

SPECIES: Scientific [common]	<i>Lepidomeda copei</i> [Northern Leatherside Chub]
Forest:	Bridger-Teton National Forest
Forest Reviewer:	Patrick M. Barry, Masako Wright
Date of Review:	1/21/2020, 6/25/2025
Forest concurrence (or recommendation if new) for inclusion of species on list of potential SCC: (Enter Yes or No)	YES

FOREST REVIEW RESULTS:

1. The Forest concurs or recommends the species for inclusion on the list of potential SCC:
Yes X No ___
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 Occurrence Records, 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
1997	3	Township - WY060450N1140W0	WYNDD (2019)
1997	2	Township - WY060260N1190W0	WYNDD (2019)
1996	1	Township - WY060260N1180W0	WYNDD (2019)
1996	1	Township - WY060250N1170W0	WYNDD (2019)
2003	7	Pacific Creek	WYNDD (2025)
2017	eDNA	Fish, Cottonwood, Bacon, Breakneck, and Squaw creeks and the Gros Ventre River	WGFD 2019
2018	eDNA	Fish, Cottonwood, Bacon, Breakneck, and Squaw creeks and the Gros Ventre River	WGFD2019

- 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?

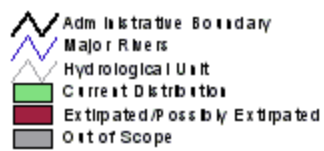
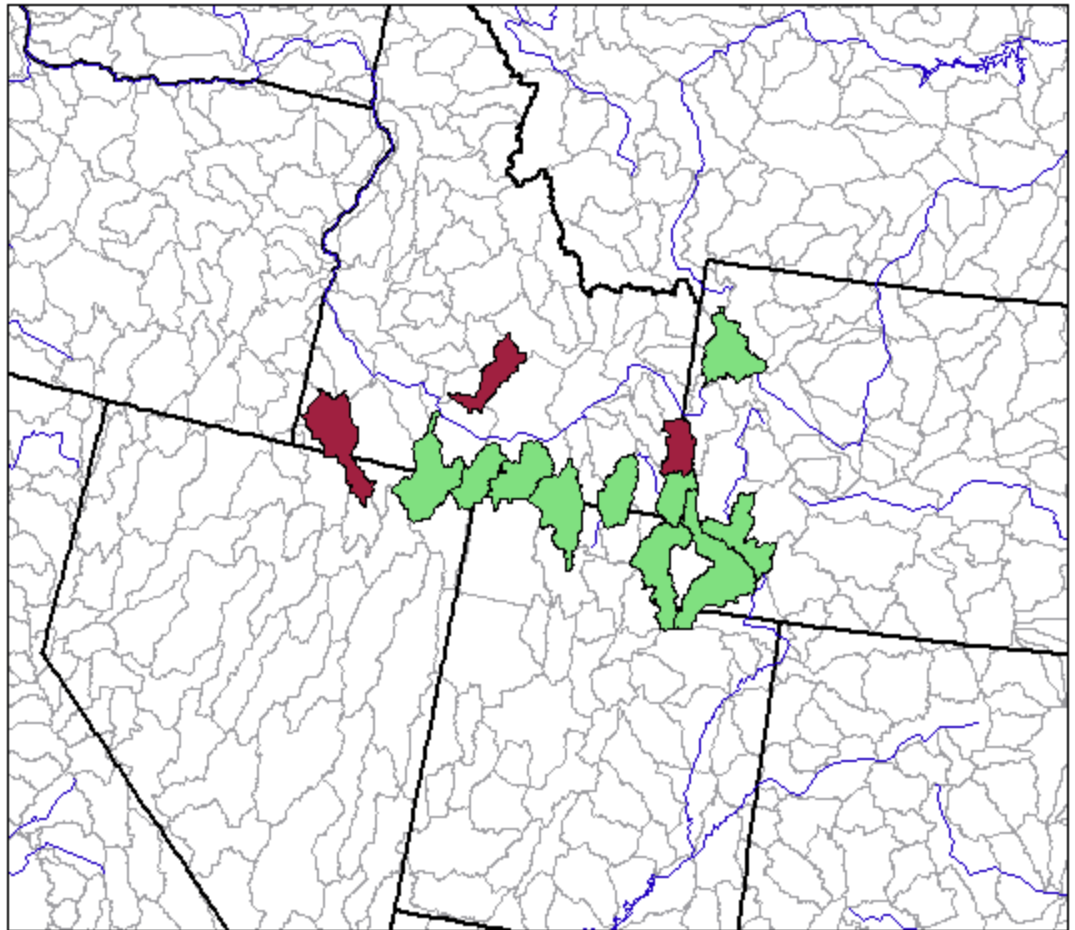
Yes ___ No ___

Provide explanation for determination

N/A – occurrences have been documented since 1990.

If determination is no, stop assessment

- d. **Map 1.** Range of Northern Leatherside Chub (*Lepidomeda copei*) in the western United States (NatureServe 2019).



Lepidomeda copei
Northern Leatherside Chub

100 0 100 Kilometers

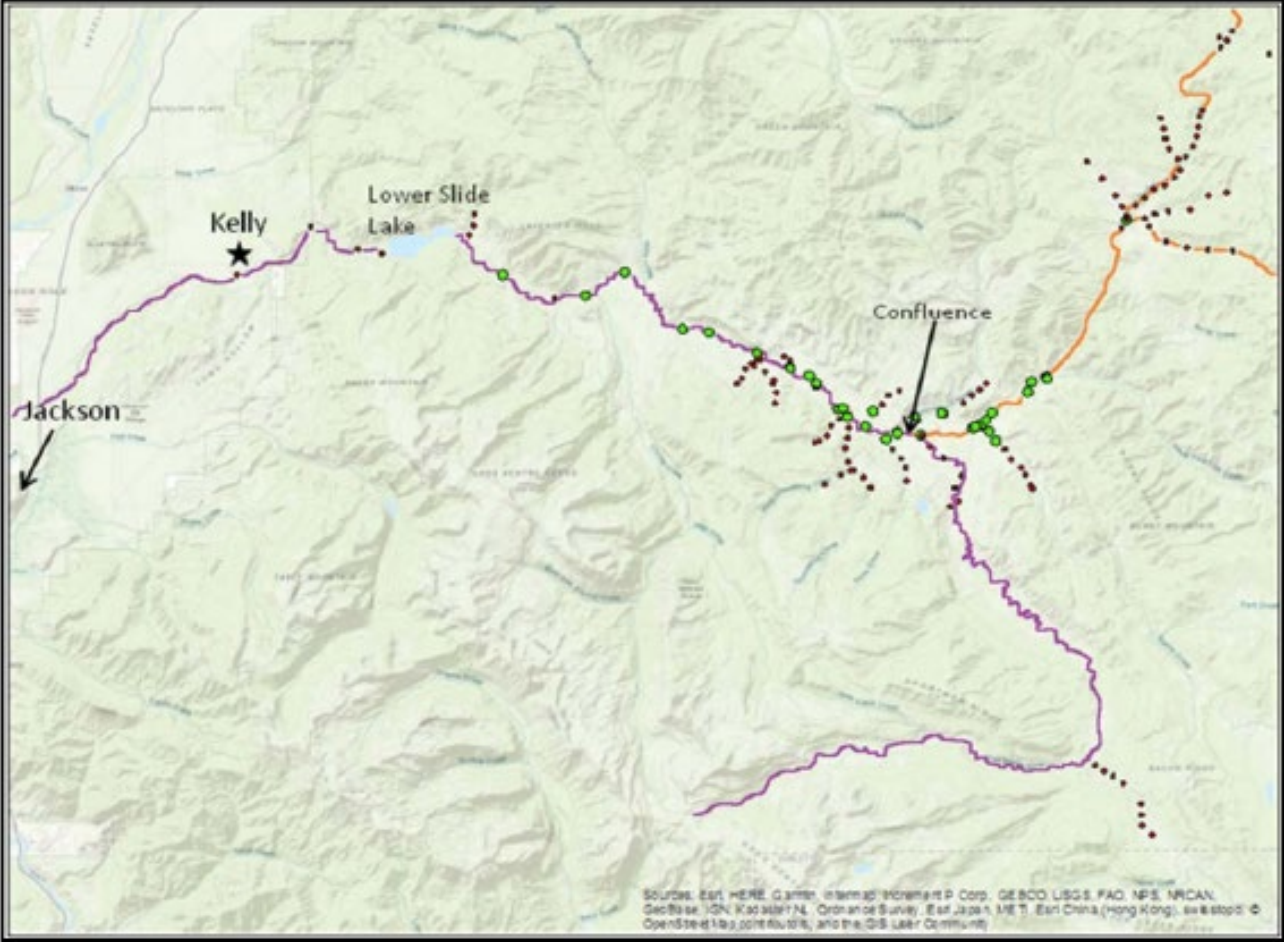
Map created September 2010



Map 2. Range of Northern Leatherside Chub (*Lepidomeda copei*) in Wyoming (WYNDD 2019).



Map 3. Experimental DNA sampling sites within the Gros Ventre (purple) and Fish Creek (orange) basins. Larger green dots depict samples that contained Northern Leatherside Chub DNA, sites negative depicted by smaller red dots. Positive sites were localized to the Gros Ventre River, Fish or Cottonwood creeks, or near the confluence of these streams (WGFD 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)
<p>NatureServe Global Status</p>	<p>G3—Vulnerable <i>At moderate risk of extirpation in the jurisdiction due to a restricted range, relatively few populations or occurrences, recent and widespread declines, threats, or other factors.</i></p>
<p>NatureServe State Status</p>	<p>S1— Imperiled <i>At high risk of extinction due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors.</i></p>
<p>WGFD</p>	<p>SGCN, NSS3 (Bb), Tier #II <u>Population Status:</u> <i>Vulnerable - Population size or distribution is restricted or declining, but extirpation is not imminent.</i> <u>Limiting Factors:</u> <i>Severe - Limiting factors are severe and not increasing significantly.</i> <u>Tier II:</u> <i>Moderate priority</i> <i>[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.]</i> (WGFD, 2017 - Wyoming Species of Greatest Conservation Need)</p>
<p>WYNDD</p>	<p>Species of Concern <i>Species vulnerable to extirpation at the global or state level due to:</i></p> <ul style="list-style-type: none"> <i>a. their rarity (e.g., restricted distribution, small population size, low population density)</i> <i>b. inherent vulnerability (e.g., specialized habitat requirements, restrictive life history)</i>

	<p><i>c. threats (e.g., significant loss of habitat, sensitivity to disturbances)</i></p> <p>(Wyoming Natural Diversity Database - Species of Concern)</p>
USDA Forest Service	<p>Region 4: Sensitive Species</p> <p><i>Those plant and animal species identified by a Regional Forester for which population viability is a concern, as evidenced by</i></p> <ul style="list-style-type: none"> <i>a. Significant current or predicted downward trends in population numbers or density.</i> <i>b. Significant current or predicted downward trends in habitat capability that would reduce a species' existing distribution.</i> <p>(FSM 2670.5 – Threatened, Endangered & Sensitive Species)</p>
USDOJ FWS	Not Listed
USDOJ BLM	<p>Sensitive (WY)</p> <p><i>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:</i></p> <ul style="list-style-type: none"> <i>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</i> <i>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.</i> <p><i>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</i></p> <p>(BLM Wyoming Sensitive Species Policy and List; March 31, 2010)</p>
IUCN	<p>Near Threatened</p> <p>A taxon in Near Threatened when it has been evaluated against the Red List criteria but does not qualify for Critically Endangered, Endangered, or Vulnerable now, but is close to qualifying for or is likely to qualify for a threatened category in the near future.</p>

(IUCN 2024)

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

Criteria	Rationale
Distribution on the Bridger-Teton National Forest	<p>Northern Leatherside Chubs are native to the Bear and Snake River drainages in Wyoming. This species is widely distributed across the Bear River drainage, where it is known from the Smiths Fork drainage near Cokeville, the Rock Creek drainage near Fossil Butte National Monument, and upper Bear River tributary streams south of Evanston (WGFD 2017). It is also found in Pacific Creek, Buffalo Fork River, Triangle X Spring, the Gros Ventre River, and the Salt River watershed (Idaho portion) in the Snake River drainage. This species also occurs in isolated tributaries of the upper Green River drainages, and those populations may be endemic. Its historical distribution has been reduced, and current populations are isolated and patchy. Populations of Northern Leatherside in Wyoming represent the core of the species' range, and the Bear River basin is the core of the Wyoming range (WGFD 2017).</p> <p>An ongoing study using environmental DNA has shown that these fish inhabit portions of Fish, Cottonwood, Bacon, Breakneck, and Squaw creeks and the Gros Ventre River. No positive samples were collected above the Cottonwood and Fish creeks confluence in the Gros Ventre River drainage (Map 3, WGFD 2019).</p>
Abundance on the Bridger-Teton National Forest	<p>This species is considered rare in Wyoming (WGFD 2017). Of the 151 samples taken from the Gros Ventre and Fish Creek basins in an environmental DNA study, 36 tested positive for Northern Leatherside Chub DNA (WGFD 2019). This species is considered abundant in Triangle X Sprong, but rare in Lower Salt River, Gros Ventre, Cottonwood Creek, Buffalo Fork River and Pacific Creek (WGFD 2025).</p>
Population Trend on the Bridger-Teton National Forest	<p>Populations have declined relative to historical observations and now appear to be extirpated in some systems. Current populations in Wyoming are extremely limited and isolated. Population size is variable with populations in some areas declining or vulnerable, while others appear stable. Extirpation is possible in some portions of its native range (WGFD 2017).</p>

Criteria	Rationale
<p>Habitat Trend on the Bridger-Teton National Forest</p>	<p>Northern Leatherside Chubs require flowing water and generally do not persist in lakes or reservoirs. In Wyoming, these fish normally inhabit deep pools in medium-sized streams with cool water temperatures as well as in streams with mostly riffle habitat. Key habitat components are water velocity, temperature, and depth. In the Snake River drainage, the Northern Leatherside occupy lateral habitats almost exclusively, usually with some type of cover (vegetation, woody debris, lateral banks). Northern Leatherside Chubs may be highly mobile and utilize a variety of habitats to complete its life history, and connectivity to other populations is likely influential to its occurrence (WGFD 2017).</p> <p>The Gros Ventre River drainage is a priority for Northern Leatherside Chub within the Snake River drainage. Several activities have reduced habitat quality on the Basin. Residential development throughout the Snake River, Flat Creek and Salt River valleys are directly influencing groundwater levels, water quality, and important spring streams. Additionally, flow regimes, instream habitat, and riparian function in the basin have been altered from the combined effects of Jackson Lake Dam and the levee system (WDGF 2017).</p> <p>Flow in the Snake River proper is regulated by Jackson Lake Dam, while all tributaries within the Lower Snake River Basin are free flowing. Substrate is approximately 50% cobble in the mainstem of the Snake River. The combined effects of Jackson Lake Dam and the levee system have altered flow regimes, instream habitat, and riparian function. Levees and lack of flooding negatively affected spring creeks and cottonwood regeneration outside the levee system. Therefore, the unimpeded reaches of river are critical to native fish (WGFD 2014).</p> <p>Conservation areas in the Bear River basin include the major tributaries Twin Creek, Smiths Fork, and Thomas Fork. The headwater tributaries of Mill, LaChapelle, and Sulphur creeks draining the north slope of the Uinta Mountains are critical for Northern Leatherside Chub conservation. Stream and riparian health in the Bear River Basin have been altered because 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).</p> <p>The Range-wide Conservation Agreement and Strategy for Northern Leatherside may help to protect and enhance habitat to ensure the persistence of these species throughout their ranges (UDNR 2009). Although habitat has been historically degraded and the carrying capacity of most streams has been compromised across the range of Northern Leatherside, habitat conditions are not likely to deteriorate into the future (WGFD 2017).</p>

Criteria	Rationale
<p>Threats to the Species and its Habitat on the Bridger-Teton National Forest</p>	<p>Rangewide threats to Northern Leatherside include habitat degradation, modification, and fragmentation. Habitat degradation from water development (e.g., diversions and dams) and stream alterations (e.g., channelization, barriers, etc.) are substantial threats to Northern Leatherside populations. Several Northern Leatherside streams are completely dewatered for irrigation during periods of high-water usage (UDNR 2009).</p> <p>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).</p> <p>Habitat fragmentation and population connectivity due to water development and diversion is a substantial threat to Northern Leatherside populations. Northern Leatherside that once occupied continuous drainages are now divided into smaller subpopulations with limited opportunity for genetic exchange. Fragmentation also limits access to preferred or necessary habitats (UDNR 2009), but habitat conditions are not likely to deteriorate into the future (WGFD 2017).</p> <p>Competition and predation from native and non-native fish may also adversely affect populations in some locales (WGFD 2017).</p>
<p>Date: August 30, 2019</p> <p>Reviewer: L. Chipman</p>	

Summary and Recommendations

The Northern Leatherside Chub, *Lepidomeda copei*, is sporadically distributed throughout the Bear River, Snake River, and Green River drainages. And genetic evidence suggests that these populations were once connected. However, their distribution is fragmented, and many barriers now exist within their range that were not historically present. Populations on the Bridger Teton National Forest have declined relative to historical abundance and with some populations now extirpated. Leathersides occupy a variety of habitats within the Forest and connectivity to other populations is likely influential to occurrence. Rangewide threats include predation from larger fishes, habitat degradation, modification, and fragmentation. Habitat deterioration for the species occurs from water developments, grazing management, and artificial stream alteration. Their diet consists primarily of macroinvertebrates that also fall victim to habitat deterioration. Most remaining populations remain isolated from one another, and reconnecting them is very unlikely to occur. Considering the current fragmented distribution, likelihood of increasing irrigation water demand further stranding and isolating populations on the Bridger Teton National Forest, the Northern Leatherside Chub is recommended as a Species of Conservation Concern.

Summary and Recommendation Provided by: P.M. Barry (January 21, 2020)

References

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