Scientific Name: *Ictalurus punctatus*
Common Name: Channel catfish
BISON No.: 010100

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 full protection.
Although there is no threat to the channel catfish it can readily hybridize with blue and Yaqui catfishes (Sublette et. al. 1990, Kelsch and Jensen 1997, Morizot et. al. 1997) and be a threat to these other species.

Distribution (narrative):

The channel catfish is native to the Canadian drainage (Sublette et. al. 1990). Its original range was from the Plains of Canada, the Hudson Bay drainage, and the St. Lawrence, throughout the Great Lakes and Mississippi River valley and associated drainages south and west (**Moore 1968**, Lee et. al. 1981, Sublette et. al. 1990). The native range is central drainages of the United States into southern Canada, and possibly also parts of Atlantic coast. The channel catfish is native to

portions of the Atlantic coast and to the Rio Conchos drainage of Mexico (Sublette et. al. 1990). The channel catfish is now essentially found throughout the United States and much of northern Mexico (Lee et. al. 1981, Sublette et. al. 1990). The channel catfish has been introduced widely in all other drainages of New Mexico except the Tularosa (Sublette et. al. 1990).

Key Distribution/Abundance/Management Areas:

Panel key distribution/abundance/management areas:

Breeding (narrative)**:**

The channel catfish is adaptable to a large variety of habitats and water conditions (Clemens and Sneed 1957). Spawning under natural conditions may depend on several factors: the size of the female, the intensity of environmental stimuli such as light, temperature, or disturbance (Clemens and Sneed 1957). Spawning occurs in spring and summer, generally from April through June in Arizona (Minckley 1973, Sublette et. al. 1990). Nests are constructed in burrows in undercut banks or other protective areas such as rubble, boulders, or logs where the gelatinous egg mass is laid in a hole or protected depression (Minckley 1973, Sublette et. al. 1990). The spawning act lasts 6 hours (Clemens and Sneed 1957). Channel catfish spawn between 70-85 F with optimum temperature around 85 F (Clemens and Sneed 1957). The period of incubation within this temperature range is 5-10 days (**Toole 1951**). The male channel catfish alone guards and cares for the eggs after the spawning is finished (Clemens and Sneed 1957, Minckley 1973). The eggs of channel catfish are demersal and adhere together into a compact mass which the male moves about to insure proper aeration (Sublette et. al. 1990). The type of nest surface and the amount of silt in the nest or water may determine whether or not eggs remained attached (Clemens and Sneed 1957). Hatching of channel catfish occurs in a relatively short period of time (Minckley 1973). After the yolk sac is absorbed, the newly hatched fry leave the nest, accumulate in mass at the bottom, and form schools, which may exist up to several weeks after they leave the nest (Clemens and Sneed 1957, Sublette et. al. 1990).

Habitat (narrative)**:**

The channel catfish is characteristic of clear, medium to large rivers with swift currents over sand or gravel-rocky bottoms (Lee et. al. 1981). The channel catfish is found in a wide range of warm to cool water habitats, from large rivers with low gradients to ponds and reservoirs (Sublette et. al. 1990). Juvenile channel catfish are most often found in riffles while adults are more common in pools of the Guadalupe River system in Texas (**Hubbs 1951**).

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)**:**

By the third day newly hatched channel catfish fry start to feed and move about (Clemens and Sneed 1957). The newly hatched channel catfish fry swim to flowing waters and feed upon aquatic invertebrates until about 100 mm total length and then become omnivorous, or piscivorous (Bailey and Harrison 1948). The stomachs of channel catfish were found to contain algae or bits of fibrous debris, but many others contained numerous fishes (principally threadfin shad) and/or crayfish (Minckley 1973). Channel catfish are nocturnal feeders that move onto swift riffles at night to forage (Minckley 1973). In large lakes they often move inshore at night, or on cloudy days (Minckley 1973).

Diet category (list):

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

Grazing Effects (narrative):

No specific information regarding grazing and channel catfish is available, but inferences from existing literature are possible. Livestock grazing probably does not affect adult channel catfish since they inhabit deep pools, but juveniles may be affected since they are often found in riffles. Clemens and Sneed (1957) reported that spawning might be affected by the intensity of environmental stimuli such as light, temperature, and disturbances. Livestock grazing can alter these environmental conditions thus retarding or reducing spawning in that segment of river. Livestock grazing might also impact nests of channel catfish since nests are constructed in burrows of undercut banks. Trampling of stream margins by livestock can destroy channel catfish nests or critical habitat.

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:**

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