Scientific Name: A*meiurus melas*
Common Name: Black bullhead
BISON No.: 010065

Legal Status:

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

Distribution:

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

Major River Drainages:

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

Status/Trends/Threats (narrative):

State NM: Provides full protection.

Distribution (narrative):

Black bullheads are found from southern Ontario, Great Lakes and St. Lawrence River, south to the Gulf of Mexico and northern Mexico, and from Montana to Appalachians (Lee et. al. 1981). The black bullhead is native only to the Canadian drainage and possibly the Pecos. The black bullhead has been introduced all other major drainages of New Mexico except the Tularosa basin (Sublette et. al. 1990).

Key Distribution/Abundance/Management Areas:

Panel key distribution/abundance/management areas:

Breeding (narrative)**:**

Age of maturity is variable but is attained from the second to fourth summer, depending on population density (**Becker 1983**). Spawning occurs in spring and early summer at water temperatures above 20 C in shallow water over a variety of substrates **(Stuber 1982).** Black bullheads spawn in saucer-shaped cavities, or in depressions excavated by both sexes out of gravel, sand, or in secluded areas such as under logs or mats of aquatic vegetation (Minckley 1973, Sublette et. al. 1990). Both sexes are involved in caring and defending the nest site from intruders (Minckley 1973). The eggs, which are demersal and adhesive, are laid in a gelatinous mass, and incubate in approximately five to seven days and may be moved periodically by the male to ensure proper aeration (Minckley 1973, Sublette et. al. 1990). The young remain in the nest until they are about 25 mm TL after which they swim about in conspicuous, compact school (Sublette et. al. 1990). Both sexes also care for the school of newly hatched young for a period of time, protecting them from predation and "herding" them about in shallow waters (Minckley 1973). Juveniles often travel in schools but adults tend to be solitary (Sublette et. al. 1990). The black bullhead is one of the typical components in residual pools of intermittent streams **(Cross and Moss 1987).**

Habitat (narrative)**:**

The black bullhead is characteristic of ponds, pools of all sizes in streams and rivers with a soft bottom and turbid water with up to 4 cm/sec velocity, and in swampy habitats throughout range and rarely are common in clear, rocky-bottomed habitats (Minckley 1973, Lee et. al. 1981, **Stuber 1982**).

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 µS/cm)
- High (750-2000 µS/cm)
- Intermediate (250-750 µS/cm)
- Low (< 250 µS/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)**:**

Black bullheads are omnivorous, but become highly carnivorous when animal foods are abundantly available (Minckley 1973). Feeding by young black bullheads is mostly in early evenings and mornings (Minckley 1973). The juvenile black bullheads are planktivorous (Sublette et. al. 1990). When the young reach about 27 mm TL, they feed largely on crustaceans and midge larvae (**Forney 1955**). Adults are opportunistic bottom-feeders, eating chironomids, fish, crayfish, filamentous algae, and other miscellaneous organisms (**Repsys et. al. 1976, Stuber 1982**). They can tolerate high turbidities since they feed by taste (Sublette et. al. 1990).

Diet category (list):

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

Grazing Effects (narrative):

No specific information is available on grazing impacts upon black bullheads, but inferences can be made from current literature. Since black bullheads spawn in shallow water they can be affected by livestock grazing due to trampling or degradation of habitat. Although black bullheads can tolerate turbid waters excessive turbidity caused by livestock can have a negative impact on egg incubation and aeration.

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
- Alteration of substrate
- Alteration of water regimes
- Altered stream channel characteristics
- Altered aquatic vegetation composition
- Altered bank vegetation structure
- Change in food availability
- Change in water temperature
- Change in water quality
- Habitat fragmentation
- Increased turbidity
- Other biotic factors
- Parasites or pathogens
- Population genetic structure loss
- 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.

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