U.S. Fish and Wildlife Service

Frequently Asked Questions

Proposed Rule to Remove Borax Lake Chub from the Federal List of Threatened and Endangered Species

What action is being taken by the U.S. Fish and Wildlife Service?

The Service is proposing to remove Borax Lake chub (*Siphateles boraxobius*) from the list of threatened and endangered species (delist) under the Endangered Species Act.

What type of fish are these?

The Borax Lake chub is a small minnow in the Family Cyprinidae, found only in Borax Lake of Harney County, Oregon. It is an opportunistic omnivore, eating both plants and animals. The diets of juveniles and adults are similar and include aquatic and terrestrial insects, algae, mollusks and mollusk eggs, aquatic worms, fish scales, spiders, and seeds. Males, and some females, reach reproductive maturity within one year. Spawning primarily occurs in the spring but can occur year-around. The reproductive behavior and length of incubation is unknown.

Where is this fish found?

The only place in the world where Borax Lake chub lives is Borax Lake. Borax Lake lies in the Alvord Basin, part of the larger Great Basin, which was dominated by a much larger Alvord Lake approximately 10,000 years ago. As Alvord Lake receded, native fishes became restricted to remaining springs, lakes, and creeks. Individuals from Alvord Lake's ancestral chub became isolated in the geothermal springs of Borax Lake and over time the isolation and unique environmental conditions resulted in adaptations that differentiated the fish into the species now recognized as Borax Lake chub.

Borax Lake is a 10.2 acre geothermally heated alkaline spring-fed lake in southeastern Oregon. The lake is perched 30 feet above the desert floor on large sodium-borate deposits. Water depth averages approximately 3.3 feet, with a maximum measured depth of 88.6 feet at the thermal vent. Thick silt covers the lake bottom, along with patches of bedrock, fine gravel, and sparse growth of aquatic macrophytes. Average lake temperatures range from a high of 104 degrees Fahrenheit to an average low of 72 degrees Fahrenheit near the shoreline. Studies showed that Borax Lake chub prefer the shallow habitats along the margins of the lake.

Why was this fish listed?

The listing action was taken because of geothermal development exploration in close proximity to Borax Lake and human modification of the lake that threatened the integrity of the species' habitat and survival.

When was this fish listed?

The Borax Lake chub was emergency listed under the Endangered Species Act in 1980. The final rule listing the chub as endangered and designating critical habitat was published in 1982.

Why isn't this fish first being reclassified as threatened from its endangered status?

The 2012 5-year review concluded the Borax Lake chub no longer met the definition of an endangered species and recommended reclassifying the species to threatened. Since that time, additional recovery actions have occurred including development of the Borax Lake chub draft cooperative management plan, construction by the BLM of a fence and locked gate surrounding critical habitat at Borax Lake thereby preventing vehicle entry, and additional monitoring of the fish and its habitat. In addition, our analysis in the proposed delisting rule suggests the potential for geothermal development on private lands in the area is low and does not represent a threat at this time. Given these additional recovery actions and our new analysis regarding the potential threat of geothermal development, we now determine the fish does not meet the definition of a threatened or endangered species.

How is this proposed delisting possible?

Partnerships have been the foundation of the recovery of this fish. Conservation partners have led the effort to protect Borax Lake. With threats alleviated, the Service is able to propose removing this fish from the Federal List of Threatened and Endangered Species.

For Borax Lake chub, most of the threats and potential threats identified at the time of listing have been reduced or eliminated through the acquisition and management of Borax Lake and surrounding lands. The Nature Conservancy purchased the 160-acre parcel containing the lake and an adjacent 160-acre parcel (320 acres in total), and the Bureau of Land Management provided additional conservation by designating the adjacent 600 acres as an Area of Critical Environmental Concern. The passage of the

Steens Mountain Cooperative Management and Protection Act of 2000 (Steens Act) withdrew 900,000 acres of BLM administered lands, including Borax Lake and surrounding public lands, from mineral development. Lastly, the Oregon Department of Fish and Wildlife has led monitoring efforts and acquired water rights to protect lake levels. Oregon State University has also contributed to the recovery of Borax Lake chub by providing scientific guidance.

How many fish are in the lake?

Over the three decades estimates have been conducted, the population abundance has shown a high degree of variability ranging from a low of 1,242 in 2015 to 35,650 in 1993. The most recent population estimate from 2017 was 76,931 individuals, which is a new record population high. A pattern of population reduction followed by a 1-5 year period of rebuilding has been observed multiple times during the period of record. The reasons for this variability are not entirely clear but could be related to water temperatures. Borax Lake water temperatures are influenced by both air temperatures and by water temperatures emanating from the lake's primary source of inflow a geothermal spring. The Borax Lake chub is the only fish found living in the lake and given the unique and harsh water quality it is unlikely other species of fish could establish themselves in this waterbody.

Why does this matter to me as an Oregonian?

The entire world-wide range of this species is limited to a single 10-acre lake in the desert of eastern Oregon. The Borax Lake chub adapted over tens of thousands of years to its unique habitat, with high temperatures and chemicals such as lead and arsenic in the water that most aquatic species would not survive in. Borax Lake and the chub are treasures of our state.

I don't live in Oregon. Why does this matter to me?

Recovering species is an achievement to be celebrated because it shows that collaborative efforts can pay off to protect even the rarest species. Downlisting, and especially delisting recovered species, also means the Service can focus its limited resources on other species still facing the risk of extinction.

How does this help other desert species?

Aquatic ecosystems within a desert ecosystem provide important habitat and are a haven for biodiversity. As these wetlands are protected or restored, many other species have benefitted beyond this fish.

Borax Lake supports at least 296 invertebrate species and has one of the rare populations of the lamb rams-horn aquatic snail. In addition, the lake supports some very unique creatures along its northern edge - living stromatolites. These beautiful formations are

actually mounds formed by the growth of layer upon layer of cyanobacteria, a single-celled photosynthesizing microbe.

How does a species get reclassified or removed from the Federal List of Threatened and Endangered Animals?

When a species is put on the Federal List of Endangered and Threatened Animals, the Service develops a recovery plan that includes specific recovery goals. Reviews of the species' status are conducted every five years. Once we determine the recovery goals are met and threats no longer prevent the population from persisting into the future, the species can be proposed for delisting. After we consider comments from the public during a formal rulemaking process, and are sure the proposal is warranted, the species is removed from the list.

Have other fish been delisted from the ESA?

Oregon chub was the first fish delisted due to recovery, which means the fish has a healthy, thriving population and no longer requires the protection of the ESA. Modoc sucker, found in Oregon and California, was the second fish delisted due to recovery.

The Foskett speckled dace, another Oregon desert fish, was proposed for delisting in January 2018 and we expect to finalize in the near future.

Other fish have been delisted, one (coastal cutthroat trout) as a result of taxonomic revision and four (Amistad gambusia, Tecopa pupfish, blue pike and longjaw cisco) due to extinction.

How many other species have been removed from the Endangered Species List?

In the 40-plus years since the ESA was signed, 40 species have successfully recovered and been removed from the endangered species list.

How many other fish are currently on the Endangered Species List?

There are 160 fish species listed under the ESA in the United States.

Aren't fish listed under the ESA managed by NOAA Fisheries?

Not necessarily. Generally, species such as salmon and steelhead that spend the greater part of their life in salt water are managed by NOAA Fisheries, in the U.S. Department of Commerce. Fish that spend most or all their lives in fresh water, such as the Oregon chub and bull trout, are managed by the U.S. Fish and Wildlife Service, in the Department of the Interior.

Could the fish become endangered again?

Threats to this species have been lessened, so that the species is not currently and is not likely to again become an endangered species. In addition, the post-delisting monitoring plan will keep an eye out for new or re-emergent threats to this species.

What other Oregon wildlife are close to being recovered?
Several Oregon species have been recovered or are on the path to recovery. The Douglas County population of the Columbian white-tailed deer was delisted in 2003, and the Lower Columbia River population was downlisted from endangered to threatened just over one year ago. Other species like Bradshaw's lomatium and Fender's blue butterfly are making strong gains in recovery, so stay-tuned for future announcements.

How can I share my opinion on the proposed delisting of the Borax Lake chub?
The announcement on the proposed delisting of the Borax Lake chub opens a 60-day comment period to allow the public to review, comment, and provide additional information. The Service will also be accepting comments on the draft post-delisting monitoring plan for Borax Lake chub. For instructions on how to comment, go to http://www.fws.gov/oregonfwo/.

For more information about these fish and links to the federal register notices, visit http://www.fws.gov/oregonfwo/.