Scientific Name: *Lepisosteus osseus*
Common Name: Longnose gar
BISON No.: 010230

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 limited protection.

Distribution (narrative):

The longnose gar is found in eastern and central North America south from Quebec to Florida, Texas, and Mexico. Longnose gar is native to the Pecos River and the terminus of its major tributaries. The longnose gar is believed to be native to the Rio Grande of New Mexico (Cope and Yarrow 1875). There is evidence of its former existence found in archaeological sites throughout New Mexico. The longnose gar is found from southern Quebec south to Florida, west to the Great lakes region and southwest to middle Rio Grande of Mexico and middle Rio Pecos drainage of New Mexico (Suttkus 1963, Wiley in Fisher (ed.) 1978.

Key Distribution/Abundance/Management Areas:

Panel key distribution/abundance/management areas:

Breeding (narrative)**:**

Longnose gar spawn in late spring or early summer (May, June) in the shallow water of lakes or streams over vegetation, gravel bars, or bare rocks, the activity peaking when water temperatures range from 19.5-21 C (Sublette et. al. 1990). Males reach sexual maturity by age III; females mature by age VI (Netsch and Witt 1962). Incubation period is from seven to nine days, varying with the water temperature (Sublette et. al. 1990). The emerging sac-fry will attach to submerged objects by an adhesive structure on the snout and remain inactive until the yolk sac is absorbed (Echelle and Riggs 1971). Males are mature at three to four years, females at six years. Breeding may occur between March and August, depending on geographic location (Lee et. al. 1981). Spawning of longnose gar occurs in freshwater and possibly slightly brackish water. Eggs and larvae are demersal and adhesive (Fishbase 2002).

Habitat (narrative)**:**

Longnose gars are found in fresh and brackish waters of larger streams and coastal inlets throughout range and occasionally found in marine coastal waters (Lee et. al. 1981). Longnose gars are found near the surface in pelagic areas of lakes, reservoirs, and the quieter regions of rivers and streams. Young longnose gars occupy shallows whereas the larger individuals will occupy deeper waters (Sublette et. al. 1990). Longnose gars occupy sluggish pools, backwaters, and oxbows of medium to large rivers and lakes. Usually found near vegetation (Fishbase 2002).

Seasonal Activity (narrative)**:**

Longnose gars migrate up rivers during spawning season (Fishbase 2002).

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)**:**

Young longnose gars (to 50 mm TL) eat invertebrates (Lee et. al. 1981). Larger individuals are mainly piscivorous, but Suttkus (1963) reported that brackish-water individuals also eat crabs. Young longnose gars initially feed on minute crustaceans, however their diet quickly becomes piscivorous (Sublette et. al. 1990). Adults are largely piscivorous, feeding on a variety of fish species and feeding occurs mostly actively at night, typically at or near the surface (Sublette et. al. 1990).

Diet category (list):

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

Grazing Effects (narrative):

There is no specific literature on the affect of livestock grazing on longnose gar, however inferences can be made from existing literature. Since young longnose gars inhabit shallow areas of streams livestock grazing may trample these young fish. Eggs of longnose gars are adhesive and attach to submerged objects; livestock grazing in shallow waters may be detrimental to longnose gar due to trampling of these demersal 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
- 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:

Fishbase. Org. 2002. Cite Correctly.

Lee, D. S. Gilbert C. R. Hocutt C. H. Jenkins R. E. Callister D. E. and Stauffer J. R., 1981. Atlas of North American Freshwater Fishes: North Carolina, North Carolina State Museum of Natural History, 1981, c1980

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