

Colorado pikeminnow (*Ptychocheilus lucius*)

The Colorado pikeminnow is the largest minnow in North America and is an endangered, native fish of the Colorado River thought to have evolved more than 3 million years ago. Called the "white salmon" by early settlers due to its migratory behavior, the Colorado pikeminnow has a torpedo-shaped body and a large, toothless mouth. It has an olive-green and gold back and a silvery-white belly.



Click image to see a larger view

Colorado pikeminnow can live up to 40 years and were historically known to grow to nearly 6 feet long and weight 80 pounds. Today, researchers commonly see adult Colorado pikeminnow that are 2 to 3 feet in length. Colorado pikeminnow are known for long-distance spawning migrations of more than 200 miles in late spring and early summer. They are capable of reproducing at 5 to 7 years of age. Young Colorado pikeminnow feed on insects and plankton, whereas adults feed mostly on fish.

The Colorado pikeminnow was a valued food source by early settlers. Dale Stewart of Vernal, Utah, caught a 25-pound Colorado pikeminnow in 1937. He reminisced about the fish's food value. "You can see how you cut steaks off that thing," he said. "I remember a fish like that really was a harvest, and it produced not just one meal, but quite a few meals for the family." ([Also see: Historical perspective.](#))

The Colorado pikeminnow was the Colorado River's top predator in the early 1900s and has been known to take anglers' bait in the form of mice, birds, and even small rabbits, despite that its only "teeth" are found on a bony, circular structure located deep within its throat. This fish also readily strikes lures and live bait used to catch sport fish or nonnative fish.

Status and distribution

- Listed as endangered by U.S. Fish and Wildlife Service in 1967; given full protection under the Endangered Species Act of 1973.
- Listed as endangered under Colorado law in 1976; status changed to threatened in 1998.
- Protected under Utah law since 1973.

Colorado pikeminnow were once abundant in the main stem of the Colorado River and most of its major tributaries in Colorado, Wyoming, Utah, New Mexico, Arizona, Nevada and California. Today, two wild populations of Colorado pikeminnow are found in the Upper Colorado River Basin - one in the upper Colorado River system and one in the Green River system. The San Juan River Basin Recovery Implementation Program continues to stock Colorado pikeminnow to develop a separate, self-sustaining population.

The Colorado pikeminnow is adapted to warm rivers and requires uninterrupted passage and a hydrologic cycle characterized by large spring peaks of snowmelt runoff and lower, relatively stable base flows.

Working to recover the species

Actions being taken to recover the Colorado pikeminnow include:

- Managing water to provide adequate instream flows to create beneficial water flow
- Constructing fish passages and screens at major diversion dams to provide endangered fish with access to hundreds of miles of critical habitat
- Developing backwaters for early life stages
- Monitoring fish population numbers
- Managing nonnative fishes

Recovery goals

Colorado pikeminnow will be considered eligible for downlisting from "endangered" to "threatened" and for removal from Endangered Species Act protection (delisting) when all of the following conditions are met:

- Self-sustaining fish populations reach the required numbers in areas of the Green, Colorado and/or San Juan rivers as identified in the chart below.
- The threat of significant "fragmentation" of the population has been removed. (Fragmentation refers to separation between fish populations caused by geographical distance or physical barriers.)
- Essential habitats, including primary migration routes and required stream flows are legally protected.
- Other identifiable threats that could significantly affect the population are removed.

DEMOGRAPHIC CRITERIA FOR RECOVERY	
DOWNLISTING	DELISTING
COLORADO PIKEMINNOW	
Over a 5-year monitoring period: <ul style="list-style-type: none"> Maintain the upper basin metapopulation* Maintain populations in Green River and upper Colorado River subbasins ("no net loss") Green River subbasin population > 2,600 adults Upper Colorado River subbasin population > 700 adults Establish 1,000 age-5+ subadults in San Juan River 	For 7 years beyond downlisting: <ul style="list-style-type: none"> Maintain the upper basin metapopulation* Maintain populations in Green River and upper Colorado River subbasins ("no net loss") Green River subbasin population > 2,600 adults Upper Colorado River subbasin population > 1,000 adults OR Upper Colorado River subbasin population > 700 adults and San Juan River population > 800 adults

*A metapopulation consists of a group of spatially separated populations of the same species which interact at some level, or "a population of populations."

Sacramento pikeminnow, Umpqua pikeminnow and northern or Columbia River pikeminnow

In addition to the Colorado pikeminnow, there are three other species of pikeminnow in the United States: the Sacramento pikeminnow, Umpqua pikeminnow and northern or Columbia River pikeminnow. Each of these is a different species of pikeminnow, much like a cutthroat trout and rainbow trout are different species of trout or a grizzly and black bear are different species of bear.

None of these other species has been known to grow to the size of the Colorado pikeminnow. Also, each species of pikeminnow has a distinct appearance and behavior. For example, the northern pikeminnow originally evolved in lakes and appears to adapt easily to reservoirs.

Unlike the endangered Colorado pikeminnow, northern pikeminnow are able to thrive despite habitat alterations resulting from the installation of dams and introductions of nonnative fish species.

The northern pikeminnow also preys effectively on sport fish, and often becomes the dominant species in reservoirs, despite biologists' efforts to limit their population size. Northern pikeminnow are so prevalent in the Columbia River Basin that they are considered a threat to salmon species.



No other pikeminnow, such as the Sacramento pikeminnow or the northern pikeminnow is threatened or endangered. These are entirely different species from Colorado pikeminnow, much as bald eagles are different from golden ----



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Description: This large chub is also a member of the minnow family. It's similar to the humpback chub, but it has only a slight hump behind the head and a long, narrow tail. Adults are dark on top and light below. They are very dark in clear waters and pale in turbid waters. Bonytails can reach 24 inches in length. They have green-gray backs with lighter sides and white bellies. During breeding, males turn red-orange on the belly and paired fins. Their fins are large, slightly falcate. Dorsal fins typically have 10 rays, tail fins have 10 to 11 rays.

Range: Historically, bonytails were present in the Colorado River system, which includes the Yampa, Green, Colorado and Gunnison rivers. Today, there are no known populations in Colorado. They can be found in the Green River drainage in Utah and Mohave Reservoir on the Arizona-Nevada border.

Habitat: This fish typically lives in large, fast-flowing waterways of the Colorado River system. But their distribution and habitat status are largely unknown due to its rapid decline prior to research into its natural history.

Diet: Adult bonytail feed on terrestrial insects, zooplankton, algae and plant debris. Young feed mainly on aquatic insects.

Breeding: Although bonytail spawning in the wild is now rare, the species does spawn in the spring and summer over gravel substrate. Many bonytail are now produced in fish hatcheries, with the offspring released into the wild when they are large enough to survive in the altered Colorado River system environment. Females produce between 1,000 and 17,000 eggs. Hatching occurs about nine hours after fertilization and swim-up begins generally 48 to 120 hours later. Survival rate of young fish is about 17 to 38 percent.

Endangered status: The bonytail is listed as endangered federally and in Colorado. Reasons for its decline are probably similar to the other endangered Colorado River fishes. The large-scale damming of the river has diminished available habitat. Damming and channeling not only change the speed, location and volume of water flow, the practices change the temperature and clarity of the water and block migration routes. Other threats to the bonytail have been the introduction of non-native fish that compete for food and habitat, and may prey on it or hybridize with it. The bonytail is extremely rare in Colorado and no self-sustaining population exist throughout the Colorado River basin. Only one has been captured in the state since 1980. Restoration stocking of bonytail in the wild to develop adult populations is the priority recovery action in Colorado and the Upper Basin Recovery Program. Stocking of bonytail has occurred in the Green River in Utah and the Green and Yampa rivers in Dinosaur National Monument in Colorado. While these releases continue over the next several years, efforts will be made to monitor their survival and learn as much as possible about their habitat needs and limiting factors.

For more information, see the [Natural Diversity Information Source species profile](#).

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