Bluehead Sucker - Catostomus discobolus

Abundance: Extremely rare

Status: NSS1 (Aa) NatureServe: G4 S3

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

Limiting Factor: Genetics: species declining in genetic purity over the majority of its range in Wyoming due to introgression with nonnative sucker species.

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

Introduction

Bluehead sucker, along with flannelmouth sucker Catostomus latipinnis, and roundtail chub Gila robusta 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). Bluehead suckers are native to the Colorado River Basin and the Upper Snake, Weber, and Bear Rivers of Idaho, Wyoming, and Utah (Sigler and Miller 1963). This species currently occupies 50% of its historic Upper Colorado River basin range (Bezzerides and Bestgen 2002). Hybridization with native and nonnative sucker species poses the greatest risk to the persistence of Wyoming populations (Douglas and Douglas 2008; McDonald et al. 2008; Gelwicks et al. 2009). Although genetically pure individuals still exist throughout the Green River drainage in Wyoming, only those in Ringdahl Reservoir are isolated from non-native, hybridizing sucker species (Gelwicks et. al. 2009). Until 2010, it was believed that no non-native suckers were present in the Snake River drainage, however a white sucker was found in the Snake River in 2009 (verified in 2010) and recent genetic work (Mandeville, 2015) has confirmed the presence of white suckers in the drainage. At the current time, bluehead sucker populations in the Bear River drainage are presumed to be free from non-native, hybridizing sucker species. Adult and juvenile bluehead suckers are benthic algivores and use chisel-like mouth parts to scrape algae, organic and inorganic debris, and aquatic invertebrates from hard substrates (Muth and Snyder 1995). Spawning occurs from mid to late summer at higher elevations (Bezzerides and Bestgen 2002). Eggs are deposited into shallow redds (Maddux and Kepner 1988), and larvae drift downstream to backwater nursery habitat (Childs et al. 1998). Within larger rivers, bluehead suckers exhibit both downstream movement and sedentary patterns (Cavalli 2000; Beyers et al. 2001; Hines 2013). Similar observations have been made in smaller systems (Beatty 2005; Compton 2007; Sweet 2007).

Habitat

Bluehead suckers occupy the mainstem and tributaries of large rivers. They are more frequently found in headwaters than flannelmouth suckers (Baxter and Stone 1995). Large adults are associated with deep pools, undercut banks, moderate to fast current velocities, and rocky substrates (Sigler and Miller 1963, Sweet 2007, Hines 2013).

Problems

- Hybridization between native bluehead and flannelmouth 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.
- Competition with and predation by nonnative species (i.e., Catostomus sp., creek chub Semotilus atromaculatus, redside shiner Richardsonius balteatus, burbot Lota lota, brown trout Salmo trutta, and lake trout Salvelinus namaycush) further limit bluehead and flannelmouth sucker populations.
- 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

- Continue as a signatory to the "Rangewide Conservation Agreement for Roundtail Chub, Bluehead Sucker and Flannelmouth Sucker" (Colorado River Fish and Wildlife Council 2004).
- Chemically treat Big Sandy River, Little Sandy and Muddy Creeks to remove nonnative species and reduce the risk of hybridization.
- Continue efforts to maintain flows and connectivity.
- Investigate the viability of hybrids.
- Develop methods for holding and spawning in captivity.

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 efforts.

Conduct a project to determine juvenile abundance and habitat use.

Recent Developments

A survey from 2002-2006 of the three species throughout the Green River drainage in Wyoming has been completed and summarized in an Administrative Report (Gelwicks et al. 2009). Surveys indicate that the most imminent threat to the persistence of bluehead suckers in the Green River drainage is genetic introgression with white suckers.

Genetics analyses reveal that Wyoming populations of the three species contain unique haplotypes not found in downstream populations (Douglas and Douglas 2008), that hybridization with white suckers enables further backcrossing among native and nonnative sucker species (Douglas and Douglas 2008; McDonald et al. 2008), and that the level of hybridization varies among drainages (Mandeville 2015).

Six studies were completed describing three species populations, habitat, and/or movement in Snake River, Big Sandy River, and Little Sandy and Muddy Creeks (Bower 2005; Beatty 2005; Compton 2007; Sweet 2007; Banks 2009; Hines 2013).

Nonlethal methods for precisely aging native and nonnative sucker species and their hybrids were developed (Quist et al. 2007) and used to age bluehead suckers in Snake River, Big Sandy River, and Little Sandy and Muddy Creeks (Sweet et al. 2009; Hines 2013).

Methods for salvage, transport, holding, and repatriation of native species were investigated (Compton 2013).

Bluehead suckers were documented in the Buffalo Fork, Gros Ventre, Fish Creek, and Spread Creek drainages in the Snake River drainage.

Chemical treatments to remove nonnative species in Sculpin Creek and Long Draw (Big Sandy drainage) and Muddy Creek have begun.

A barrier is being constructed on the Big Sandy River to prevent recolonization of treated stream reaches by nonnative fish. Barrier design was influenced by research on the jumping capabilities of burbot and white suckers (Gardunio 2014). Barrier location was influenced by research on the larval drift of Catostomids in the Big Sandy River (Zelasko et. al. 2011).

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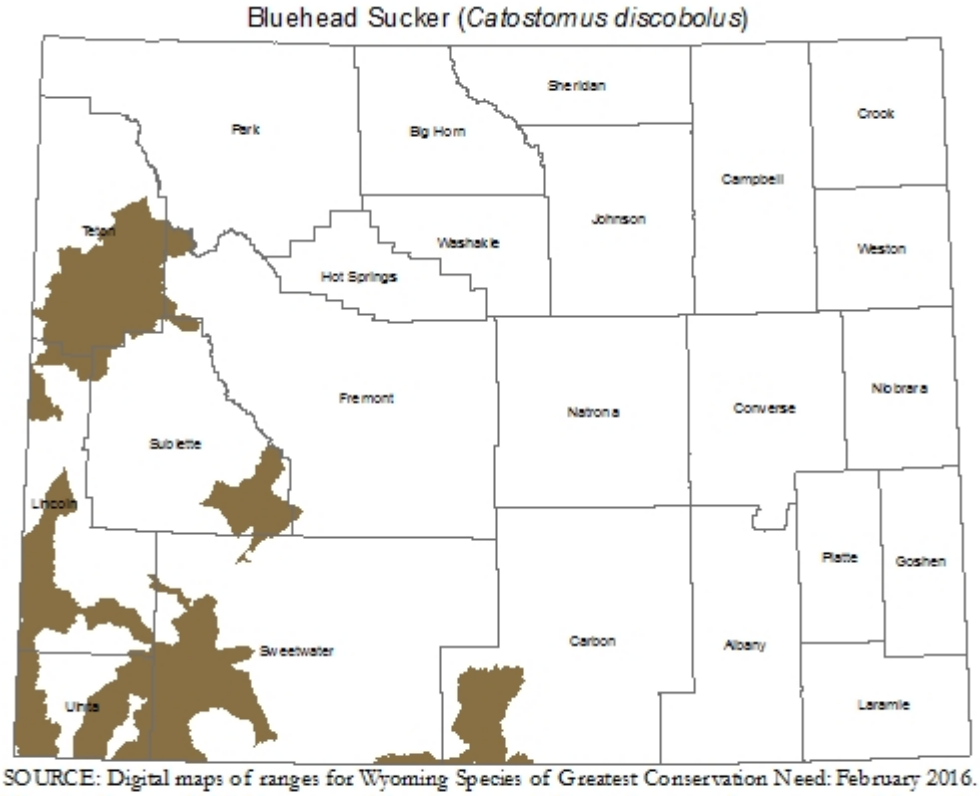

SOURCE: Digital maps of ranges for Wyoming Species of Greatest Conservation Need: February 2016. Wyoming Game and Fish Department. Note that brown indicates the current known range of the species.