

Scientific Name: *Macrhybopsis aestivalis tetranemus*

Common Name: Arkansas River speckled chub

BISON No.: 010151

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: FWS Species of concern, BLM sensitive, State NM: Threatened.

The Arkansas River speckled chub is extant only in the South Canadian River between reservoirs in New Mexico and Texas, the South Fork Ninnescah River in Kingman County, Kansas and the Arkansas River in Sumner County, Kansas (Luttrell et al 1999). The endemic Arkansas River speckled chub has been extirpated from about 90% of its historic range, and now persists only in two disjunct areas: the Ninnescah River and an associated portion of the Arkansas River mainstem in Kansas, and the southern Canadian River between Ute Reservoir in New Mexico and Meredith Reservoir in the Texas Panhandle (Luttrell et al 1999).

The Arkansas River populations have greatly declined in abundance and distribution (Luttrell et al 1999). The period of extirpation (1940's through the 1970's) approximated the period of reservoir construction in New Mexico (Luttrell et al 1999).

The Arkansas River speckled chub possibly hybridizes with *Macrhybopsis hyostoma* (Eisenhour 1999).

Declines of native fishes in the southern plains streams have been linked to reservoirs and groundwater removal for irrigation resulting in loss of habitat by inundation of streams and dewatering as a result of impoundment and diversion of water out of the streambed (Luttrell et al 1999). Reservoirs are barriers to dispersal and contribute to losses of local populations by blocking recolonization (Luttrell et al 1999).

Distribution (narrative):

The Arkansas River speckled chub is found in the middle and upper portions of the Arkansas River basin in Colorado, Kansas, New Mexico, Oklahoma, and Texas (Eisenhour 1999). The historic range includes the Rio San Fernando drainage in Mexico eastward across the Gulf slope to the Choctawhatchee River in Florida, and northward to Nebraska, Minnesota, and Ohio in the Mississippi River basin (Eisenhour 1999).

Key Distribution/Abundance/Management Areas:

<p>Panel key distribution/abundance/management areas:</p>

Breeding (narrative):

No specific information, however, may be similar to the speckled chub (*Macrhybopsis aestivalis aestivalis*).

Habitat (narrative):

No specific information, however, may be similar to the speckled chub (*Macrhybopsis aestivalis aestivalis*).

Seasonal Activity (narrative):

No specific information, however, may be similar to the speckled chub (*Macrhybopsis aestivalis aestivalis*).

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):

No specific information, however, may be similar to the speckled chub (*Macrhybopsis aestivalis aestivalis*).

Diet category (list):

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

Grazing Effects (narrative):

No specific information.

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:

Authors

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

Bibliography:

Eisenhour, D.J. 1999. Systematics of *Macrhybopsis tetranemus* (Cypriniformes: Cyprinidae).
Copeia 4: 969-980.

Luttrell, G.R., Echelle, A.A., Fisher, W.L., and Eisenhour, D.J. 1999. Declining status of two species of the *Macrhybopsis aestivalis* complex (Teleostei: Cyprinidae) in the Arkansas River Basin and related effects of reservoirs as barriers to dispersal. Copeia 4: 981-989.