Bonytail

(*Gila elegans*)—Endangered

Description

The bonytail has a wide, flattened head which is concave in profile. An adult may grow up to 17 inches in length and weigh over 1 pound. However, most usually range between 8 and 13 inches in length and weigh less than a pound. Its mouth is large, with the corner of the mouth extending to the front part of the eye. The lips lack barbels. The eyes are small and eliptical. Its back hump is less pronounced than the Humpback chub. The body is slender but enlarged, making the head appear smaller. This fish either lacks body scales or has tiny embedded scales.

Bonytails feed on insects, with larger members eating terrestrial insects such as beetles, grasshoppers and ants. They also eat surface drift composed of insects and plant matter.

Distribution and Habitat

The bonytail is found in larger channels of the Colorado River system, in swift water, and also in Nevada, along the main channel of the Colorado River and lower part of the Virgin River. Several historical accounts describe bonytail throughout the Colorado River system more than 100 years ago.

The basic biology of bonytail was not studied in detail until the late 1960's. Even then, early studies focused on the abundance, life history, and distribution, and little was determined about its ecology. During this period, bonytail numbers were greatly reduced. Thus, the ecological requirements of the bonytail remain poorly understood. The last known concentration of bonytail were captured in Split Mountain Canyon of the Green River through Dinosaur National Monument, Utah. In 1993, a suspected adult bonytail was captured in the Colorado River about 4 miles upstream from its confluence with the Green River. Utah Division of Wildlife Resources captured two potential bonytail in 1996 in the Colorado River in Cataract Canyon and in Desolation Canyon.

The bonytail represents environmental selection of those traits in the species which are of paramount importance to living in swift water. These traits include greater streamlining, powerful fins for more efficient propulsion, and head dorsum concavity to aid in steadying against the strong currents on the river bottom.

Photo courtesy of Utah Division of Widlife Resources.

Life History

Bonytail spawn in the spring usually when water temperatures exceed 64 degrees F. Females produce between 1,000 and 17,000 eggs which are deposited at random over gravel bars. The eggs adhere to rocks or settle in depressions. No parental care is given to the eggs once they are deposited. Eggs begin hatching about 9 hours after fertilization, and swim-up occurs generally 48-120 hours later. Survival rate of juveniles is 17-38%. Bonytails mature at 2-3 years of age.

Threats and Reasons for Decline

Bonytails evolved in a harsh and unusual environment. As the environment changed, they rapidly went from being one of the most common to the rarest fish species in the Colorado River system. The primary reasons for the decline of the bonytail are changes in stream flow and water temperature, direct loss of habitat due to inundation by reservoirs, blockage of migration routes, and the introduction of non-native fish.

Recovery Efforts

Bonytails were listed by the U.S. Fish and Wildlife Service as an endangered species in 1980. The Colorado River System Endangered Fish Recovery Program agreement, signed in January

1988, includes five basic steps to aid in the recovery of the bonytail:

1. Provision of instream flows
2. Habitat development and maintenance
3. Native fish stocking
4. Management of non-native species and sport-fishing
5. Research, monitoring and data management

The goal of this program is to maintain and protect self-sustaining populations and sufficient natural habitat to sustain these populations. This program will likely be beneficial to other endangered species sharing this habitat, including the humpback chub, razorback sucker, and the Colorado squawfish. There is currently a population of bonytails being maintained at the Dexter National Fish Hatcheries in Dexter, New Mexico.

Bonytail distribution.

References

Kaeding, Lynn R. 1990. Temporal and spatial relations between the spawning of the humpback chub and the roundtail chub in the Upper Colorado River. Transactions of the American Fisheries Society. American Fisheries Society: Lawrence, Kansas.

La Rivers, Ira. 1994. Fishes and fisheries of Nevada. University of Nevada Press: Reno, Nevada.

"*Gila elegans* Bonytail chub" *Biological Resources Research Center*. <http://www.brrc.unr.edu/data/fish/gilaeleg.html> (5 May 1998).