SPECIES: Scientific [common]	*Oncorhynchus clarkii utah* [Bonneville Cutthroat Trout]
Forest:	Bridger-Teton National Forest
Forest Reviewer:	Patrick M. Barry, Masako Wright
Date of Review:	1/21/2020, 7/8/2025
Forest concurrence (or recommendation if new) for inclusion of species on list of potential SCC: (Enter Yes or No)	No

FOREST REVIEW RESULTS:

1. The Forest concurs or recommends the species for inclusion on the list of potential SCC:
   Yes__ No__X_

2. Rationale for not concurring is based on (check all that apply):
   Species is not native to the plan area _____
   Species is not known to occur in the plan area _____
   Species persistence in the plan area is not of substantial concern _____

FOREST REVIEW INFORMATION:

1. Is the Species Native to the Plan Area? Yes _X_ No___

   If no, provide explanation and stop assessment.

2. Is the Species Known to Occur within the Planning Area? Yes _X_ No___

   If no, stop assessment.

Table 1. Known Occurrences, Years, and Frequency within the Planning Area.

Year Observed	Number of Individuals	Location of Observations (USFS District, Town, River, Road Intersection, HUC etc.)	Source of Information
		See Map 1 and Map3	Trout Unlimited 2011, USFS 2019

a. Are all Species Occurrences Only Accidental or Transient?

Yes___ No _X_

If yes, document source for determination and stop assessment.

b. For species with known occurrences on the Forest since 1990, based on the number of observations and/or year of last observation, can the species be presumed to be established or becoming established in the plan area?

Yes _X_ No___

If no, provide explanation and stop assessment

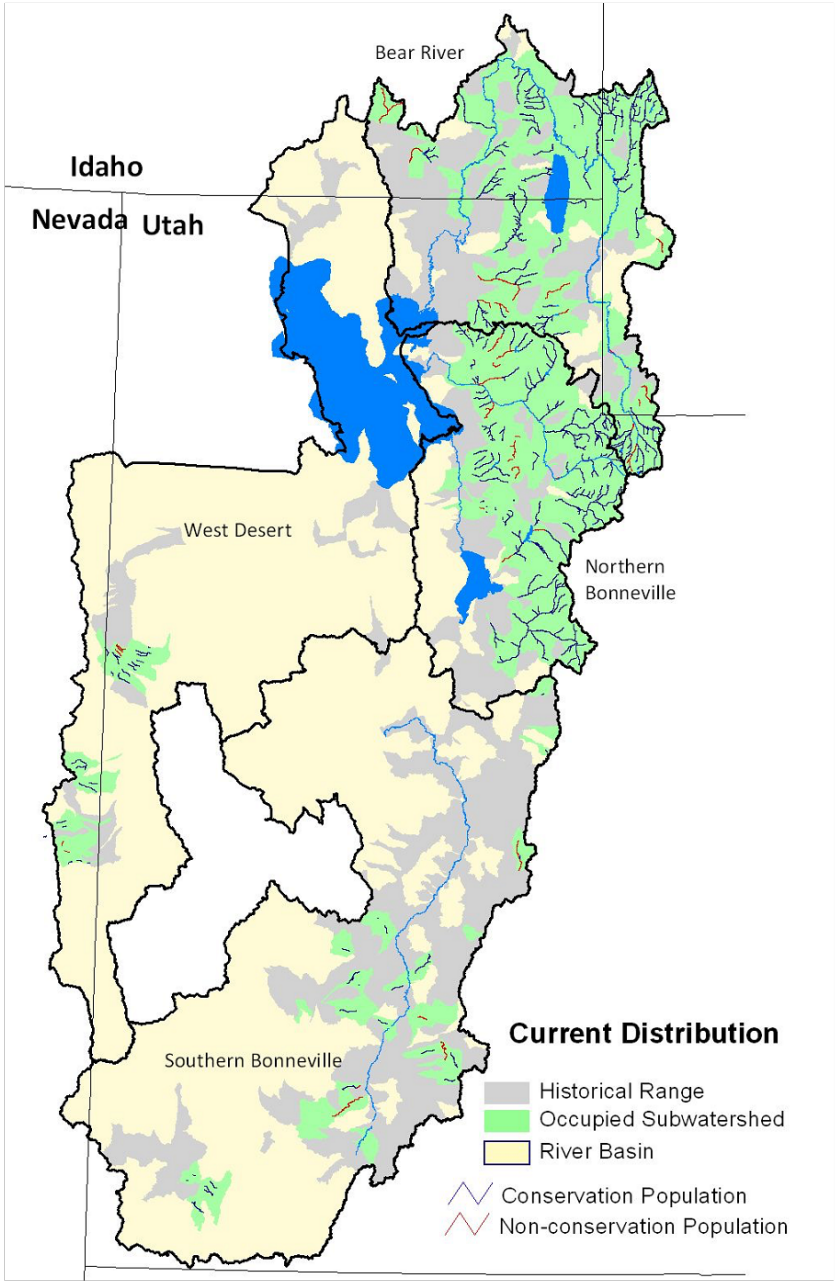
c. For species with known occurrences on the Forest predating 1990, does the weight of evidence suggest the species still occurs in the plan area?

Yes __ No___

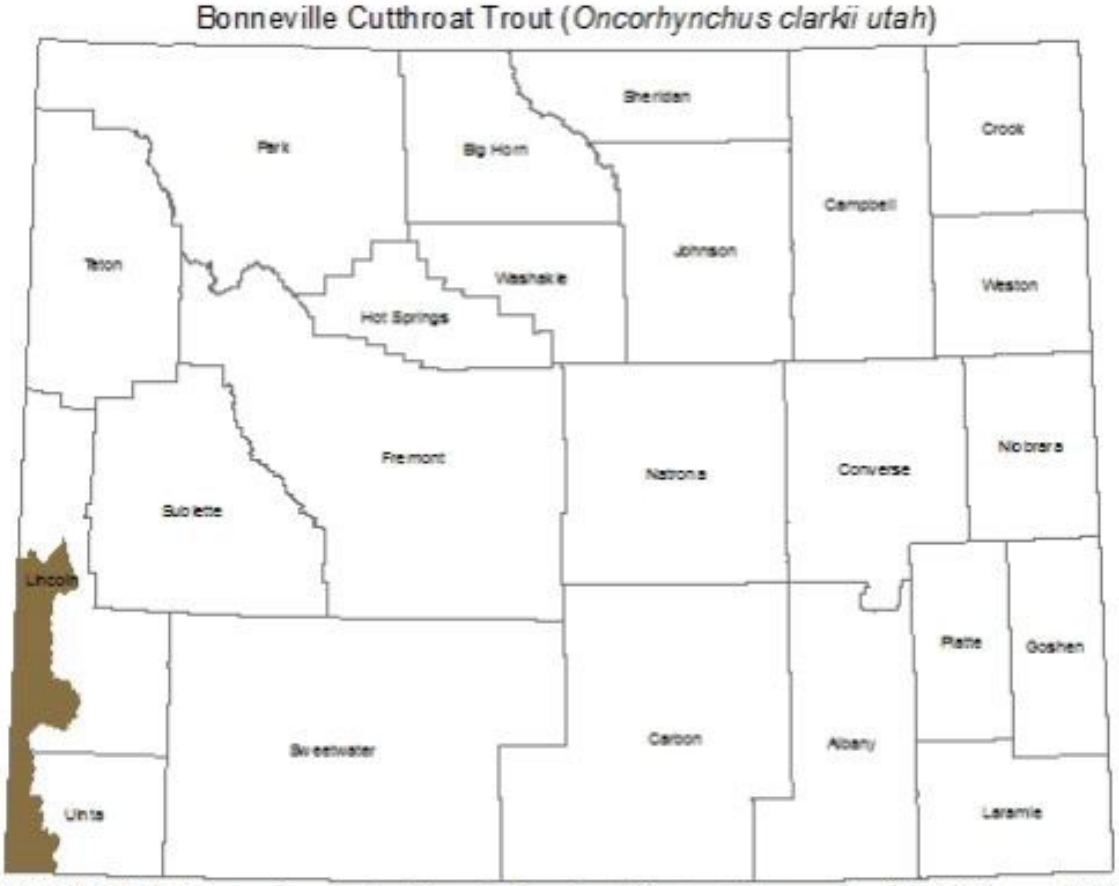
Provide explanation for determination
N/A – There are known occurrences on the Forest since 1990.

If determination is no, stop assessment

d. **Map 1**. Current and historic distribution of Bonneville Cutthroat Trout in the western United States (Trout Unlimited 2011).

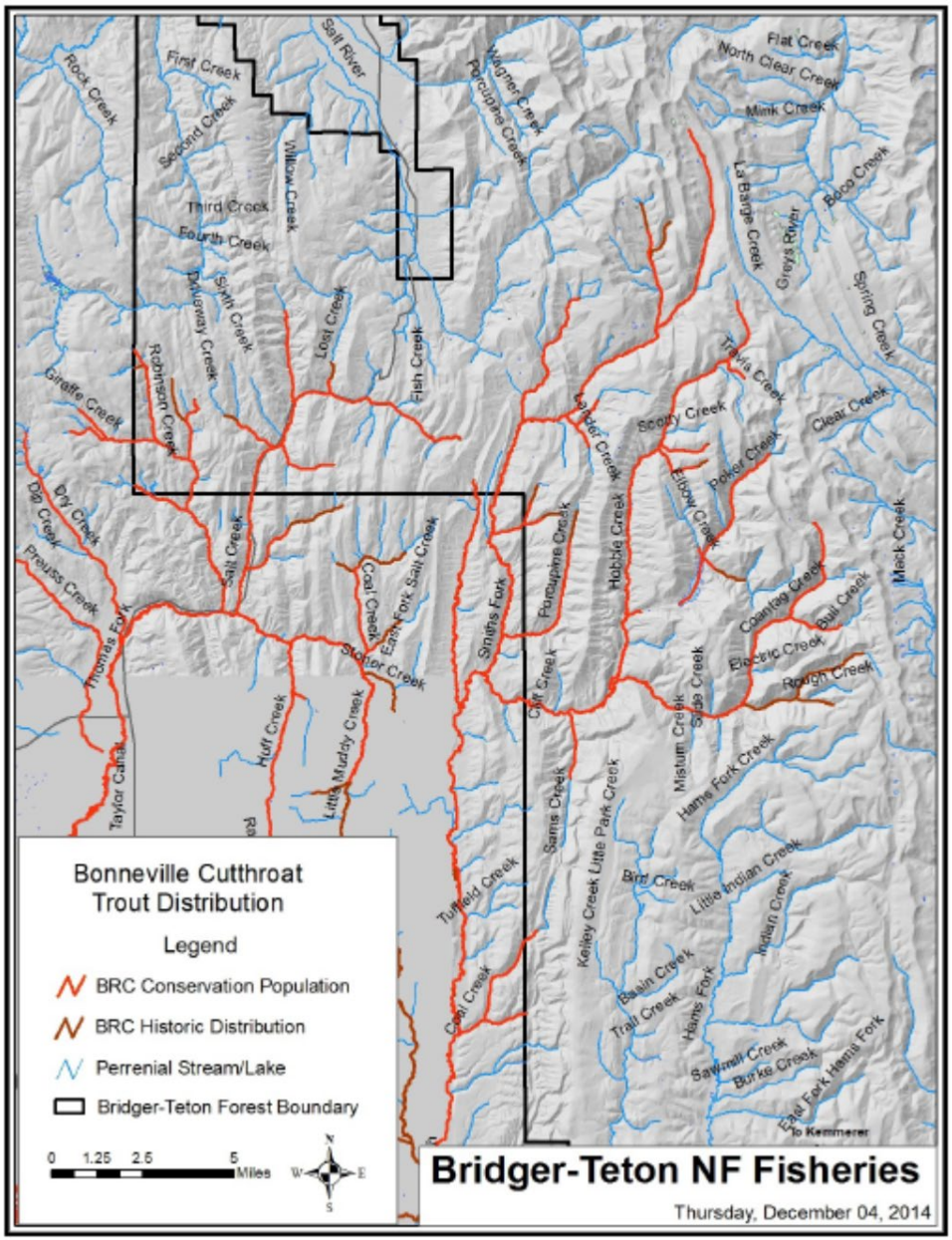


Map 2. Range of Bonneville Cutthroat Trout in Wyoming (WGFD 2017).



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.

Map 3. Bonneville Cutthroat Trout Distribution on the Bridger-Teton National Forest (USFS 2019).



3. Is There Substantial Concern for the Species' Capability to persist Over the Long-term in the Plan Area Based on Best Available Scientific Information?

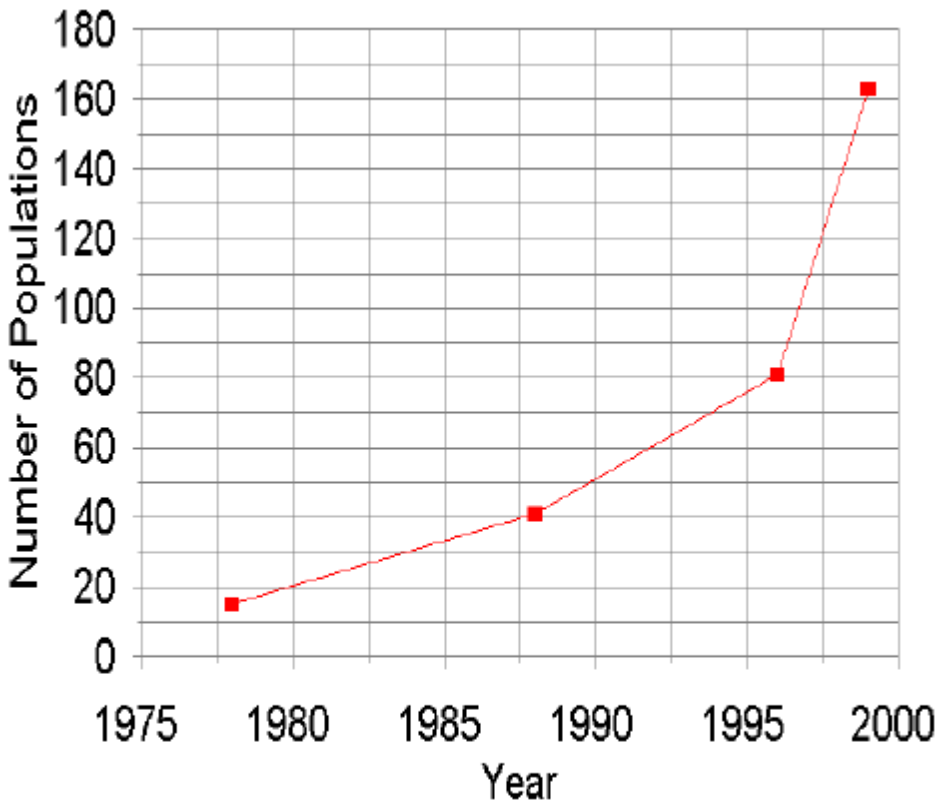
Table 2. Status summary based on existing conservation assessments

Entity	**Status/Rank (include definition)**
NatureServe Global Status	**GNRT3** *Unranked — Global rank not yet assessed. Intraspecific taxon: Subspecies, variety, or population is considered Vulnerable*
NatureServe State Status	**S1**—Critically Imperiled *At very high risk of extinction due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors*
WGFD	**SGCN, NSS3 (Bb), Tier II** *Population Status: Vulnerable - Population size or distribution is restricted or declining but extirpation is not imminent.* *Limiting Factors: Severe - Limiting factors are severe and not increasing significantly.* *Tier II: Moderate priority* *[The WGFD's Species of Greater Conservation Need (SGCN) designation process is based upon its **Native Species Status (NSS)** classification system that compares population and limiting factor variables using a 16 cell matrix. As a species moves from a placement closest to the upper left corner of the matrix (Aa/NSS1) toward the lower right corner (Dd/NSS7) the species' population status in Wyoming is considered more secure. Numerical scores were assigned to each of these variables and summed to provide a total score (i.e. NSS3). SGCN were placed into one of three tiers based on their total score: Tier I – highest priority, Tier II – moderate priority, and Tier III – lowest priority.]* (Wyoming Game and Fish Department 2017)
WYNDD	**Species of Concern** *Species vulnerable to extirpation at the global or state level due to:* *a. their rarity (e.g., restricted distribution, small population size, low population density)* *b. inherent vulnerability (e.g., specialized habitat requirements, restrictive life history)* *c. threats (e.g., significant loss of habitat, sensitivity to disturbances)*

	(Wyoming Natural Diversity Database - Species of Concern)
USDA Forest Service	**Region 4: Sensitive Species** *Those plant and animal species identified by a Regional Forester for which* *population viability is a concern, as evidenced by* *a. Significant current or predicted downward trends in population numbers or density.* *b. Significant current or predicted downward trends in habitat capability that would reduce a species' existing distribution.* (FSM 2670.5 – Threatened, Endangered & Sensitive Species)
USDOI FWS	**Not listed**
USDOI BLM	**Sensitive (WY)** *1. Sensitive species must be native species found on BLM-administrated lands for which BLM has the capability to significantly affect the conservation status of the species through management, and either:* *a. There is information that a species has recently undergone, is undergoing, or is predicted to undergo a downward trend such that the viability of the species or a distinct population segment of the species is at risk across all or a significant portion of the species range, or* *b. The species depends on ecological refugia or specialized or unique habitats on BLM-administrated lands, and there is evidence that such areas are threatened with alteration such that the continued viability of the species in that area would be at risk.* *2. All federally designated candidate species, proposed species, and delisted species in the 5 years following their delisting shall be conserved as Bureau sensitive species* (BLM Wyoming Sensitive Species Policy and List; March 31, 2010)
IUCN	N/A

Table 3. Status summary based on best available scientific information.

Criteria	Rationale
Distribution on the Bridger-Teton National Forest	Bonneville cutthroat trout currently occupies an estimated 2,380 miles of historical habitat range-wide, which is estimated to have covered 6,758 miles within Utah, Idaho, Wyoming and Nevada. The subspecies has been introduced as a sport fish to many waters outside its historic range (WGFD 2017). In Wyoming, Bonneville cutthroat trout are native to the Bear River drainage, where it occupies much of the available cold-water habitat in the headwaters of the basin. This subspecies is found in the Smith Fork, Thomas Fork, and the Bear River watersheds. A lentic population is in Lake Alice (WGFD 2017). There are two Bonneville cutthroat trout conservation populations in the Bridger-Teton National Forest. One population occupied 6.2 miles of habitat and includes Lake Alice and Poker Creek. The Lake Alice population is disconnected from other populations, but it is genetically pure with little risk of invasion or disease. The Central Bear population is large and inter-connected, occupying 334 stream miles. Just over 90 miles of habitat for the Central Bear population is located on the Forest in tributaries to the Smiths Fork and the Thomas Fork. This population is sympatric with non-native trout that are a source of competition and hybridization risk for the cutthroat populations (USFS 2019).
Abundance on the Bridger-Teton National Forest	The Wyoming State Wildlife Action Plan reports that the abundance and distribution of Bonneville cutthroat trout has declined from historical levels, but it is still common within a limited range throughout the state (WGFD 2017).
Population Trend on the Bridger-Teton National Forest	Over the last century, human land use and introductions of nonnative fishes have restricted Bonneville cutthroat trout range by displacement and degradation of suitable habitat. Historically and in more recent times, wildfires, drought and climate changes have also resulted in the loss or fragmentation of native cutthroat trout populations (USFS 2019). The range-wide status of Bonneville cutthroat trout has been greatly improving as of 2000 (Lentsch et al. 2000; see **Figure 1**, below). Although Bonneville cutthroat trout are restricted in numbers and distribution, populations are relatively stable, and extirpation is not imminent. Limiting factors are severe but not increasing significantly (WGFD 2017).

Criteria	Rationale
	 **Figure 1**. The number of Bonneville cutthroat trout populations indicates that the range-wide status of this species has been greatly improving since ~1980 (Lentsch et al. 2000)
Habitat Trend on the Bridger-Teton National Forest	Cutthroat trout typically requires cool, well-oxygenated water. The majority of cutthroat trout occur in stream environments with well-sorted streambed gravels, minimal amounts of fine sediments, and an abundance of pool habitats and healthy riparian streamside areas. In lakes, ideal conditions generally include a water body of sufficient size and depth as well as available oxygen during winter periods to reduce winter mortality (USFS 2019). The Bonneville cutthroat trout is known for its ability to survive in harsh and often degraded (mostly anthropogenic impacts) habitats. However, despite efforts to decrease entrainment and improve fish passage, there are still some irrigation canals that are impacting the subspecies, particularly during low flows (WGFD 2017).

Criteria	Rationale
	Stream and riparian health in the Bear River Basin have been altered as a result of human activities. Irrigation diversions and water developments have altered natural flow regimes and decreased habitat connectivity. In addition, climate change will likely lead to water development projects that alter the timing, magnitude and duration of natural hydrographs as well as intra- and inter-annual variability in Wyoming's streams and associated riparian corridors. Increased temperatures may alter the magnitude and timing of precipitation and runoff, possibly shifting the reproductive phenology and distribution of wildlife (WGFD 2017). Analysis of climate change risk to Bonneville cutthroat trout based on a coarse filter assessment of four environmental factors (increased summer temperature, increased winter flooding, increased wildfire risk, and protracted drought) indicates that nearly 60% of conservation populations range wide occupy habitat classified as high or very high risk. The majority of habitat in the Bear River basin of Wyoming is classified as high risk, with a small patch classified as low risk (Trout Unlimited 2011).
Threats to the Species and its Habitat on the Bridger-Teton National Forest	Hybridization with nonnative salmonids, especially rainbow trout, is the greatest threat to the genetic integrity of Bonneville cutthroat. The majority of populations in the Bear River basin of Wyoming are mixed, meaning pure and hybridized individuals are found within different reaches of a single population and neither occupies more than 80% of the habitat (Trout Unlimited 2011). Habitat fragmentation and degradation (e.g., from irrigation diversions, canals, and impoundments) are also major threats to the persistence of Bonneville cutthroat trout, and re-establishing population connectivity is a primary focus for minimizing risks over the long term (Lentsch et al. 2000). Despite alterations to stream and riparian health in the Bear River Basin (WGFD 2017), the majority of fish in the Bear River basin of Wyoming are classified as metapopulation, meaning it occupies at least 50 km of interconnected stream habitat, has a habitat patch size of 25,000 ha, and supports a migratory life history (Trout Unlimited 2011). This indicates that habitat is connected, and populations have access to varied habitats, that may enable them to adapt or relocate in the face of disturbance (Trout Unlimited 2011). Livestock grazing of an intensity and duration that exceeds the ability of streambanks and streambank stabilizing vegetation to recover can negatively affect aquatic habitat and fish populations (e.g., Dauwalter et al. 2014, WDGF 2017, Dauwalter et al. 2018). Other concerns are runoff associated from urban development, large forest fires, drought, and climate change (WGFD 2017). In particular, heavy riparian recreational uses, and major alterations to the watershed hydrology or sediment transport processes are the most common risks to stream and riparian habitat on the BTNF (USFS 2019). Rangelands are a major component of multiple use in the Bridger-Teton National Forest, and there are open rangelands throughout the Forest, which overlap completely with the entire Bonneville Cutthroat habitat and distribution (USFS 2017). Climate change may cause further habitat alterations. Although cutthroat trout occupy a broader thermal and stream size niche than other trout species and can persist in smaller habitat patches, they still require coldwater

Criteria	Rationale
	natal habitat patches exceeding ~2–6 miles. This value depends strongly on the prevalence of brook trout, water temperatures, and geomorphic conditions. Temperatures at the upstream extent of cutthroat trout populations in extremely cold streams will become more suitable from climate warming, but flows may become intermittent if precipitation patterns change (Halofsky et al. 2018).
Date: August 30, 2019 Reviewer: L. Chipman	

Summary and Recommendations

The Bonneville Cutthroat Trout, *Oncorhynchus clarkii utah,* are currently distributed on approximately 35% of their historic range. Of the current distribution, approximately 96 miles (of the current 2,380 occupied miles) resides within the Bridger Teton National Forest. There are two conservation populations on the Forest, the Lake Alice population and the Central Bear population. The Lake Alice population is well protected from severe threats to extirpation, but the Central Bear population is not. The Bonneville Cutthroat is more tolerant of warmer stream temperatures than most salmonids, which is the likelihood for their persistence in sub-optimal habitats on the Forest. But spawning and rearing Bonnevilles still require cold streams with clean gravel devoid of sediment in habitats contiguous from 2-6 miles to spawn successfully. Threats to this species include hybridization with non-natives, hybrids mixing with pure populations, reduced genetic diversity, wildfires, drought, sedimentation from riparian and upland grazing practices, heavy riparian recreational uses, habitat fragmentation from increasing irrigation needs, and entrainment in water diversions.

The Lake Alice population is genetically pure with little risk of invasion or disease. Even though the Central Bear is sympatric with non-native trout that are a source of competition and hybridization, this population is widely distributed in the plan area (USFS 2019). The range-wide status of Bonneville cutthroat trout has been greatly improving as of 2000 (Lentsch et al. 2000). Although Bonneville cutthroat trout are restricted in numbers and distribution, populations are relatively stable, and extirpation is not imminent (WGFD 2017). Therefore, it is recommended that Bonneville Cutthroat Trout is not a Species of Conservation Concern for the Bridger-Teton National Forest.

Summary and Recommendation Provided by: P.M. Barry (January 21, 2020), revised by Masako Wright (July 8, 2025).

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