

Scientific Name: *Rhinichthys cataractae*

Common Name: Longnose dace

BISON No.: 010175

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):

State NM: Provides limited protect.

Longnose dace hybridize with speckled dace, Rio Grande chub, and central stonerollers (**Smith 1973**).

Distribution (narrative):

The longnose dace occurs in the basins east of the Continental Divide (Koster 1957). The longnose dace is widely distributed from coast to coast in North America, including northern Mexico; ranges south in Appalachian and Rocky mountains (Lee et. al. 1981). The longnose dace widely occurs from coast to coast of north-central North America in the east along the mountains of Virginia; in the Mississippi drainage south to Iowa; in the western basin south to

northern Mexico; reported from northeastern Nevada, and in the inshore waters in all Great Lakes (Scott and Crossman 1973, Lee et. al. 1981).

Key Distribution/Abundance/Management Areas:

Panel key distribution/abundance/management areas:

Breeding (narrative):

Spawning of longnose dace occurs from early spring to early summer in riffles with water velocity of 45-60 cm/sec, or on wave-swept shores over a coarse substrate with crevices into which eggs are deposited (Koster 1957, Sublette et. al. 1990). Sexual maturity usually occurs in the second year, although some age I individuals, mostly males, also reach maturity (Brazo et. al. 1978). At the time of spawning, water temperatures range from 11.1-23.3 C (Becker 1983). Several to many males may fertilize the eggs of one female, which are demersal and adhesive. Sexual maturity is generally reached at age two. Fecundity varies with size of female with up to 10,000 eggs being recorded (Brazo et. al. 1978). Eggs are demersal and adhesive (Coburn 1986). Incubation of longnose dace eggs takes 7-10 days at 15.6 C (Lindsey 1970). The species lives up to five years maximum (Edwards et. al. 1983).

Habitat (narrative):

While the usual habitat of longnose dace is rocky riffle in a moderately cool stream, it is occasionally taken in the lower Rio Grande, and it can live in lakes (Koster 1957). The longnose dace lives in moderate currents because it remains close to the bottom, under and among the stones where the rate of flow is abated (Koster 1957). The longnose dace is common in swift streams with gravel beds, occasionally taken in lakes and clear pools of rivers (Lee et. al. 1981). The longnose dace is more ubiquitous on Atlantic slope than in west, where often common in riffle habitats, and in turbid, swift waters in upper Great Plains (Lee et. al. 1981). The longnose dace inhabits rubble and gravel riffles of fast creeks and small to medium rivers; also in rocky shores of lakes (Page and Burr 1991). The longnose dace seeks the interstices between stones in gravel-rock substrates of riffle areas of streams or in the surge zone or deeper water of lakes (Sublette et. al. 1990). Fry occupy quiet, shallow, protected margins of streams and move into swift water within six weeks (Gibbons and Gee 1972).

Key Habitat Components: gravel pebble substrate, moderate current velocities.

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 $\mu\text{S/cm}$)
- High (750-2000 $\mu\text{S/cm}$)
- Intermediate (250-750 $\mu\text{S/cm}$)
- Low (< 250 $\mu\text{S/cm}$)
- 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 longnose dace feeds largely on insects and crustaceans, and to a lesser extent on algae and slime from rocks (Koster 1957). The longnose dace feeds on the bottom, principally on chironomids, mayflies, and blackflies (Sublette et. al. 1990). The diet appears to be size related with plant material in individuals smaller than 50 mm while chironomids were consumed by individuals 50 to 69 mm in size (Sublette et. al. 1990). In Lake Michigan, Brazo et. al. (1978) found that terrestrial insects and fish eggs were common items in the stomachs of adult longnose dace.

Diet category (list):

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

Grazing Effects (narrative):

No specific information on grazing effects is available. However, increased sedimentation or removal of aquatic vegetation could affect longnose dace habitat and spawning success. In case of the latter, demersal adhesive eggs could suffocate if covered by excessive silt.

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

Bibliography:

Fishbase.org. 2002. Cite properly.

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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. The University of New Mexico Press. Albuquerque, NM. 393 pp.