

Common Name: Green Sturgeon (Northern and Southern DPS)

Scientific Name: *Acipenser medirostris*

Area of Concern: west coast of North America, from Baja CA to Canada.

Year First Listed as a “Species of Concern”: 2001

Brief Species Description: The green sturgeon is a widely distributed, ocean-oriented sturgeon found in nearshore marine waters from Baja Mexico to Canada. Green sturgeon are anadromous, spawning in the Sacramento, Klamath and Rogue rivers in the spring. Individuals spawn every few years beginning about age 15. Green sturgeon congregate in these and other estuaries during the summer, where they appear to neither breed or feed. Neither the purpose of these aggregations nor the portion of the population participating in them is known.



Photo: D. Gotshall, 1989

Two distinct population segments (DPS) have been defined for *A. medirostris*—a northern DPS (spawning populations in the Klamath and Rogue rivers) and a southern DPS (spawners in the Sacramento River) (Adams 2002).

Green sturgeon can be distinguished from white sturgeon, with which they co-occur, by the number of scutes along the side of the body (23-30 compared to >38 for white sturgeon), the presence of 1-2 scutes behind the dorsal fin (white sturgeon have none), and a relatively long snout with barbells closer to the mouth than the tip of the snout. While many green sturgeon are olive-green on their dorsal side, they can be gray or golden brown. Green sturgeon can reach 7 feet in length and weigh up to 350 pounds.

Rationale for “Species of Concern” Listing:

Demographic and Diversity Concerns:

(Musick *et al.* 2000) categorized green sturgeon as endangered, based on life history characteristics (discussed below) and a claimed 88% decline in abundance, attributed to Houston (1988). As described by Adams *et al.* (2002), the real source of the 88% decline statistic appears to be Cech (1992), who described the reduction in commercial landings of all sturgeon (mostly white) for the 1887-1901 period.

The limited contemporary data on green sturgeon abundance comes mainly from fisheries landings. Interpretation of much of the landings data is difficult because green sturgeon are not the targeted species, and effort levels have changed over time (generally declining). The best indicator of abundance for the Northern DPS appear to be the Klamath Tribal harvest, where green sturgeon are taken as bycatch in a salmon gillnet fishery and effort has not changed substantially over the period of record (Figure 1). Catch has been fairly constant, with 200-400 fish taken per year. There is no indication of a changing size distribution that would indicate a fishing-down of older members of the population. For the Southern DPS, the California Department of Fish and Game estimates the abundance of green sturgeon as a by-product of a white sturgeon monitoring program. These estimates are rather noisy, with a sharp jump up in 2000 (Figure 2). None of the data indicates that green sturgeon are declining in abundance, but neither do they indicate that green sturgeon populations are robust.

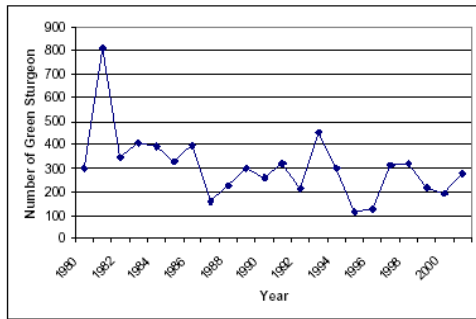


Figure 1. Catch of green sturgeon in the Yurok Tribal salmon gillnet fishery on the Klamath River.

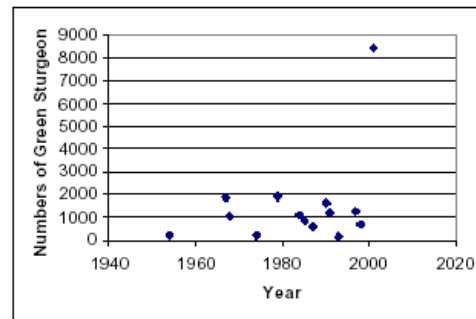


Figure 2. Estimated abundance of green sturgeon in San Pablo Bay.

Green sturgeon historically spawned in the Eel River, and it appears that this population may have been extirpated following the severe flood in 1964. Enormous quantities of sediment were delivered to the stream channel, filling most of the deep pools that this species requires. There may have also been a spawning population in the south fork of the Trinity River; if so, it appears this population has been lost.

Green sturgeon have many life history characteristics that make them vulnerable to habitat degradation and overexploitation. These include large size, late maturity, low productivity, long life span, and an anadromous life history.

Factors for decline:

While it is not known to what extent the abundance of green sturgeon has declined, it is probable that they have declined over the past century and a half. The freshwater habitat used by green sturgeon for spawning has been impacted by water development and land-use practices in the Sacramento and Klamath rivers. In the Sacramento, large dams in foothill streams have altered the hydrograph and blocked access to some habitat, and exotic species dominate the ecosystem. Many populations of native and anadromous fishes in these systems are listed as threatened or endangered under the California and federal endangered species acts.

Green sturgeon congregate, for unknown reasons, in coastal waters and estuaries where they are vulnerable to capture in salmon gillnet and other fisheries. It is not known whether these harvests are sustainable, or even where these fish originate. Fishing regulations generally do not differentiate between green and white sturgeon, but are written with white sturgeon in mind. Because green sturgeon are generally smaller than white sturgeon, the slot limits defining which fish can be retained may be inappropriate for green sturgeon. Harvest of green sturgeon has been reduced in the last 10 years due to regulation changes in the fisheries that take green sturgeon as bycatch.

Status Reviews/Research Completed or Underway:

A recent status review (Adams *et al.* 2002) defined two Distinct Population Segments (DPS) of north American green sturgeon. For both the Northern (Eel River and north) and Southern (Sacramento River) DPSs, the review team concluded that there was not enough information to suggest that green sturgeon were likely to become in danger of extinction in the foreseeable future. The status review notes substantial concerns about the risks due to habitat degradation, possibly unsustainable harvests, and a serious lack of information that together result in substantial uncertainty about the status of these DPSs. The review recommends that green sturgeon remain candidates for listing and that another status review be conducted within 5 years.

For further information on the Species of Concern Program in general, please contact Ms. Marta Nammack, NMFS, Office of Protected Resources, 1315 East West Highway, Silver Spring, MD 20910, (301) 713-1401, Marta.Nammack@noaa.gov; or Dr. Scott Rumsey, NMFS, Northwest Region, Protected Resources Division, 525 NE Oregon Street #500, Portland, OR 97232, (503) 872-2791, Scott.Rumsey@noaa.gov; or Dr. Peter Adams or Dr. Steve Lindley, NMFS, Santa Cruz Laboratory, 110 Shaffer Road, Santa Cruz, CA 95060, (831) 420-3900.

References

- Adams, P. B., C. B. Grimes, S. T. Lindley, and M. L. Moser. 2002. Status Review for North American Green Sturgeon, *Acipenser medirostris*. National Marine Fisheries Service.
- Cech J J, J. 1992. White sturgeon. Pages 70-72 *in* W. S. Leet, C. M. Dewees, and C. W. Haugen, editors. California's Living Marine Resources and Their Utilization. California Sea Grant Extension.
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