

Questions and Answers Regarding the Status Review Finding For the Northern Leatherside Chub

What is the status review finding regarding the Northern Leatherside Chub?

The U.S. Fish and Wildlife Service (Service) has completed a rangewide status review of the northern leatherside chub (*Lepidomeda copei*), which includes Utah, Nevada, Idaho, and Wyoming, and we determined it does not warrant protection as a threatened or endangered under the Endangered Species Act (ESA). We based our conclusion for this finding on a thorough review of all the available scientific and commercial information regarding the status of the northern leatherside chub and the potential threats to the species.

Despite not being warranted for listing as endangered or threatened, in making this finding we recognize that the northern leatherside chub may benefit from increased management emphasis due to its current fragmented distribution and its susceptibility to nonnative fish species. We recommend and encourage additional research to improve the understanding of the species and precautionary measures to protect the species. We remain a signatory partner to the ‘Rangewide Conservation Agreement and Strategy for Northern Leatherside Chub’ and will continue to work towards conserving and restoring this important, native species.

What is a status review?

A status review, also known as a 12-month finding, makes public the Service’s decision on a petition to list a species as threatened or endangered under the ESA. Our finding is based on a thorough assessment of the available information on the species, as detailed in the species’ status review. One of three possible conclusions can be reached as part of the finding: that listing is warranted, not warranted, or warranted but presently precluded by other higher-priority listing activities involving other species. In the case of the northern leatherside chub, the Service found that the species is not likely to become threatened or endangered within the foreseeable future in all of its range. Therefore, listing of the northern leatherside chub as a threatened or endangered species under the ESA is not warranted at this time.

What specifically does the Service look at to determine if a species needs to be listed as threatened or endangered?

We considered the species’ conservation status using the five factors specified in the ESA to determine whether it meets the definition of “threatened” or “endangered.” A species may be warranted for listing based on the present or threatened destruction, modification, or curtailment of a species habitat or range; overutilization for commercial, recreational, scientific, or educational purposes; disease or predation; inadequacy of existing regulatory mechanisms; or other natural or manmade factors affecting a species’

continued existence. We did not find the northern leatherside chub to be threatened by these factors, either individually or cumulatively.

What is the Northern Leatherside Chub and where is it found?

The northern leatherside chub species was formerly known as leatherside chub (*Gila copei* or *Snyderichthys copei*). However, recent scientific investigation indicates that the formerly recognized leatherside chub is actually two species, the northern and southern (*Lepidomeda aliciae*) leatherside chubs. The two species differ genetically, ecologically, physiologically, and geographically. The southern leatherside chub is found in the Utah Lake and Sevier River drainages of Utah, and was not considered in this finding.

The northern leatherside chub is a rare desert fish in the minnow family that occurs in northern Utah and Nevada, southern and eastern Idaho, and western Wyoming. Its common name comes from the leathery appearance created by small scales on a trim, tapering body. Individuals are typically less than 150 millimeters in length and may live up to eight years, reaching sexual maturity at approximately age two to four. They have relatively broad diets, eating items in both the stream drift and the substrate, with insects comprising a large portion of diet.

Northern leatherside chub occur in small desert streams between elevations of approximately 4,100 and 9,000 feet, with low to moderate velocities. Specifically, the northern leatherside chub is native to smaller, mid-elevation desert streams in the Bear River (draining to the Great Salt Lake) and Snake River (draining to the Pacific Ocean) subregions. Populations are also found in the Green River subregion in Wyoming, but biologists hypothesize that these populations are the result of human introductions. The range of northern leatherside chub has declined over the past 50 years.

What factors that could potentially affect the Northern Leatherside Chub populations did the Service examine?

The Service analyzed potential factors that may affect the habitat or range of the northern leatherside chub including livestock grazing, oil and gas development, mining, water development, water quality, fragmentation and isolation of populations, overutilization, disease, predation, inadequacy of existing regulatory mechanisms, hybridization, and climate change.

Factor A -- Habitat

We investigated such practices known to occur at or near existing northern leatherside populations, including: livestock grazing, oil and gas development, mining, and water development. Based on their long-term persistence in degraded areas and anecdotal evidence of their short-term persistence in extreme environmental conditions (e.g. stagnant pools), we concluded that northern leatherside chub are robust to some habitat modification and some short-term disturbances.

Livestock Grazing

We found there is no indication that livestock grazing is negatively impacting existing populations of northern leatherside chub, although grazing has likely affected water quality in some areas. Populations of northern leatherside chub occur in a wide variety of habitat conditions, from unaltered locations to those with heavily altered riparian conditions impacted by livestock grazing practices. In fact, some of the densest populations occur in areas that are heavily grazed.

Energy Development

We found that past, present, and future oil and gas development is unlikely to impact the vast majority of northern leatherside chub populations. While some resource potential exists, current information does not indicate that oil and gas development will occur in occupied areas. Similarly, mining related impacts in northern leatherside chub habitat are limited. While some historic and current mines are located in occupied areas, we have no information at this time to suggest that mining activities are having an effect on water resources or habitat of northern leatherside chub.

Water Development

We determined that current levels of water development—resulting in entrainment and dewatering—impact only a small portion of the extant populations of northern leatherside chub, and primarily occur downstream of the inhabited population areas. Future water development in occupied areas is closed in Utah and Idaho, unlikely in Nevada, and small-scale in Wyoming. Therefore, water development is not imperiling overall population persistence now and will not in the foreseeable future.

Water Quality

Impaired water quality (based on Clean Water Act 303d lists from the various states) affects the habitat of two populations of northern leatherside chub rangewide (Beaverdam and Trapper Creeks), both in the Snake River subregion. However, populations of northern leatherside chub have persisted in these areas, and water quality impacts only affect two of fourteen populations. Therefore, we find that water quality is not a threat to the northern leatherside chub rangewide.

Factor B -- Overutilization

We are not aware of any information indicating that overutilization for commercial, recreational, scientific, or educational purposes threaten the northern leatherside chub.

Factor C -- Predation and Disease

Predation

Northern leatherside chub are small minnows, and as such, are prey for larger fish and sometimes birds. Because of their predatory behavior, we considered the nonnative brown trout (*Salmo trutta*) and rainbow trout (*Oncorhynchus mykiss*) as potential threats to northern leatherside chub. However, we did not consider nonnative brook trout (*Salvelinus fontinalis*) as a threat, because they are not especially piscivorous (fish eating).

Most northern leatherside chub populations (9 of 14) do not share habitats with nonnative trout and stocking of brown trout was greatly reduced in recent years. Therefore, predation from nonnative trout is not a threat to northern leatherside chub rangewide.

Disease and Parasitism

We are not aware of any information indicating that disease or parasitism threatens the northern leatherside chub.

Factor D -- Regulatory Mechanisms

We find that the existing regulatory mechanisms are sufficiently mitigating potential threats from land development to extant northern leatherside chub populations. Large portions of occupied stream miles and upland watersheds are owned by Federal land management agencies, allowing Federal environmental regulations and policies to apply. The regulations and policies will offer some protection from future land management threats, should they occur.

In our review of the factors affecting northern leatherside chub, we found no single factor or accumulated effects of factors that rise to the level of a threat significant enough, now or in the foreseeable future, so that the species warrants the protections of the ESA. Therefore, the existing regulatory mechanisms were determined adequate.

Factor E – Other

Climate Change

Because northern leatherside chub are adapted to warmer water temperatures, we believe that warming stream temperatures are not a threat to northern leatherside chub populations in the foreseeable future. Most populations occur in areas with upstream habitats that may become suitable as temperatures rise, allowing populations to shift into currently unoccupied upstream or adjacent stream habitats.

Recent modeling efforts predict increased frequency of catastrophic events, especially increased wildfires and prolonged drought. We expect connected, large populations to adjust to these disturbances with natural demographic fluctuations. While the smaller, more isolated northern leatherside chub populations are at an increased risk from increased frequency of possible stochastic events associated with climate change, there is still uncertainty on how, when, or if, these impacts will occur.

Climate change related distributional shifts of nonnative trout are not expected to threaten the species. Only one population of northern leatherside chub in Jackknife Creek may be at increased risk from shifting nonnative trout, therefore we believe the species rangewide is resilient to this threat.

Fragmentation and Population Isolation

Rangewide, six of the fourteen northern leatherside chub populations are isolated. We find that two populations of northern leatherside chub, Trapper and Pacific Creeks, are isolated from other populations and are vulnerable to stochastic events, including local disturbances, such as disease, pollution, or floods. One additional population is fragmented but protected by large population numbers (Dry Fork Smiths Fork). The remaining isolated populations are not impacted by fragmentation because they have multiple occurrences in the population, allowing for natural demographic processes.

Many Bear River populations are not isolated or fragmented, but rather can interact in pairs, allowing for recolonization and emigration potential. This core group of populations provides a stable, secure foundation for species persistence. Therefore, we find that fragmentation and isolation is not a threat to the northern leatherside chub.

Hybridization

Hybridization can be a concern for some fish populations and is commonly associated with disturbed environments. Based on recent examination of northern leatherside chub genetics, we conclude that hybridization is not a threat to the northern leatherside chub now or in the foreseeable future.

Little information exists on this species. How did the Service analyze the species' distribution?

For this finding, we completed an internal document (also known as a 'white-paper') summarizing current and historical distributions through the Fall of 2010. State wildlife agencies and universities reviewed the document to ensure that it summarized their data collections correctly. Information from our white paper is used throughout the finding to inform our conclusions. However, understanding of this species' current and historical range is ongoing, and new information may soon emerge to more clearly define the species' distribution.

We commend state wildlife agencies, non-profit organizations, and academic institutions for their recent efforts to document the species and monitor populations. We support continued efforts to better understand the species' ecology, life history, and distribution.