Scientific Name: *Notropis simus pecosensis*
Common Name: Pecos bluntnose shiner
BISON No.: 010411

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):

Federal (USDI): threatened, State NM: threatened

Eliminated from the Pecos River upstream of Sumner Reservoir to Santa Rosa Dam (Propst 1999). Abundance of the Pecos bluntnose shiner has declined considerably in the past 50 years (Platania, 1995). Abundance varies annually, largely in response to variable flow regimes, and habitat modification and altered thermal regime (Propst 1999). Damming and irrigation practices presumably are factors contributing to decline (Lee et. al. 1981, Platania and Altenbach 1998).

Pecos bluntnose shiners are prey to several piscivores in the Pecos River including native flathead catfish and nonative white bass (*Morone chrysops*) (Larson and Propst, 1996).

Seasonal dewatering. Successive years of flow-intermittency, coupled with lack of paucity of

flow spikes, can eliminate short-lived species, such as this shiner, from all or a significant portion of their ranges (Propst 1999).

Distribution (narrative)**:**

Pecos bluntnose shiners are found in the Rio Grande basin (including Pecos River drainage) of NM, TX, and Mexico, with records throughout length of river, however, none from major tributaries in Mexico (Lee et al. 1981). Formerly common, but now apparently extirpated from Rio Grande proper (last record in 1965), and much reduced in numbers in Pecos River of NM (Lee et. al. 1981). Pecos bluntnose shiners were found in New Mexico portions of both the Rio Grande and Pecos River (Platania and Altenbach 1998). In the Upper Pecos River, New Mexico Pecos bluntnose shiners have been extirpated from the 89-km reach between Santa Rosa and Summer Reservoirs (Platania and Altenbach 1998). The bluntnose shiner is endemic to the Pecos River in New Mexico and the Rio Grande in New Mexico and the El Paso/Cuidad Juarez area of Texas and Chihuahua (Gilbert, 1980b; Chernoff et al., 1982). The present distribution of the species, particularly age-1 and age-2 fish, is closely associated with seepage areas (Hatch et. al. 1985).

Key Distribution/Abundance/Management Areas:

Panel key distribution/abundance/management areas:

Breeding (narrative)**:**

Based on the wide range of lengths within an age-group and the presence of recently hatched individuals late in the season, Pecos bluntnose shiners appears to have a prolonged spawning season (Hatch et. al. 1985). The Pecos bluntnose shiner is a pelagic broadcast spawner; females release their non-adhesive, semi-buoyant eggs in the water column and males immediately fertilize them (Platania and Altenbach, 1998). After fertilization, the eggs drift with the current, Elevated flow (spring runoff and storm events) is an environmental cue to initiate spawning (Platania and Altenbach, 1998). Development of eggs is rapid and larvae hatch in 24 to 48 hrs (Platania and Altenbach, 1998). As protolarvae, Pecos bluntnose shiners drift with the current and in 4 to 8 days move into protected, low-velocity habitats (Propst 1999).

Habitat (narrative)**:**

Pecos bluntnose shiners are typically found in main river channels, often below obstructions, over substrate of sand, gravel, and silt (Lee et. al. 1981). Habitat consists mainly of shallow runs, however, they are uncommon in pools (Tashjian, 1997). Pecos bluntnose shiners are collected most often in main-channel habitats with sandy substrates, low velocity laminar flows, and at depths from 17 to 41 cm (Hatch et. al. 1985). Young-of-year Pecos bluntnose shiners are collected in large numbers from blackwaters (Hatch et. al. 1985). Larvae and juveniles tend to be most common in slow-velocity shoreline habitats and small embayments and backwaters (Propst 1999).

Key Habitat Components: moderate currents, shifting sand-gravel substrates

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)**:**

Adult Pecos bluntnose shiners are mainly insectivorous (Griswold, 1963). Young Pecos bluntnose shiners probably feed mainly on zooplankton and small aquatic insects associated with low-velocity habitats (Propst 1999).

Diet category (list):

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

Grazing Effects (narrative):

Habitats occupied by the Pecos bluntnose shiner and breeding behavior renders grazing effects relative to other threats such as inundation, flow alteration, and predation and competition by introduced species minimal.

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

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