

**Scientific Name:** *Dorosoma cepedianum*

**Common Name:** Gizzard shad

**BISON No.:** 010390

**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):**

No federal or state listing for status.  
No information regarding trends or threats.

**Distribution (narrative):**

The gizzard shad is found in North America and Gulf of Mexico drainage, southeast South Dakota and central Minnesota, Great Lakes drainage; southernmost New York southward to the Mississippi system and to Gulf southward to Rio Panuco, Mexico (Sublette et al 1990, Page and Burr 1991). The gizzard shad is native to the Rio Grande, Pecos and Canadian river drainages, occurring south of the 35th parallel in the Rio Grande and Pecos drainages along with the Canadian River drainage within Quay and San Miguel counties (Sublette et al 1990).

## Key Distribution/Abundance/Management Areas:

Panel key distribution/abundance/management areas:

### Habitat (narrative):

Gizzard shad occur mainly in large rivers, reservoirs, lakes, swamps, temporary floodwater pools, etc., but adults are also found in brackish or saline water of estuaries or bays, preferring quieter open waters (Page and Burr 1991). Juvenile gizzard shad are found in quiet surface waters of rivers, lakes, and reservoirs; adults inhabit the deeper water on or near the bottom (Sublette et al 1990). Gizzard shad are common in the reservoirs, main rivers, and adjacent bodies of water in the lower Rio Grande and Pecos valleys, and some also occur in Conchas Reservoir (Koster 1957).

### 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):**

Adult gizzard shad are primarily bottom filter-feeding detritivores (Baker and Schmitz 1971), ingesting large quantities of material from the aufwuchs assemblage, principally from littoral areas (Sublette et al 1990). The food of the gizzard shad consists largely of algae, plankton, and small bottom organisms, is separated from much of the silt by sieve like arrangement of the gill rakers (Koster 1957). Juveniles are non visual planktivores, taking Protozoa, Copepoda, Cladocera, Chlorophyta, and Chrysophyta (Sublette et al 1990).

**Diet category (list):**

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

**Grazing Effects (narrative):**

With increased turbidity, larval gizzard shad concentrate near the surface (Sublette et al 1990) where they may be more susceptible to predation.

<b>Panel limiting habitat component relative to grazing and comments:</b>
<p><b>Panel assessment:</b> Is this species a priority for selecting a grazing strategy?  Throughout the species' distribution in New Mexico and Arizona</p> <p style="text-align: center;">YES NO UNKNOWN</p> <p>In key management area(s)</p> <p style="text-align: center;">YES NO UNKNOWN</p>

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

*\*\*May be Revised\*\**

- |   |   |  |
|---|---|--|
| <ul style="list-style-type: none"> <li>➤ Alteration of bank structures</li> <li>➤ Alteration of substrate</li> <li>➤ Alteration of water regimes</li> <li>➤ Altered stream channel characteristics</li> <li>➤ Altered aquatic vegetation composition</li> </ul> | <ul style="list-style-type: none"> <li>➤ Altered bank vegetation structure</li> <li>➤ Change in food availability</li> <li>➤ Change in water temperature</li> <li>➤ Change in water quality</li> <li>➤ Habitat fragmentation</li> </ul> | <ul style="list-style-type: none"> <li>➤ Increased turbidity</li> <li>➤ Other biotic factors</li> <li>➤ Parasites or pathogens</li> <li>➤ Population genetic structure loss</li> <li>➤ Range improvements</li> <li>➤ Trampling, scratching</li> <li>➤ Unknown</li> </ul> |
|---|---|--|

<b>Panel causal mechanisms comments:</b>
--

## **Authors**

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

## **Bibliography:**

Baker, C.D. and Schmidt, E.H. 1971. Food habits of adult gizzard and threadfin shad in two Ozark reservoirs, pp 3-11. In: Hall, G.E. (ed), Reservoir fisheries and limnology. Am. Fish. Soc. Spec. Pub. No. 8.

Koster, W.J. 1957. Guide to the fishes of New Mexico. University of New Mexico Press, Albuquerque, NM.

Page, L.M. and Burr, B.M. 1991. A field guide to freshwater fishes of North America north of Mexico. The Peterson field guide series ® 42. Houghton Mifflin Company, Boston, MA.

Sublette, J. E., M. D. Hatch, and M Sublette. 1990. The Fishes of New Mexico. University of New Mexico Press. Albuquerque. 393 pp.