Bonneville Cutthroat Trout - Oncorhynchus clarkii

Abundance: Common within a limited range

Status: NSS3 (Bb) NatureServe: G4T4 S1

Population Status: Greatly restricted in numbers and distribution, but relatively stable. Extirpation is not imminent. Population status is vulnerable.

Limiting Factor: Limiting factors are severe and not increasing significantly. Habitat: habitat availability is limited by land management activities (grazing, irrigation diversion, energy development, and municipal water diversion), but habitat conditions have not worsened over the past decade.

Comment: Changed from NSS2 in 2005 due solely to changes in the matrix.

Introduction

The Bonneville cutthroat trout (BRC) are the native cutthroat trout present in the Bear River drainage in Wyoming. The distribution and abundance of BRC has changed from historical levels. It has been estimated that BRC occupied 6,758 miles of habitat within Utah, Idaho, Wyoming and Nevada. They currently occupy an estimated 2,380 miles of historical habitat (May and Albeke 2005). Inter-agency management plans have been developed for this species since 1993 which focused on population and habitat monitoring, increasing BRC range, watershed improvements, and developing public awareness (Remmick et al. 1993, Lentsch et al. 2000, May and Albeke 2005).

This cutthroat trout subspecies is distinguished from the other cutthroat trout by a more uniform distribution of spots. Life history information for BRC has been described by Baxter and Stone 1995, Binns 1981, and Remmick 1982. This subspecies primarily feeds on aquatic and terrestrial insects and is an opportunistic feeder. Larger size BRC are piscivores. Maturity is typically reached around 3 years old. Spawning typically occurs after runoff which is usually during June. Both resident and fluvial populations of this subspecies still exist.

Several factors have contributed to the decline of the BRC including the introductions of non-native species, habitat modification and fragmentation. Bonneville cutthroat trout tend to tolerate and survive in degraded habitats with warmer water temperatures better than other cutthroat trout.

See the Bear River Basin aquatic basin chapter in the current SWAP for more information relative to this fish.

Habitat

Cutthroat trout prefer gravel-bottomed creeks and rivers as well as lakes. The Bonneville cutthroat trout is well known for its ability to survive in harsh and often degraded (by man) habitats. In Wyoming, the Bonneville cutthroat is found in the Smith Fork, Thomas Fork and the Bear River watersheds. A lentic population is located in Lake Alice. This subspecies of cutthroat trout is also native to some drainages in Idaho, Utah and Nevada with the bulk of its historic range within Utah. The subspecies has been introduced as a sport fish to many waters outside its historic range.

Problems

- Entrainment in irrigation canals has been identified as a major source of mortality for BRC.
- Habitat fragmentation and degradation are major threats to the persistence of Bonneville cutthroat trout.
- Irrigation diversions have impacted migration patterns of Bonneville cutthroat trout, particularly during low flows.
- Competition and hybridization with nonnative trout are impacting some populations.
- Domestic grazing, roads, culverts, and removal of willows have negatively impacted Bonneville cutthroat trout.
- Potential development of impoundments (Sublette Reservoir) could impede migration of Bonneville cutthroat trout.

Conservation Actions

- Continue efforts to maintain flows and connectivity.
- Continue to work towards meeting the goals and objectives as identified in the BRCT Conservation Agreement and Strategy.
- Continue to work with private landowners and other agencies to reduce entrainment issues.
- Represent the WGFD on the interagency Bonneville cutthroat trout conservation team and help implement the Range-wide Conservation Agreement and Strategy for Bonneville cutthroat trout (Lentsch et al. 2000).

Monitoring/Research

Continue monitoring populations and habitats every 5 years or as needed based on project opportunities.

Evaluate fish passage problem throughout the Bear River, Thomas Fork and Smith Fork watersheds.

Recent Developments

Analyzed tissue samples from BRC populations in the Thomas Fork (Giraffe Creek), Twin Creek (Rock Creek), and Smiths Fork (Grade Creek). Based on amplified fragment length polymorphism analyses, these three populations were determined to be genetically pure with no significant influence from rainbow trout, Yellowstone cutthroat trout or Colorado River cutthroat trout.

Submitted additional tissue samples from Lake Alice and the mainstem Bear River for genetic analyses in 2010.

Monitored BRC movement in Twin Creek, Hobble Creek and Thomas Fork.

Constructed upstream bypass channels on several irrigation diversions (examples include Taylor, Peterson, Mumford).

PhD. prjoject completed on BRC entrainment in canals (Carlson 2006).

Constructed riparian exclosures.

Implemented fish passage projects (culverts primarily) throughout the Bear, Smiths Fork, and Thomas Fork watershed.

Worked with private landowners to improve fish passage issues in the Twin Creek watershed.

Continued to collect baseline data and establish monitoring sites.

References

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Lentsch, L.D., C.A. Toline, J. Kershner, J.M. Hudson, and J. Mizzi. 2000. Range-wide conservation agreement and strategy for Bonneville cutthroat trout (Oncorhynchus clarki utah). Publication number 00-19. Utah Division of Wildlife Resources. Salt Lake City, Utah.

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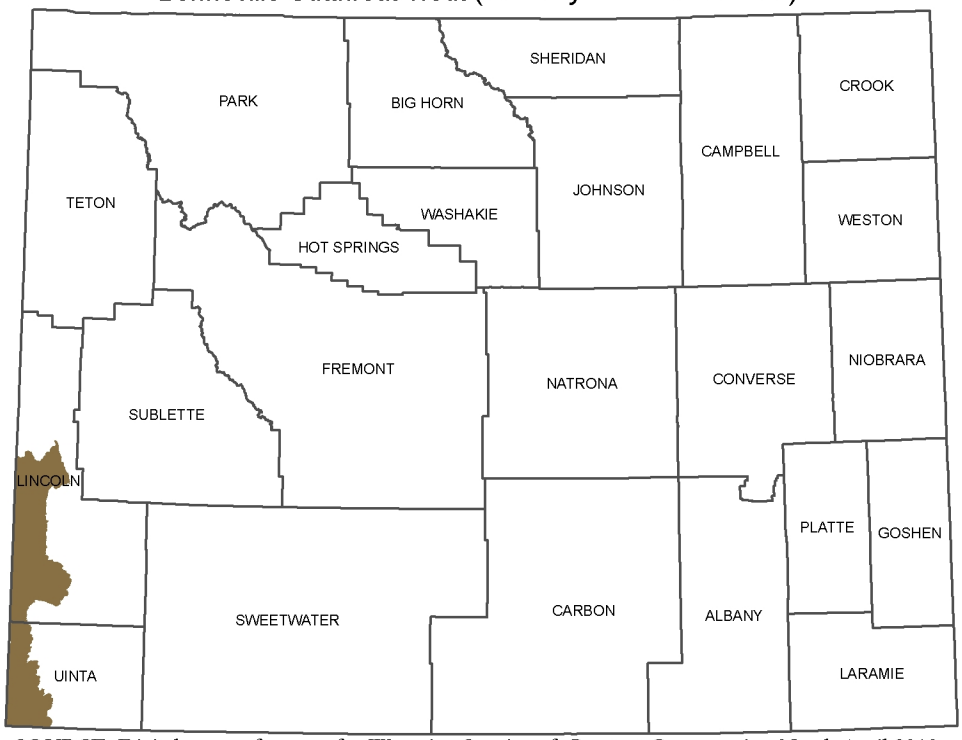
Bonneville Cutthroat Trout (*Oncorhynchus clarkii utah*)



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.