ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM

Animal Abstract **Element Code:** AFCJC02110
Data Sensitivity: No

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Catostomus latipinnis*
COMMON NAME: Flannelmouth Sucker
SYNONYMS: *Acomus latipinnis*, *Catostomus latipinnis discobolus*, *Catostomus* (*Catostomus*) *latipinnis*
FAMILY: Catostomidae

AUTHOR, PLACE OF PUBLICATION: Baird, S.F., and C. Girard. 1854. Proceedings of the Academy of Natural Sciences, Philadelphia (1852-53) 6:387-390.

TYPE LOCALITY: San Pedro River, Cochise Co., Arizona

TYPE SPECIMEN: Collected by J.H. Clark

TAXONOMIC UNIQUENESS: 21 species in genus (including subgenus *Pantosteus*), 21 species in North America, 5 species in Arizona (including 2 *Pantosteus*), 1 undescribed Arizona form (possibly synonymous with *C. latipinnis*).

DESCRIPTION: Adults can exceed 0.5 m (19.7 in.) in length and 1.5 kg (3.3 lbs.). "Body elongated, thicker anteriorly, thin posteriorly. Head relatively short, but thick. Lower lips markedly enlarged, with large, fleshy lobes. Fins large. Dorsal fin falcate, with 10 to 14 (usually 12 or more) fin-rays. Scales relatively small, sometimes embedded on anterior parts of body, 90 to 116 in lateral line.

Coloration typically light gray or tan dorsally, lighter beneath. Dorsolateral scales sometimes markedly outlined with melanophores. No bright breeding colors have been noted in Arizona populations, but are known in fish from the upper Colorado basin. Fins rarely with dark pigmentation, typically transparent. Young often silvery over-all" (Minckley 1973).

AIDS TO IDENTIFICATION: "Diagnostic characteristics of *C. latipinnis* include elongate, posteriorly fimbriate lobes of the lower lip; high lateral line scale count (89-116); and falcate distal margin of the dorsal fin" (Sublette et al. 1990).

ILLUSTRATIONS:
B&W photo (Minckley 1973:156)
Line drawing (Page and Burr 1991:170)
Color drawing (Page and Burr 1991:170
Color photo (Rinne and Minckley 1991:30)
Line drawings (Sublette et al. 1990:202, 203)
B&W photos (Sublette et al. 1990:203)

TOTAL RANGE: Historically ranged in the Colorado River Basin in moderate to large rivers, including parts of Wyoming, Utah, Colorado, New Mexico, Nevada, California, and Arizona. The species has been extirpated from the Gila River Basin in Arizona.

RANGE WITHIN ARIZONA: The Colorado River and its larger tributaries in Glen and Grand canyons, to include the Virgin River. Minckley's (1973) *Catostomus* sp. (Little Colorado Sucker) occurs in the upper portions of the Little Colorado River drainage above Lyman Reservoir. Introduced by the Arizona Game and Fish Department below Davis Dam in the mid 1970's, from stock taken at the Paria River (Riley 1995). The population still persists today based off of samples taken the last few years (1993-1995), and has recently been taken during sampling on Lake Havasu (Riley 1995).

SPECIES BIOLOGY AND POPULATION TRENDS

BIOLOGY:

REPRODUCTION: Reproduction typically occurs in March-July at water temperatures ranging from 6°C to greater than 20°C (McAda 1977, Weiss 1993, Angradi et al. 1992, Clarkson and Robinson 1993, AGFD data). Larvae have also been captured from the Little Colorado River in Grand Canyon in February 1994 during a period of base flow (AGFD data). In Glen Canyon, Arizona, flannelmouth suckers "run" upstream into the Paria River from winter residence in the Colorado and Little Colorado rivers to spawn, and immediately leave to return to mainstem or other tributary locations (Weiss 1993). Fins of both sexes often become orange during spawning, and the anal and lower lobe of the caudal fin in males become tuberculate (Sublette et al. 1990). Flannelmouth suckers in the Paria River spawn in shallow water over sand/gravel substrates in current velocities between 0.3 and 0.6 m/s (Weiss 1993). Based on regression equations, fecundity ranges from 4,000 to 40,000 ova in fish ranging from 450-500 mm total length (McAda and Wydoski 1985). In the upper Colorado River, flannelmouth suckers account for approximately 30% of the total fish drift (Valdez et al. 1985); in the Little Colorado River, flannelmouth drift is rarer (Clarkson et al. 1994). Catches of juvenile flannelmouth in Glen Canyon (Maddux et al. 1987, Weiss 1993) and the Little Colorado River (Angradi et al. 1992, Clarkson and Robinson 1993) are relatively rare, but are common in the lower reaches of the Colorado River in Grand Canyon (Angradi et al. 1992, Persons and Kinsolving 1993, Valdez and Hugentobler 1993). Flooding events during spawning negatively affect reproductive success (Clarkson and Robinson 1993, Weiss 1993).

FOOD HABITS: Larvae examined for gut contents from the Little Colorado River (Clarkson and Robinson 1993) and other tributary and mainstem areas in Grand Canyon (Maddux et al. 1987) contained Chironomidae larvae, unidentified organics, planktonic cladocerans and copepods, and inorganic material. Juvenile guts from the Little Colorado River contained similar materials, but also ostracods and vascular plants (Clarkson and Robinson 1993). In the Colorado River in Grand Canyon, flannelmouth of unreported size consumed primarily *Gammarus lacustris* and immature dipterans, with similar diets recorded

from Grand Canyon tributaries (Carothers and Minckley 1981). Flannelmouth suckers of unreported size from the Virgin River, Arizona, fed on mostly debris and detritus, followed by filamentous algae and macroinvertebrates (Gregor and Deacon 1988).

HABITAT: Primarily restricted to large and moderately large rivers, larvae inhabit shallow, slow-flowing nearshore areas (Minckley 1973, AGFD data). Rinne and Minckley (1991) state that they prefer deeper water when not feeding. In the Colorado River in Grand Canyon, subadults are found in eddies and runs over sand (Maddux et al. 1987). In the Little Colorado River, juvenile through adult flannelmouth use slow velocity, nearshore habitats with significant amounts of cover during daylight hours, and increase use of faster, more exposed midchannel habitats at night (Gorman 1994).

ELEVATION: Based on records in the Heritage Data Management System (HDMS), elevation ranges from 1,540 - 3,160 ft. (480 - 964 m) (AGFD, unpublished data accessed 2001).

PLANT COMMUNITY:

POPULATION TRENDS: Extirpated from the Gila River Basin and Colorado River below Lake Mead. Upper Basin studies have concentrated on federally endangered species, but presumably the species remains common there. Possible aging of the Glen/Grand Canyon population due to reduced recruitment, at least in the Paria River area (Weiss 1993).

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: CCA (USDI, FWS 2006)
[C2 USDI, FWS 1991, 1994]

STATE STATUS: 2 (AZGFD, AWCS 2022)
[1A (AGFD SWAP 2012)]

OTHER STATUS: Bureau of Land Management Sensitive (USDI, AZ 2005, 2008, 2010, 2017)
Not Forest Service Sensitive (USDA FS Region 3, 2013)
[Forest Service Sensitive (USDA, FS Region 3 1999, 2007)]
No NESL Status (NNDFW, NESL 2000)

MANAGEMENT FACTORS:

Threats: Alteration of hydrologic and thermal characteristics of river habitats by emplacement of hydroelectric dams; blockage of migration (Chart and Bergersen 1992) and genetic isolation of populations by emplacement of dams; predation by and competition with introduced aquatic organisms; hybridization with other *Catostomus* species.

Management needs: ameliorate effects of reservoirs and nonnative fish species in flannelmouth waters; monitor status of populations.

PROTECTIVE MEASURES TAKEN: Grand Canyon Protection Act of 1992 reduced stage fluctuation of water releases from Glen Canyon Dam. Glen Canyon Environmental Studies Phase I (1984-1987) and Phase II (1990-1995) research data used in development of Glen Canyon Dam Environmental Impact Statement and Biological Opinion. Conservation Agreement signed in 2006 in place of ESA listing. 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).

SUGGESTED PROJECTS: Continued study of effects of water temperature on ecology and life history; determine effects of fluctuating flows on movements and fate of early life stages in the Colorado River below Glen Canyon Dam; determine food web relationships in the Little Colorado and Colorado rivers using stable isotope analysis.

LAND MANAGEMENT/OWNERSHIP: BIA - Navajo Nation and Hualapai Reservation; BLM - Arizona Strip Field Office; NPS - Grand Canyon National Park and Glen Canyon National Recreation Area; Private.

SOURCES OF FURTHER INFORMATION

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ADDITIONAL INFORMATION:

Revised: 1994-07-28 (RWC)
1995-01-29 (KLY)
1997-03-04 (SMS)
2001-10-10 (SMS)
2023-01-09 (MBL)

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