

Scientific Name: *Ictalurus pricei*

Common Name: Yaqui catfish

BISON No.: 010109

Legal Status:

- | | | |
|---------------------------------------|------------------------------|------------------------------|
| ➤ Arizona, Species of Special Concern | ➤ ESA, Proposed Threatened | ➤ New Mexico-WCA, Threatened |
| ➤ ESA, Endangered | ➤ ESA, Threatened | ➤ USFS-Region 3, Sensitive |
| ➤ ESA, Proposed Endangered | ➤ New Mexico-WCA, Endangered | ➤ None |

Distribution:

- | | |
|---|---------------------------|
| ➤ Endemic to Arizona | ➤ Southern Limit of Range |
| ➤ Endemic to Arizona and New Mexico | ➤ Western Limit of Range |
| ➤ Endemic to New Mexico | ➤ Eastern Limit of Range |
| ➤ Not Restricted to Arizona or New Mexico | ➤ Very Local |
| ➤ Northern Limit of Range | |

Major River Drainages:

- | | |
|------------------------|-----------------------------|
| ➤ Dry Cimmaron River | ➤ Rio Yaqui Basin |
| ➤ Canadian River | ➤ Wilcox Playa |
| ➤ Southern High Plains | ➤ Rio Magdalena Basin |
| ➤ Pecos River | ➤ Rio Sonoita Basin |
| ➤ Estancia Basin | ➤ Little Colorado River |
| ➤ Tularosa Basin | ➤ Mainstream Colorado River |
| ➤ Salt Basin | ➤ Virgin River Basin |
| ➤ Rio Grande | ➤ Hualapai Lake |
| ➤ Rio Mimbres | ➤ Bill Williams Basin |
| ➤ Zuni River | |
| ➤ Gila River | |

Status/Trends/Threats (narrative):

Federal: Threatened. State AZ: Species of special concern.

Extinction of the Yaqui catfish in U.S. may be attributed directly to modifications in habitat and/or drought and perhaps over-use of water supplies by domestic livestock (McNatt 1974). Extensive pumpage of the San Bernadino Creek valley, both in the U.S. and in Mexico, in addition to capping of some artesian wells which formally flowed into ponds of natural cienegas, has, and is, destroying considerable surface water and hence the indigenous fish fauna (McNatt 1974). Habitat degradation and destruction caused by water diversion, overgrazing and subsequent erosion, aquifer pumping and introduction of exotics fishes, has resulted in extirpation (Abarca et. al. 1995). The Yaqui catfish, *Ictalurus pricei*, had become threatened through hybridization with introduced nonnative channel catfish, *Ictalurus punctatus*, among other reasons. Yaqui catfish recovery efforts will be confounded due to variable conditions of

introgression, habitat deterioration, and barriers to channel catfish immigration (Minckley 1991, Kelsch and Jensen 1997, Morizot et. al. 1997).

Distribution (narrative):

Found in the Rio Yaqui and Rio Casas Grandes drainages in northwestern Mexico and in extreme southeastern Arizona (Fishbase 2002). The only known specimens of Yaqui catfish definitely from the US are from an introduced population in the Santa Cruz basin (Miller and Lowe 1967). The Yaqui catfish is found in moderate to large streams from the delta to highlands in Rio Yaqui drainage, Mexico, and (formerly) probably in extreme southeast Arizona (Lee et. al. 1981). The Yaqui catfish is found in the lowermost Rio Yaqui (Minckley 1991). Found in the Rio Bavispe sub-basin since its northernmost origin is located in Cochise County, Arizona and Hidalgo County, NM (Abarca et. al. 1997).

Key Distribution/Abundance/Management Areas:

<p>Panel key distribution/abundance/management areas:</p>
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Breeding (narrative):

Spawning of Yaqui catfish is similar to channel catfish, with the male defending eggs in a depression or hole in the bank and protecting his newly hatched young for a period of time (Minckley 1991). Eggs eyed in four days and hatched in seven (Ulibarri and Jensen 1997).

Habitat (narrative):

The Yaqui catfish occurs in quiet water over sandy-rocky bottom in small to medium rivers (Fishbase 2002). The Yaqui catfish is found in canyon-bound reaches of the Rio Yaqui (Minckley 1991). Yaqui catfish live in relatively deep water during the day, only to move onto riffles and runs at night to feed (Minckley 1991). Young Yaqui catfish live in shallower water than adults, often on riffles among cobbles and boulders (Minckley 1991). Most common in larger rivers in areas of medium to slow currents over sand/rock bottom (Hendrickson et. al. 1979 as cited in Lee et. al. 1981). The headwaters of the Yaqui River in southeastern Arizona once provided historic habitat for eight native species of fishes (Abarca et. al. 1995).

Breeding Season:

- January
- February
- March
- April
- May
- June
- July
- August
- September
- October
- November
- December

Panel breeding season comments:

Aquatic Habitats:**Large Scale:**

- Rivers
- Streams
- Springs
- Spring runs
- Lakes
- Ponds
- Sinkholes
- Cienegas
- Unknown
- Variable

Small Scale:

- Runs
- Riffles
- Pools
- Open Water
- Shorelines

Panel comments on aquatic habitats:

Important Habitat Features (Water characteristics):**Current**

- Fast (> 75 cm/sec)
- Intermediate (10-75 cm/sec)
- Slow (< 10 cm/sec)
- None
- Unknown
- Variable

Gradient

- High gradient (>1%)
- Intermediate Gradient (0.25-1%)
- Low Gradient (<0.25%)
- None
- Unknown
- Variable

Water Depth

- Very Deep (> 1 m)
- Deep (0.25-1 m)
- Intermediate (0.1-0.25 m)
- Shallow (< 0.1 m)
- Unknown
- Variable

Panel comments on water characteristics:

Important Habitat Features (Water Chemistry)

Temperature (general)

- Cold Water (4-15°C)
- Cool Water (10-21°C)
- Warm Water (15-27°C)
- Unknown
- Variable

Turbidity

- High
- Intermediate
- Low
- Unknown
- Variable

Conductivity

- Very High (> 2000 $\mu\text{S}/\text{cm}$)
- High (750-2000 $\mu\text{S}/\text{cm}$)
- Intermediate (250-750 $\mu\text{S}/\text{cm}$)
- Low (< 250 $\mu\text{S}/\text{cm}$)
- Unknown
- Variable

Panel comments on water chemistry:

Important Habitat Features (Structural elements):

Substrate

- Bedrock
- Silt/Clay
- Detritus
- Sand
- Gravel
- Cobble
- Boulders
- Unknown
- Variable

Cover

- Rocks, boulders
- Undercut banks
- Woody debris
- Aquatic vegetation
- Rootwads
- Not important
- Overhanging vegetation
- Unknown
- Variable

Panel comments on structural elements:

Diet (narrative):

The few stomachs that have been examined contained aquatic invertebrates, other fishes, and organic debris (Minckley 1991).

Diet category (list):

- Planktivore
- Herbivore
- Insectivore
- Piscivore (Fish)
- Omnivore
- Detritivore

Grazing Effects (narrative):

No specific information on impact of grazing on Yaqui catfish. Cattle grazing probably do not impact adult Yaqui catfish since they inhabit relatively deep water during the day, however, grazing may impact young Yaqui catfish since they inhabit shallower water than adults. Grazing may have a direct negative impact upon spawning Yaqui catfish since they sometimes construct nests in and along stream banks. Trampling of stream margins by cattle could decimate clutches of Yaqui catfish eggs.

Panel limiting habitat component relative to grazing and comments:
Panel assessment: Is this species a priority for selecting a grazing strategy? Throughout the species' distribution in New Mexico and Arizona YES NO UNKNOWN In key management area(s) YES NO UNKNOWN

Principle Mechanisms Through Which Grazing Impacts This Species (list):

May be Revised

- | | | |
|--|-------------------------------------|-------------------------------------|
| ➤ Alteration of bank structures | ➤ Altered bank vegetation structure | ➤ Increased turbidity |
| ➤ Alteration of substrate | ➤ Change in food availability | ➤ Other biotic factors |
| ➤ Alteration of water regimes | ➤ Change in water temperature | ➤ Parasites or pathogens |
| ➤ Altered stream channel characteristics | ➤ Change in water quality | ➤ Population genetic structure loss |
| ➤ Altered aquatic vegetation composition | ➤ Habitat fragmentation | ➤ Range improvements |
| | | ➤ Trampling, scratching |
| | | ➤ Unknown |

Panel causal mechanisms comments:
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Authors

- **Draft:** Magaña, H.A.
- **GP 2001:**
- **GP 2002:**
- **Revision:**

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