Scientific Name: *Lepidomeda vittata*
Common Name: Little Colorado spinedace
BISON No.: 010174

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, Forest Service: sensitive, State AZ: threatened.
This threatened species occurs in only four drainages in the Little Colorado River system. Each population is a genetically distinct form. Habitat alteration through historic timber harvest, livestock grazing and dam construction in turn affected riparian-stream habitats through altered flow regimes and has had a major impact on the range and numbers of this species. Periodic droughts combined with management-induced influences also are a threat to the species. Introduction of nonnative species, principally nonnative salmonids and crayfish have and continue to negatively impact this native fish species.

Distribution (narrative)**:**

The species is endemic to the Little Colorado River and is found only in streams draining northward off the upper elevation, montane areas of the Mogollon Rim and the White Mountains. Currently, only five stream systems: Nutrioso Creek, Rudd Creek, extreme Little Colorado River headwaters, Silver Creek, Chevalon Creek, and East Clear Creek contain populations of spinedace.

Key Distribution/Abundance/Management Areas:

Panel key distribution/abundance/management areas:

Breeding (narrative)**:**

Spinedace spawning peak occurs in early summer (May-June), then sporadically in late summer and early autumn. Females can yield up to 5,000 eggs, depending on size of individuals. Eggs are broadcast spawn over aquatic vegetation and over gravel bottoms, with slow to medium currents. Males develop some coloration at the based of paired fins and develop tubercles. The species is often solitary, but will aggregate in schools.

Habitat (narrative)**:**

The species characteristically inhabits larger, deeper pools containing gravel substrates and with slow currents throughout or at least at the heads of these habitats. Following floods the species can become widely distributed throughout stream systems. By contrast, during drought, this small minnow persists in intermittent pool habitats. It can attain a relatively large size (> 4 inches) in large pool habitats, but is generally less than half this length in adult size. It congregates and associates with cover in form of large woody debris, boulders, or canyon walls.
Key habitat components: pools, cover in form of wood debris, 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)**:**

The species is pelagic and trout-like in behavior and feeding. Both adult aquatic and terrestrial insects are consumed from the water surface much like trout.

Diet category (list):

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

Grazing Effects (narrative):

No specific studies are available. Relative to dam construction and introduction of nonnative trout and crayfish, grazing influences are relatively insignificant. The most likely effect of grazing could come if streamside, woody vegetation is removed resulting in elevation of summer water temperatures. This impact could become limiting especially during periods of drought and congregation of spinedace in intermittent pools.

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:**

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