Scientific Name: *Catostomus commersoni*
Common Name: White sucker
BISON No.: 010525

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 limited protection.
The white sucker is extirpated from the San Francisco drainage, but expanding in the Pecos drainage, and stable in the Canadian drainage (Sublette et. al. 1990).
Hybrids have been reported between white suckers and flannelmouth suckers (**Hubbs et. al. 1943**). The white sucker is preyed upon by birds, fishes, lamprey, and mammals (Fishbase 2002).

Distribution (narrative):

The white sucker is a highly adaptable, freshwater fish found from the Mackenzie River, Hudson Bay drainage, and the Labrador Peninsula; south along the Atlantic coast to western Georgia;

along the north extremes of the Gulf states to northern Oklahoma; north through the eastern section of Colorado, Wyoming, and Montana; and through Alberta, north-central British Columbia and southern Yukon territory (**Scott and Crossman 1973**, Lee et. al. 1981) through the Mississippi and Atlantic drainages to approximately the 35th parallel (Sublette et. al. 1990). The white sucker is native to middle elevations of the Pecos, Arkansas, and Canadian drainages of New Mexico, and has been introduced widely throughout New Mexico including into the Rio Grande, San Juan, and San Francisco Rivers (Koster 1957, Sublette et. al. 1990).

Key Distribution/Abundance/Management Areas:

Panel key distribution/abundance/management areas:

Breeding (narrative)**:**

Spawning of white suckers occurs in spring to early summer in water depths of less than 30 cm over a variety of substrates, beginning when water temperature reaches 10^{o} C (Koster 1957, Sublette et. al. 1990). White sucker spawning habitat is generally considered to be areas in inlets, outlets, small creeks, and rivers with relatively swift shallow waters running over gravel bottom (**Schneberger 1977**). A clean bottom of coarse sand (**Minckley 1963**) or gravel is essential quality of the spawning habitat of white suckers (**Dence 1948**, Koenst and Smith 1982). Water velocities at spawning sites vary from 14-90 cm/sec (Twomey et. al. 1984). Male white suckers typically reach maturity between the ages of II and IV (**Hayes 1956, Geen et. al. 1966**) depending on geographic location. Female white suckers usually mature 1 to 2 years later than males (**Spoor 1938**). Stewart (1926) reported riffle areas that were swept free of debris where eggs were probably deposited. White suckers usually migrate from lentic systems or stream pools to spawning riffles (Koster 1957, Koenst and Smith 1982). The fertilized eggs adhere to the gravel in riffles or drift downstream where they adhere to the substrate in areas with water of slow velocity (Koster 1957, Geen et. al. 1966). Eggs are demersal and non-adhesive (Sublette et. al. 1990). Incubation time for eggs is four days at 21.1º C. (Sublette et. al. 1990) however, Stewart (1926) reported incubation time of 18-21 days.

Habitat (narrative)**:**

The white sucker inhabits a wide range of habitats, from rocky pools and riffles of headwaters to large lakes (Fishbase 2002). The white sucker usually occurs in small, clear, cool creeks, and small to medium rivers, usually above 1,372 m elevation (Sublette et. al. 1990). Pools with logs, brush, or other cover are preferred habitats (Sublette et. al. 1990). Propst (1982) reported a high correlation between pool cover and white sucker populations. **Thompson and Hunt (1930)** described white sucker habitat as commonly shaded by trees on the bank or by overhanging grass, weeds, and shrubs. Adult white suckers primarily inhabit pools and are common in areas of slow to moderate velocity although smaller individuals occur in a greater variety of habitats than adults (**Propst 1982**) however, Stewart (1926) failed to find white suckers in pools entirely isolated from any inflow, such as those left by the subsidence of a stream. The white sucker may be found at a depth greater than 40 m (Fishbase 2002).

Key Habitat Components: Riffles with multi-category substrate components. Cover in form of brush and woody debris.

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 white sucker is an opportunistic nocturnal omnivore with a diet consisting of chrionomid larvae, diatoms, rotifers, protozoans, algae, invertebrates, and sand (Stewart 1926). The white sucker has been reported to be a "spawn eater" devouring the eggs of the log perch (**Rieghard 1920**) and trout (Koster 1957). The white sucker has been observed feeding on the head and viscera of rainbow trout (Sublette et. al. 1990). The white sucker moves to shallower water near sunrise and sunset to feed (Fishbase 2002). White suckers are active and feed throughout the year (Twomey et. al. 1984).

Diet category (list):

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

Grazing Effects (narrative):

There is no specific information on the effects of grazing on the white sucker. Its occupation of small, headwater streams through large rivers and in lakes implies that this is a highly adaptive species and may be resistant to direct or indirect effects of livestock grazing. However, grazing of streamside vegetation and suspended sediments from trampling of streambed may cause the white sucker to move out of its present 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:** Rinne, J.N. and Magaña, H.A.
- **GP 2001:**
- **GP 2002:**
- **Revision:**

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