

**ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM**

Animal Abstract

Element Code: AFCJC02071

Data Sensitivity: Yes

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Catostomus discobolus yarrowi*

COMMON NAME: Zuni Bluehead Sucker, Zuni Mountain Sucker, Bluehead, Mountain Sucker

SYNONYMS: *Catostomus discobolus jarrovii*, *Minomus jarrovii*, *Minomus delphinus*,
Pantosteus jarrovii, *Pantosteus Pantosteus yarrowi*

FAMILY: Catostomidae

AUTHOR, PLACE OF PUBLICATION: E.D. Cope, Proc. American Philosophical Society
14: 129-139. 1874.

TYPE LOCALITY: Zuni River, Zuni Pueblo, New Mexico, 1873 (Cope 1874).

TYPE SPECIMEN:

TAXONOMIC UNIQUENESS: Twenty three species in genus *Catostomus*, all found in North America. Six species occur in Arizona. Two subspecies of *C. discobolus* have been discussed, *C.d. discobolus* and *C.d. yarrowi*, the latter being the Zuni population (Smith et al. 1983, Crabtree and Buth 1987). Sublette et al. (1990) support the use of the original spelling of the subspecific epithet as *jarrovii*. However, recent literature (Eschmeyer et al. 1998, Propst et al. 2001) applies *yarrowi* as the appropriate spelling. The subgenus *Pantosteus* may also be employed.

DESCRIPTION: Generally slender fusiform body with a subterminal mouth. Most individuals do not exceed 200 mm (7.87 in), but a few may attain 250 mm (Hanson, 1980, Propst and Hobbs, 1996). Mouth has fleshy lips and protuberances, particularly on the lower lips. The lips are notched laterally and the medial separation of the lower lip extends nearly to its anterior margin. The posterior margin of the lower lip extends back at an acute angle to the ventral longitudinal median. The lower jaw has a well-developed cartilaginous mandibular ridge that parallels the curvature of the lower lip (Sublette et al., 1990). The caudal peduncle is comparatively thick (ca. 9% of standard length) and the dorsal fin usually has fewer than 10 principal rays (Smith, 1966). There are 42 or fewer post-Weberian vertebrae and 25 or more gill-rakers in the first row on the first pharyngeal arch (Smith et al., 1983). Typically they have fewer than 100 scales in the lateral line (Smith et al., 1983). Young *C.d. yarrowi* are mottled dark gray-green dorsally and cream-white ventrally. Adults are slate-gray, almost black dorsally and cream-white ventrally. Males, in addition to coarse tubercles on the anal fin and ventral lobe of the caudal fin, develop a distinctive coloration during spawning season; dorsally they are intense black with a bright red lateral band and a white belly (Propst and Hobbs, 1996).

AIDS TO IDENTIFICATION: Cartilaginous scraper in lower jaw. Lips deeply notched at corners. Bluish head in breeding males.

ILLUSTRATIONS:

Line drawing (Cope, 1874)

Color phot (USDI, FWS 2020)

TOTAL RANGE: Endemic to the headwaters of the Little Colorado River in east-central Arizona and west-central New Mexico (especially the Zuni River system) (USDI, FWS 2014).

RANGE WITHIN ARIZONA: In Arizona, Zuni Bluehead Suckers are found in the Kinlichee Creek watershed in Apache County (USDI, FWS 2014).

SPECIES BIOLOGY AND POPULATION TRENDS

BIOLOGY: *C.d. yarrowi* live about 4-5 years, maturing around 2 years of age and about 100mm TL. Historically associated with roundtail chub (*Gila robusta*) and speckled dace (*Rhinichthys osculus*) (Sublette et al. 1990). It has been suggested that Zuni Bluehead Sucker move very little during their life cycle, similar to activity patterns reported for other *Catostomus* species (Emery 1973, Pearson and Healey 2003, Carman 2004).

REPRODUCTION: They spawn in early April through early June when water temperature reach 6-15°C. Both sexes mature at about 100mm TL but females are usually larger than males. There is evidence of a bi-modal spawning season. Most females produce 200-300 eggs, but larger females may produce more than 450 (Propst 1999, Propst et al. 2001). Females select spawning sites over loosely consolidated gravel substrates (USDI, FWS 2016).

FOOD HABITS: Benthic Forager. Feed primarily on algae, but will also feed on insects and other material scraped from rocks, rubble, and substrate (Sublette et al 1990).

HABITAT: *C.d. yarrowi* occur in stream reaches with perennial water with low turbidity and temperatures in the range of 2.0 to 23.0 °C (35.6 to 73.4 °F) and hard substrates (Carman 2008, USDI, FWS 2016). Zuni Bluehead Sucker select for shaded pools and pool-run habitats with coarse substrates, but have been found to occur in unshaded to abundantly shaded habitats and substrate ranging from silt and pebbles to bedrock (Propst and Hobbes 1996, USDI FWS 2016). Usually found in water velocities less than 0.1 meter/sec (0.3 ft/sec) and in depths ranging from 1-2 m (3.3 to 6.6 ft) in pools to 30-50 cm (12-20 in) in pool-runs. Pools often edged by emergent aquatic vascular plants (e.g. willows, cattail). Zuni Bluehead Sucker are rare or absent in reaches of sand or silt dominated substrate (Carman 2004). All Bluehead Sucker require clean gravel substrate with minimal silt for spawning, as silt covers and suffocated eggs (Maddux and Kepner 1988). Fry and young fish prefer quiet, shallow areas like backwaters or near the shore line until strong enough to handle current (Childs et al. 1998). Several surveys and reports have

provided evidence that Zuni Bluehead Sucker are low or absent in the presence of piscivorous nonnative fishes (Hanson 1980, Propst and Hobbes 1996, Propst et al. 2001, Carman 2008).

ELEVATION: For the species, elevation ranges between 2,000 – 6,760 ft (610 – 2060 m).

PLANT COMMUNITY: Aquatic. Pools often edged with emergent aquatic vascular plants such as willows and cattails.

POPULATION TRENDS: The range-wide distribution has been reduced by over 90 percent in New Mexico. The extent of range reduction in Arizona is uncertain (USDI, FWS 2014). Surveys of Arizona populations from 2015 through 2018 suggest populations are in stable condition with evidence of reproduction and recruitment in Black Soil Springs, Kinlichee Creek, and Scattered Willow Wash. However, some sites in Kinlichee Creek have only yielded adult Zuni Bluehead Sucker, which may indicate a lack of successful spawning (NNDFW 2019).

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: LE (USDI, FWS 2016) with Critical Habitat (only in New Mexico)
 [LE (USDI, FWS 2014) with Proposed Critical Habitat]
 [C (USDI, FWS 2001)]
 [C (USDI, FWS 2002, 2004-2011)]
 [None USDI, FWS 1996]
 [C2 USDI, FWS 1991, 1994]

STATE STATUS: 1 (AZGFD, AWCS 2022)
 [1A (AGFD SWAP 2012)]
 [WSC (as *C. discobolus* ssp.) (AGFD, WSCA 1996 in prep)]
 [Candidate (as *C. discobolus* ssp.) (AGFD, TNW 1988)]

OTHER STATUS: Forest Service Sensitive (USDA, FS Region 3 1999, 2007, 2013)
 [Forest Service Sensitive at full species level (USDA, FS Region 3 1988)]
 Bureau of Land management Sensitive – full sp. (USDI, BLM AZ 2010, 2017)
 Group 4 full species (NNDFW, NESL 2001, 2008)

MANAGEMENT FACTORS: Habitat loss due to stream drying is the primary reason for imperilment of this subspecies (USDI, FWS 2014). Habitat fragmentation and population

isolation increases the taxon's vulnerability to stochastic events. Habitat loss and degradation from sediment deposition related to wildfires, dewatering, impoundments, housing development, and nonnative predators, climate change impacts including reduced water availability and higher water temperatures continue to be a threat. The species' range has been significantly reduced, and the remaining habitat and populations are threatened by a variety of factors acting in combination to reduce the overall viability of the species. The risk of extinction is high because the remaining populations are small, isolated, and have limited potential for recolonization. This species is extremely vulnerable to environmental changes and cannot relocate without intervention by conservationists. Conservation potential for the species is limited by lack of access to populations on private and tribal lands (USDI, FWS 2020).

PROTECTIVE MEASURES TAKEN: In 2006 a Statewide Conservation Agreement was completed and signed by nine natural resource management entities in 2007: U.S. Fish and Wildlife Service, Arizona Game and Fish Department, U.S. Bureau of Reclamation, the Hualapai Tribe, Salt River Project, U.S. Bureau of Land Management, Arizona State Land Department, Arizona Department of Water Resources, The Nature Conservancy, and the U.S. Forest Service (AGFD 2006). In 2016, Critical Habitat (only in New Mexico, none in Arizona) was established. The Navajo Nation has developed a Fisheries Management Plan, which includes identification and protection of Zuni Bluehead Sucker populations and habitats as well as expansion of the subspecies' distribution as an objective (USDI, FWS 2016). A captive-reared population has been established at the Albuquerque BioPark (USDI, FWS 2020).

SUGGESTED PROJECTS: Suggested projects include; development of a recovery plan, continuation of nonnative removal efforts in occupied areas, consideration augmentation of wild populations with captive-reared fish, continuation of established partnerships and cooperative efforts to annually monitor populations and habitats, assessment of other potential areas within the historical range of the subspecies to extend or enhance the taxon's current range, and creation of alternative captive refugia (USDI, FWS 2020).

LAND MANAGEMENT/OWNERSHIP: In Arizona, extant populations are on the Navajo Nation.

SOURCES OF FURTHER INFORMATION

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ADDITIONAL INFORMATION:

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