Scientific Name: *Percina macrolepida*
Common Name: Bigscale Logperch
BISON No.: 010270

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: Threatened.
Periodic stream dewatering and modification of preferred habitat (e.g. rapidly flowing runs) likely are the primary threats to bigscale logperch in New Mexico (Propst 1999).

Distribution (narrative):

The bigscale logperch occurs only in North America: from Sabine River in Louisiana and Red River in Oklahoma to Rio Grande drainage in Texas and New Mexico in the USA and in Mexico (Fishbase 2002). The bigscale logperch is found in the Pecos River drainage including Santa Rosa and Sumner reservoirs and the intervening section of the Pecos River along with the tailwaters of Sumner Reservoir (Sublette et. al. 1990, Propst 1999). In addition, the bigscale

logperch has recently been collected in Willow Lake near Malaga, in the lower Black River, and in the Pecos River downstream of Brantley Reservoir (Sublette et. al. 1990). The bigscale logperch is rarely collected elsewhere in the Pecos River and the Black River (Propst 1999). The bigscale logperch occurs in the Red River of Texas and Oklahoma and southward and westward in the Gulf coast drainages of Texas from the Sabine River to the Rio Grande and Pecos River (Sublette et. al. 1990). The bigscale logperch continues to occupy much of its historic habitat in the Pecos River, although it is rare upstream of Sumner Lake (Sublette et. al. 1990). Bigscale logperch are less sensitive to turbid waters than logperch (**Steveson 1971**).

Key Distribution/Abundance/Management Areas:

Panel key distribution/abundance/management areas:

Breeding (narrative)**:**

The bigscale logperch spawns during the spring, usually over gravel or sand in swift, often-turbulent current, by females burrowing into the substrate to lay their eggs (Sublette et. al. 1990). Hubbs (1985) reported that in Texas, bigscale logperch has a reproductive season from late February through mid-April. In New Mexico, spawning occurs somewhat later in spring (Propst 1999). Spawning apparently occurs in cobbled, rapid-velocity runs (**Stevenson 1971**).

Habitat (narrative)**:**

The bigscale logperch occurs in gravel and sand runs and pools of small to medium rivers, and also occurs in impoundments (Fishbase 2002). The bigscale logperch also occurs in deep rivers, preferably with a strong current and rubble-gravel substrate; however, it is also found in rivers with nearly imperceptible flow and in impoundments (Sublette et. al. 1990). Bigscale logperch are most frequently found in fast flowing, non-turbulent, moderately deep water with large cobble substrate (**Stevenson 1971**). The bigscale logperch is found in the Black River only in moderate velocity runs, where the substrate is mainly irregular shaped limestone bedrock and aggregated conglomerate, which connect pools (Propst 1999). In lentic environments, the bigscale logperch is found along wave-swept shorelines where the substrate is gravel and cobble (Propst 1999).
Key Habitat Components: rapid current, cobble-gravel substrate.

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)**:**

The larvae of the bigscale logperch drift in lotic environments into quite water where they become obligate planktivores after the mouth develops. Later, they feed on insects, crustaceans, and other small invertebrates (**Miller and Robison 1973**).

Diet category (list):

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

Grazing Effects (narrative):

Little life history information, however, based on large river habitat occupied and characteristic spawning habitat, grazing most probably will have little effect on the species.

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:** Rinne, J.N. and Magaña, H.A.
- **GP 2001:**
- **GP 2002:**
- **Revision:**

Bibliography:

Fishbase.org. 2002. Cite properly.

Propst, D. L. 1999. Threatened and endangered fishes of New Mexico. New Mexico Game and Fish Tech Report 1. 84 pp.

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