



WILDLIFE NOTES

Chihuahua Chub

When General Kearney reached the Mimbres River on his march to California in 1846, he described the area as a valley dense in cottonwoods and hardwoods and the river as a "rapid, dashing stream, filled with trout." Other early field researchers described the lower Mimbres River as a series of lagoons and deep pools shaded by willows, ideal for Kearney's "trout" which were actually Chihuahua Chub. The Mimbres Indians who inhabited the Mimbres Valley from AD 200 until around AD 1150 frequently depicted this fish on their pottery, suggesting it once was an important food source. Old timers in the Mimbres Valley also fished for the Chihuahua Chub, which they sometimes referred to the "Gila trout". This chub is now one of the two surviving species of native fish in a highly degraded Mimbres River (the other is the Rio Grande Sucker).

The Chihuahua Chub was first collected in 1851. Shortly thereafter, the fish seemed to disappear. At the turn of the century, mining, ranching, and irrigated farming were drastically changing the area. The Mimbres River flow was severely reduced; some por-

tions dried up. The dense woodlands along the banks were cut. Floods scoured the channels. But in 1975, 125 years after the fish was last recorded, a high school teacher rediscovered a remnant population.

RANGE

The Chihuahua Chub is endemic to the Mimbres River and Guzman Basin that overlaps the international border between Chihuahua Mexico and southwest New Mexico. More precisely, Chihuahua Chub in the United States occur in just about a 9-mile section of the Mimbres River and associated spring habitats found just south of the Gila National Forest boundary. Chihuahua Chub have also been reintroduced into McKnight Creek, a tributary to the Mimbres River, on the Gila National Forest. The largest population of chubs occurs in a single spring, where its numbers typically are less than 300 adults. Historically, the Chihuahua Chub probably occurred in all the warmwater reaches of the Mimbres drainage. When we



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look at the distribution of Chihuahua Chub, we start to see the trace of ancestral rivers and prehistoric lakes. In the late Pleistocene, when the climate was cooler and moister, a huge lake filled the Guzman Basin and probably connected Mexican rivers with the Mimbres, allowing dispersal of the chub throughout the area.

HABITAT

Chihuahua Chub are found in areas where there are deep pools bordered by undercut banks, or in pools that are formed around obstructions such as boulders and root balls. They choose pea-gravel and/or sand substrates. Riffles are usually just upstream of pools occupied by Chihuahua Chub. The pools they inhabit are usually near brush or other cover. This type of habitat pro-

vides both escape cover and foraging habitat.

DESCRIPTION

Chubs are members of the minnow family, Cyprinidae. Mature Chihuahua Chub look a bit like small trout. They are dusky brown to brassy green on top and white on the belly, with two indistinct lateral stripes. They have a spot above the lateral line at the base of the tail fin. Chihuahua Chub can average 5-6 inches in length at maturity and may reach 12 inches. However, most remaining individuals are less than 4 inches, males smaller than females.

DIET/FEEDING

The Chihuahua Chub is an opportunistic carnivore, feeding primarily on aquatic invertebrates, terrestrial insects washed into the water, and possibly on small fish.

REPRODUCTION

Chihuahua Chub generally spawn in late April or May, but may have a spawning season that extends anywhere from early spring through autumn. During spawning season, the chub blushes with orange-red around the mouth and the pelvic and pectoral fins. Fertilization is external. Spawning is believed to take place in quiet pools approximately 3 to 7 feet in depth. Adults do not guard the young. When the young hatch, the fry sink to the bottom until they absorb their yolk sac, then start to swim around in search of food. Young most likely occupy quiet backwaters.

Chubs probably do not live more than 4 or 5 years.

CONSERVATION

Presently over 18 species or subspecies of chubs (*Gila* sp.) native to the southwest are considered endangered, threatened, or are of special concern. Like many of our native fishes, they have been devastated by a combination of habitat modification by live-stock overgrazing, diversion or overuse of water resources, roads and urban and agricultural development and non-native fish introductions.

In 1983, the Chihuahua Chub was federally listed as threatened under the Endangered Species Act. It is treated as endangered by the State of New Mexico.

Chihuahua Chubs are more important than their size might indicate. They reflect the health of the whole Mimbres Valley ecosystem. Like trout, Chihuahua Chubs need clean water with overhanging vegetation to shade the water and to provide insect habitat. They need deep pools for good hunting and sand and gravel bottoms for spawning. There are not many deep pools left on the Mimbres. In most places,

the Mimbres River is only a few inches deep, and some stretches regularly go dry during the peak water diversions for irrigation. The Mimbres Watershed is also threatened by wildfire. Ash flows and elevated sediment transport have diminished habitat quality. Additionally, non-native fish such as Rainbow Trout (the Mimbres River held no trout historically), bullheads, Largemouth Bass and Longfin Dace threaten the Chihuahua Chub. A trematode parasite (*Clinostomum marginatum*) infestation may also pose problems for the fish.

Today Chihuahua Chub survive only in remote areas free of habitat modification. Fortunately for Chihuahua Chub, the Nature Conservancy and New Mexico Department of Game and Fish have both purchased sections of the upper Mimbres River containing a population of these native fish. These preserves also provide habitat for the federally threatened Chiricahua Leopard Frog. In 1979, ten pairs of Chihuahua Chub were brought to the Dexter National Fish Hatchery to spawn. From generations of their offspring, chubs are re-stocked into the Mimbres River.

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