ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM

Animal Abstract **Element Code:** AFCNB02140
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CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Cyprinodon eremus* Miller and Fuiman
COMMON NAME: Quitobaquito Pupfish, Sonoyta Pupfish, Desert Pupfish
SYNONYMS: *Cyprinodon macularius*, *Cyprinodon macularius eremus* Miller and Fuiman, 1987
FAMILY: Cyprinodontiformes, Cyprinodontidae

AUTHOR, PLACE OF PUBLICATION: Miller and Fuiman, 1987. Description and conservation status of *Cyprinodon macularius eremus*.

TYPE LOCALITY:

TYPE SPECIMEN:

TAXONOMIC UNIQUENESS: Distinctive from 10 other populations of *Cyprinodon macularius*.

DESCRIPTION: Per Minckley (1973), "Body thickened, chubby, or markedly compressed, laterally, in adult males. Mouth superior, highly protractile, armed with tricuspid teeth. Circuli of scales with marked, spine-like projections. Dorsal profile smoothly rounded, not markedly concave posterior to origin of dorsal fin.

Body color of females and juveniles with silvery background, with narrow, vertical, dark bars on sides, generally interrupted laterally to give the impression of a disjunct, lateral band. Fins generally colorless, with the exception of an ocellate spot in dorsal, and rarely a dark spot in anal fin. Mature, breeding male with caudal fin and posterior part of caudal peduncle yellow or orange, sometimes intense orange-red; other fins generally dark. Body iridescent light- to sky-blue, especially on dorsum of head and predorsal region."

AIDS TO IDENTIFICATION: As compared to other pupfish, those from Quitobaquito have a broader head, mouth, and body, smaller fins (pelvic, dorsal, and anal), and a shorter caudal peduncle (Miller and Fuiman 1987). The head also tends to be deeper and the jaw longer than other populations of pupfish (Miller and Fuiman 1987).

ILLUSTRATIONS:
B&W photos (Minckley 1973:189)
Color drawing (Page and Burr 1991)
Color photos (Rinne and Minckley 1991:25)

TOTAL RANGE: Restricted to Rio Sonoyta basin in Sonora and south-central Arizona (Quitobaquito Springs). Their range has been greatly reduced, with the last remaining major population at Quitobaquito.

RANGE WITHIN ARIZONA: Only in Organ Pipe Cactus National Monument at Quitobaquito Spring; also a population in a concrete tank nearby.

SPECIES BIOLOGY AND POPULATION TRENDS

BIOLOGY: Minckley (1973) adds that they can tolerate salinity levels three times that of seawater and temperatures exceeding 35ºC (95ºF).

REPRODUCTION: Eggs deposited randomly in a territory. "Breeding male has light blue body, lemon yellow to orange caudal peduncle and fin, black edge on median fins" (Page and Burr 1991).

FOOD HABITS: Omnivorous; aquatic insects, crustaceans, and plants.

HABITAT: Now restricted to small ponds and springs; formerly occurred in range of habitats similar to those of *C. macularis*. At Quitobaquito, it occurs in a large pool where it prefers shallow water; probably past occurred in spring waters or shallow, heavily vegetated marsh. Springs, marshes, slow flowing streams and river backwaters. Tolerates a wide range of water temperatures; tenacious if habitat maintenance and exotic fish eliminated.

ELEVATION: Colorado basin below sea level to greater than 1500 m (4,920 ft.) in the Upper San Pedro, Sonora, Mexico (Rinne and Minckley 1991).

PLANT COMMUNITY: Lower Colorado River Sonoran Desert scrub.

POPULATION TRENDS: Severely reduced. Population at Quitobaquito apparently fairly stable; ranges from 3000 to 8000 seasonally.

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: LE with critical habitat (USDI, FWS 1986)
STATE STATUS: WSC (AGFD, WSCA in prep)
[State Endangered AGFD, TNW 1988]
OTHER STATUS: AFS SC; IUCN E

MANAGEMENT FACTORS: **Threats:** habitat alteration; predation by and competition with nonnative fishes; possibly wind-drift of pesticides from Sonora (Mexico). **Management**

needs: protect Quitobaquito Springs and Pond habitats; establish a refugium population; monitor population health; and maintain habitats free of nonnative aquatic species.

PROTECTIVE MEASURES TAKEN: Captive, breeding populations maintained at ASU. Technical report with recommendations written in 1976. Captive populations are also maintained at Finley Tank at The Research Ranch, Arizona Sonora Desert Museum, University of Arizona and the Arizona Historical Museum.

SUGGESTED PROJECTS: Maintenance and upgrades of the pond, tank and canal systems that make up Quitobaquito Springs and adjoining pond.

LAND MANAGEMENT/OWNERSHIP: NPS - Organ Pipe Cactus National Monument..

SOURCES OF FURTHER INFORMATION

REFERENCES:

Arizona Game and Fish Department. 1988. Threatened Native Wildlife in Arizona. p. 7.

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Miller, R.R. and L.A. Fuiman. 1987. Description and conservation status of *Cyprinodon macularius eremus*, a new subspecies of pupfish from Organ Pipe Cactus National Monument, Arizona. Copeia 1987(3):593-609.

Minckley, W.L. 1973. Fishes of Arizona. Arizona Game and Fish Department, Phoenix. pp. 186-192.

Page, L.M. and B.M. Burr. 1991. A field guide to freshwater fishes: North America, north of Mexico. Houghton Mifflin Co., Boston. p. 228.

Rinne, J.L. and W.L. Minckley. 1991. Native fishes of arid lands: a dwindling resource of the desert southwest. U.S. Department of Agriculture, Forest Service, General Technical Report RM-206. Rocky Mountain Forest and Range Experiment Station, Fort Collins, Colorado. p. 25.

Schoenherr, A.A. 1988. A review of the life history and status of the desert pupfish, *Cyprinodon macularius*. Southern California Academy of Sciences Bulletin 87(3):104-134.

USDI, Fish and Wildlife Service. 1986. Endangered and threatened wildlife and plants; determination of endangered status and critical habitat for the desert pupfish. Federal Register 51(61):10842-10850.

MAJOR KNOWLEDGEABLE INDIVIDUALS:

ADDITIONAL INFORMATION:

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