## **Razorback sucker (*Xyrauchen texanus*)**

Status

Endangered (56 FR 54957; October 23, 1991) with Designated Critical Habitat (59 FR 13374; March 21, 1994).

Species Summary Table

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|  | Feeding | Breeding | Sheltering |
| Juvenile | Adult | Adult | Juvenile | Adult |
| Habitat | Warm, shallow, low-velocity water | Backwaters and slow moving areas below 6,000 feet in elevation | Rocky shoals and shorelines in reservoirs. Bars of cobble, gravel, and sand in rivers. | Deep water with dense aquatic vegetation, debris, and rock cavities | Backwaters and slow moving areas below 6,000 feet in elevation |
| Prey | Plankton and benthos | Insects, plankton, algae, and detritus | Insects, plankton, algae, and detritus | N/A | N/A |
| Perches | N/A | N/A | N/A | N/A | N/A |
| Cover | N/A | N/A | N/A | dense aquatic vegetation, debris, and rock cavities | N/A |
| Temperature | 22.9-24.8oC | 22.9-24.8oC | ~20oC | 22.9-24.8oC | 22.9-24.8oC |
| Lighting | Nocturnal feeding | N/A | N/A | Daytime sheltering | N/A |
| Moisture | N/A | N/A | N/A | N/A | N/A |
| Sound | N/A | N/A | N/A | N/A | N/A |
| Water | Perennial rivers and reservoirs | Perennial rivers and reservoirs | Perennial rivers and reservoirs | Perennial rivers and reservoirs | Perennial rivers and reservoirs |
| Dispersal | N/A | N/A | 11-38 km | N/A | N/A |
| Seasonal Activity | Hatch from April-June, 6-7 days after spawning. | Habitat preferences change depending on the season, see suitable habitat section. | Spawn from April-June | N/A | Habitat preferences change depending on the season, see suitable habitat section. |

Life History

*Species Description and Ecology*

The razorback sucker is a medium-sized fish (up to 40 inches in length) that is oliveaceous to brownish black above, with brownish or pinkish to reddish stripes on the sides and lighter ventrally. The head and body are elongated and the fish has a sharp-edged keel behind the head that gives this species its name (AGFD 2002).

All life stages of razorback sucker consume insects, zooplankton, phytoplankton, algae, and detritus; however, the composition of these food items in their diet varies by age and habitat. Within several days of hatching, razorback sucker larvae begin to feed on plankton. As their terminal mouth migrates to a sub-terminal position, larvae begin feeding on benthos as well (USFWS 2002).

*Reproduction*

Razorback suckers are broadcast spawners that scatter adhesive eggs which incubate in interstitial spaces. They breed in the springtime (from April-June) with spawning occurring in reservoirs over rocky shoals and shorelines. Spawning in rivers takes place during spring runoff at widely ranging flows and water temperatures over bars of cobble, gravel, and sand substrates. Optimal water temperatures for hatching success is around 20o Celsius. Eggs hatch between 6-7 days after being laid. Larvae begin swimming up 12-13 days after hatching, and then develop the ability to swim down into deeper water after 27 days old (USFWS 2002).

Young razorback suckers require nursery environments with quiet, warm, shallow, low-velocity habitats such as tributary mouths, backwaters, or inundated floodplain habitats downstream of spawning bars in rivers, and coves or shorelines in reservoirs. After a few weeks, they retreat into deeper water utilizing dense aquatic vegetation, debris, and rock cavities to hide during the day and venture into main channels to feed during the night (USFWS 2002).

*Suitable Habitat*

The razorback sucker is generally found at elevations below 6,000 feet in backwaters or slow-moving areas with water temperatures ranging from 22.9-24.8o Celsius. Razorback sucker habitat preferences change depending on the season. Deep runs, eddies, backwaters and flooded off-channels are preferred in the spring, whereas runs and pools in shallow water associated with submerged sandbars are preferred in summer, and low-velocity runs, pools and eddies are most commonly used in winter (USFWS 2002).

The home range of razorback suckers is comprised of adult, spawning, and nursery habitats from which they move between throughout the year. Home ranges can vary based on reservoir or river habitats and range from 11 to 38 kilometers. When suckers are within their adult habitats they are thought to be relatively sedentary and do not travel very far to feed.

Threats

Threats to the species include stream flow regulation, habitat modification, competition with and predation by nonnative fish species, and pesticides and pollutants (USFWS 2002).

Range and Survey History

State and federal wildlife management agencies have been rearing the razorback sucker since the 1970's (O'Neill et al. 2011). These programs continue to sustain razorback sucker populations and the species is known to occur in areas where they are released. Release locations include the Green River, upper Colorado River, and San Juan River sub-basins; lower Colorado River between Lake Havasu and Davis Dam; reservoirs of Lakes Mead and Mohave; in small tributaries of the Gila River subbasin (Verde River, Salt River, and Fossil Creek); and in local areas under intensive management such as Cibola High Levee Pond, Achii Hanyo Native Fish Facility, and Parker Strip (USFWS 2002, USFWS 2012). Designated critical habitat is located along sections of the Colorado, Gila, Salt, and Verde Rivers (USFWS 1994).

Although this species is thought to only occur within areas where they've been reintroduced, it was reported in 2014 by the Department of the Interior that razorback suckers were spawning within the lower Colorado River within Grand Canyon National Park after missing from this habitat for more than 20 years. Razorback suckers were not manually released into this habitat which signifies that this species does have the ability to repopulate suitable habitat apart from reintroduction sites.

Include information in this section to establish an environmental baseline (i.e. hatchery release data, local status, etc) for razorback suckers within your projects vicinity. The following references and resources may assist in establishing an environmental baseline. Always obtain permission from the ADOT biologist prior to contacting outside agencies about an ADOT project.

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Notes: 1Consultants are NOT to discuss potential effect findings with outside agencies.

2Red text is to be removed prior to placing this evaluation into a Biological Evaluation.

References

Arizona Game and Fish Department (AGFD). 2002. *Xyrauchen texanus*. Unpublished abstract compiled and edited by the Heritage Data Management System, Arizona Game and Fish Department, Phoenix, AZ. 5 pp.

O'Neill, Matthew W; Ward, David L.; and Stewart, William T. 2011. "Growth of Razorback Sucker (*Xyrauchen texanus*) at Bubbling Ponds Fish Hatchery." Lower Colorado River Multi-Species Conservation Program.

U.S. Fish and Wildlife Service (USFWS). 1994. “Endangered and Threatened Wildlife and Plants; Determination of Critical Habitat for the Colorado River Endangered Fishes: Razorback Sucker, Colorado Squawfish, Humpback Chub, and Bonytail Chub.” *Federal Register* 59(54):13374–13400.

 . 2002. Razorback sucker (Xyrauchen texanus) Recovery Goals: amendment and supplement to the Razorback Sucker Recovery Plan. U.S. Fish and Wildlife Service, Mountain-Prairie Region (6), Denver, Colorado.

 . 2012. Razorback sucker (Xyrauchen texanus) 5-Year Review: Summary and Evaluation. U.S. Fish and Wildlife Service, Upper Colorado River Endangered Fish Recovery Program, Denver, Colorado.

U.S. Department of the Interior (DOI). 2014. News Release: Once Thought Locally Extinct, Endangered Razorback Suckers Discovered Spawning in Grand Canyon National Park.