’ only remaining population of flannelmouth sucker that is isolated from non-native, hybridizing sucker species (Gelwicks et al. 2009). Recent evidence of reduced abundances, truncated age structure, and habitat limitations within this population raise concerns about its future viability (Senecal 2010). Flannelmouth sucker are omnivorous. Juveniles of this species feed on aquatic invertebrates and organic detritus while adults consume terrestrial seeds, plant debris, algae, and phytoplankton in addition (Muth and Snyder 1995; Childs et al. 1998). Spawning occurs in May and June in the Upper Colorado River Basin whereby adhesive, demersal eggs are deposited over sand and gravel bars in shallow water (McAda and Wydoski 1985). Flannelmouth sucker movement into and out of tributary streams has been observed. However, sedentary patterns are also apparent (Cavalli 1999; Beatty 2005; Compton 2007; Sweet 2008).

Habitat

Although preferring large rivers with deep riffles and runs, flannelmouth sucker can also be found in smaller streams and sometimes in lakes (Baxter and Stone 1995). Juveniles select for slower current velocity habitats, such as backwaters, eddies, side channels, and shallow riffles (Bezzarides and Bestgen 2002). Flannelmouth sucker tend to occupy habitats lower in the drainage and exhibit more overlap with white suckers *Catostomus commersoni* than do bluehead suckers *Catostomus discobolus* (Sweet 2008).

Problems

- h Competition with and predation by nonnative species (i.e., *Catostomus* sp., creek chub *Semotilus atromaculatus*, redbreast shiner *Richardsonius balteatus*, burbot *Lota lota*, brown trout *Salmo trutta*, and lake trout *Salvelinus namaycush*) further limit three species populations.
- h Hybridization between native flannelmouth and bluehead sucker, and non-native white sucker *Catostomus commersoni*, longnose sucker *Catostomus catostomus*, and Utah sucker *Catostomus ardens* is occurring. Some combinations are fertile and will lead to introgression.
- h 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.

Conservation Actions

- h Continue mechanical removal of nonnative species from the Finger Lakes.
- h Chemically treat Big Sandy River, Little Sandy and Muddy Creeks to remove nonnative species and reduce the risk of hybridization.
- h Construct a barrier upstream of Big Sandy reservoir to prevent recolonization of treated stream reaches by nonnative fish.
- h Continue mechanical removal of nonnative species from Big Sandy River, and Little Sandy and Muddy (tributary to Little Snake River) Creeks.
- h 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.
- h Develop methods for salvage, transport, holding, and repatriation of native species during chemical treatments.
- h Increase the availability of hard substrates and pool habitat in upper Bitter Creek according to recommendations by Senecal (2010)

Monitoring/Research

- Continue regular monitoring of drainages containing the three species to track population trends, hybridization rates, 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.
- A Colorado State University graduate study is underway 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.
- The Colorado State University Larval Fish Lab is conducting a larval drift study to determine the abundance and seasonality of Catostomid larvae which drift downstream to Big Sandy Reservoir and the potential impacts of a downstream barrier on native fish recruitment.

Recent Developments

Wyoming became a signatory to the “Rangewide Conservation Agreement and Strategy for Roundtail Chub, Bluehead Sucker and Flannelmouth Sucker” (Colorado River Fish and Wildlife Council 2004).

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 flannelmouth suckers in Wyoming is genetic introgression with white suckers.

Recent genetics analyses reveal that Wyoming populations contain unique haplotypes not found in downstream populations (Douglas and Douglas 2008a), and that hybridization with white suckers enables further backcrossing among native and nonnative sucker species (Douglas and Douglas 2008b; McDonald et al. 2008).

Five graduate studies were completed describing three species populations, habitat, and/or movement in Big Sandy River, and Little Sandy and Muddy Creeks (Bower 2005; Beatty 2005; Compton 2007; Sweet 2008; Banks 2009).

Nonlethal methods for precisely aging sucker species and their hybrids were developed (Quist et al. 2007) and used to age bluehead and flannelmouth suckers in Big Sandy River, and Little Sandy and Muddy Creeks (Sweet et al. 2009).

A publication describing distinguishing meristic and morphometric characteristics of bluehead, flannelmouth, white suckers and their hybrids has been published (Quist et al. 2009).

Drafts of long-term (Cavalli 2006) and short-term (Senecal et al. 2010) management plans for Wyoming’s three species have been completed.

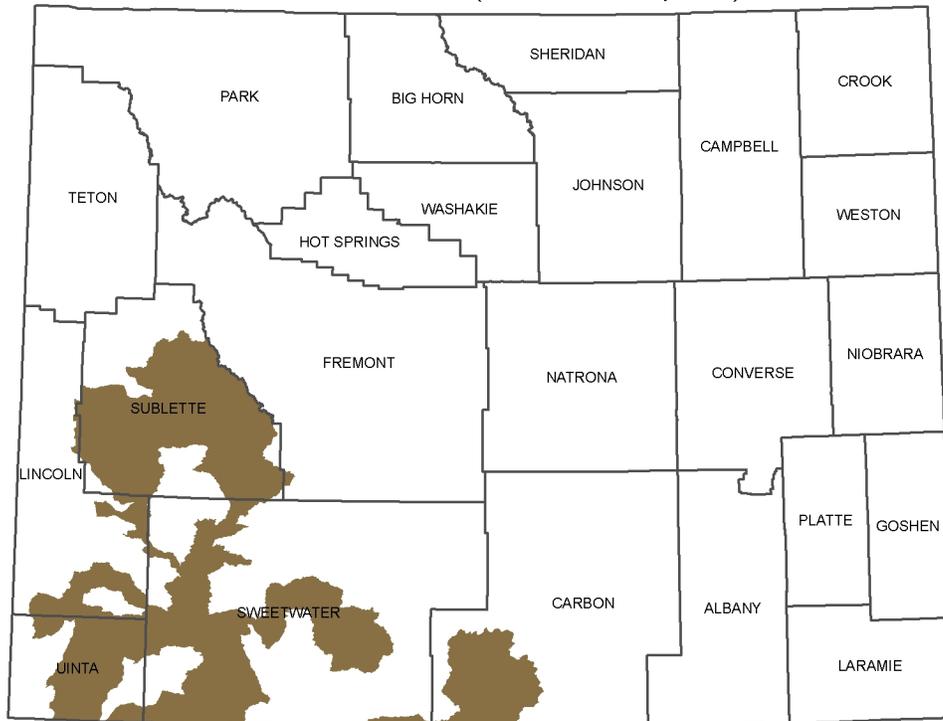
Nonnative sucker species and hybrids were mechanically removed from Big Sandy River, Little Sandy and Muddy Creeks (Garner et al., In preparation) as well as from Halfmoon and Burnt lakes (WGFD 2010).

Depletion population estimates for the three species were conducted on Muddy Creek (Garner et al., In preparation) and for flannelmouth sucker in Upper Bitter Creek (Senecal 2010).

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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.