

Scientific Name

Cyprinodon macularius

Bison code 010352

Common Name

Desert pupfish

Official status**Endemism**

Federal (USDI): endangered

State AZ: endangered

State NM: endangered

Status/threats

Habitat loss and nonnative predatory species such as Tilapia and largemouth bass have been and continue to be major threats to the species.

Distribution

Once widespread in the Gila River Basin, Arizona, in the headwaters of the San Pedro and Santa Cruz rivers down to the lower Colorado system, California and Mexico. One population in Organ Pipe National Monument, near Lukeville, Arizona is a distinct subspecies.

Habitat

As with topminnow, this cyprinodont occupies springs, marshes, and flowing streams. Also found in backwater and historically in lateral habitats of larger rivers. This diminutive species tolerates great environmental extremes of temperature, and salinity. In the Salton Sea, California the species has been documented to move relative to temperature and salinities, however, has been recorded in waters of 35 degrees C and salinities three times sea water.

Life history and ecology

A pugnacious species, short-lived (ca. 1 year) species, noted for its nature to attack other even larger fishes especially when defending territories. Feed on crustaceans and other invertebrates in bottom detritus developing pits which have been misinterpreted as nests. Capable of adapting to environmental extremes of temperature and salinity. Males become highly pugnacious and aggressive and develop brilliant coloration of blues and yellow during spring and summer breeding seasons.

Breeding

Males develop coloration and set up territories in spring and summer and defend aggressively.

Females are drab and move into male territories when ready to spawn--signaled by specific body movements. Females nip bottom, males move alongside and eggs are extruded and fertilized, then deposited on bottom. No parental care of eggs, except in course of male defending territory. Eggs hatch in a few days and young began to feed in a couple of hours.

Key Habitat Components: springs, marshes, stream margins, shallow waters, aquatic vegetation.

Breeding season

The species breeds in spring and summer (April-August)

Grazing effects

Similar to topminnow, the species would be vulnerable to grazing effects in the form of trampling and removal of vegetation and bottom materials causing reduction of oxygen and possible elevation of water temperatures.

Selected references

Minckley, W. L. 1973. Fishes of Arizona. Arizona Game and Fish Department, Phoenix. 293 pp.

Minckley, W. L., G. K. Meffe, and D. L. Soltz. 1991. Conservation and management of short-lived fishes: The Cyprinodonts, pp 247-282. In, W. L. Minckley and J. E. Deacon (eds.) Battle Against Extinction: Native fish management in the American West. Univ. of Arizona Press, Tucson.

Deacon, J. E. and W. L. Minckley 1974. Desert fishes. In, Desert Biology, Vol, pp. 385-488. In, G. W. Brown (ed.), Desert biology, Vol 2. Academic Press, New York.