

Scientific Name: *Mugil cephalus*

Common Name: Striped mullet

BISON No.: 100201

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):

Heritage global: Demonstrably secure.
No information regarding trends or threats.

Distribution (narrative):

Marine and estuarine, often ascending coastal rivers for considerable distances, stopping at Fall Line (Lee et al 1981). Considered to have worldwide circumtropical distribution (Lee et al 1981), however, the striped mullet is uncommon north of Los Angeles, CA. The striped mullet ascends the Colorado River to Imperial Dam, AZ, and present in Salton Sea, CA (Lee et al. 1981). It penetrates the river upstream to Imperial Dam, Yuma County, and is often quite abundant in the mainstream and in lateral canals in that region (Minckley 1973).

A substantially larger marine fauna existed on the Rio Yaqui delta (Minckley 1991). The most upstream record for the striped mullet in the Colorado River is near Blythe, California, about 300 km from the sea (Minckley 1991). Striped mullet form a substantial part of the fish fauna in mouths of major tropical and subtropical rivers worldwide (Minckley 1991).

Key Distribution/Abundance/Management Areas:

Panel key distribution/abundance/management areas:

Breeding (narrative):

Spawning by striped mullet apparently occurs in the open sea, far offshore (Minckley 1973). Reproduction in the increasingly saline river may be indicated (Johnson & McClendon, 1970). Maturation of gonads of mullet from the lower Colorado River region occurs in autumn, and reaches its peak in mid-winter. Hendricks 1961). Mullet typically spawn in the sea, and their young move into estuaries to feed and grow (Minckley 1991). When striped mullet reach adult size (longer than 35 cm) they disappear from the freshwater, moving back to the sea to reproduce (Minckley 1991).

Habitat (narrative):

Very little is known of striped mullet habitat, however, in the Colorado River striped mullet are pelagic in larger pools, sometimes moving into currents below dams, and generally occurring in small groups (Minckley 1973).

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 striped mullet feed on plant material, detritus and associated fauna, and plankton (Fitch *in* Cato and McCullough [eds] 1976). Feeding upon organic materials found in the bottom mud of estuaries and along beaches (Minckley 1973). Minckley (1973) analyzed stomachs of striped mullet and found that they contained amorphous, fibrous bottom debris, plus a few planktonic crustaceans (Minckley 1973). Feeding mostly on detritus, finely divided organic materials that accumulate in quiet places (Minckley 1991).

Diet category (list):

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

Grazing Effects (narrative):

No information with respect to striped mullet and cattle grazing. Cattle grazing probably does not affect striped mullet since striped mullet tend to live in brackish waters.

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:

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Minckley, W. L. 1973. Fishes of Arizona. Arizona Game and Fish Department. Phoenix, Arizona. 293 pp.

Minckley, W.L. 1991. Native fishes of arid lands: A dwindling resource of the desert southwest. USDA Forest Service. General Technical Report RM-GTR-206. pp 18.