

(4) The inadequacy of existing regulatory mechanisms; or

(5) Other natural or man-made factors affecting its continued existence.

With the exception of enforcement responsibilities for certain plants, the Act defines "Secretary" to mean either the Secretary of the Interior or the Secretary of Commerce. Most marine species, including the totoaba, are the sole responsibility of the Secretary of Commerce. The authority of the Secretary has been delegated to the Assistant Administrator for Fisheries, NOAA.

The proposal summarized the information from the scientific literature and particular scientists that led to the proposed listing of totoaba as an endangered species. In September 1978, a workshop to evaluate the biological status of totoaba was convened by the NMFS at its Southwest Fisheries Center in La Jolla, California (the "Workshop"). The Workshop included scientists from the United States and Mexico who were most knowledgeable with this species and who reviewed the available information from the literature and from recent field work conducted in the upper Gulf of California.

The conclusions of the scientists participating in the Workshop were similar to those supporting the original proposal and they were summarized in a report which is available for public inspection upon request (see later discussion of the National Environmental Policy Act).

(1) *The present or threatened destruction, modification or curtailment of its habitat or range.* The totoaba spawns in the mouth of the Colorado River in the spring (probably April and May). In late winter, mature adults move out of the deeper waters of the northern half of the Gulf of California into the shallower waters along the east side of the Gulf. They form schools that move northward to the mouth of the Colorado River where spawning takes place. It has been postulated that this pattern of spawning migration responded historically to a salinity gradient or train of "odors" of freshwater or river substrate formed by the spring flood waters of the river mixing with the saline water of the upper Gulf. The result was a brackish water environment at the head of the Gulf that was apparently favored by totoaba as a spawning and nursery area.

Diversions of Colorado River water began in the early 1900's and spring floods essentially have been controlled since 1935 with the completion of Hoover Dam. Extensive diversion and construction of storage facilities

occurred throughout the latter half of the 1930's, and into the 1950's.

Southwest regional and international agreements for diversion of the Colorado River water were negotiated throughout this period resulting in a situation where Mexico is guaranteed a minimum of 1.5 million acre feet of water annually. The entire remainder of river flow (recent average is 11-13 million acre feet) is either stored or diverted for crop irrigation and municipal water supply within the southwestern United States. After the completion of Morelos Dam by Mexico in 1950, Mexico had the capability to use their entire allocation. However, some water continued to flow into the Gulf until the early 1960's because in years of above average flow the United States sometimes provided extra water to Mexico and drainage from irrigation by Mexico was returned to the main channel of the Colorado River.

It was demonstrated at the Workshop that at the present time (and for the past 10-15 years) essentially no water has entered the upper Gulf of California through the channel of the Colorado River. There was agreement among the Workshop participants that the reduction in river flow was one of several factors that contributed to the initial reduction of the totoaba population by altering the spawning and nursery habitat.

(2) *Overutilization for commercial, sporting, scientific, or educational purpose.* The totoaba is found exclusively in Mexican waters in the Gulf of California. It is the largest species (reportedly reaching a length of 2 m. and a weight of 90 kgs.) of the genus *Cynoscion* in the family *Sciaenidae* (which includes the California white sea bass, corvina, and other game fish).

As mentioned above, totoaba spawn in the spring. They leave the deep water in the northern half of the Gulf and migrate northward in shallower waters along the east side of the Gulf to the spawning area near the mouth of the Colorado River. Spawning behavior leads to a high density of fish within a limited area. During this period, as well as during the northern migration, the fish are highly vulnerable to sport and commercial fishing.

The commercial catch of totoaba for human consumption began in the early 1920's. From the time that the Mexican Government began keeping records (1929) the catch increased steadily to a peak in excess of 2,000 metric tons (m.t.) in 1942 (Flanagan and Hendrickson, 1976, Attachment VIII of the Totoaba

## DEPARTMENT OF COMMERCE

### National Oceanic and Atmospheric Administration

## DEPARTMENT OF THE INTERIOR

### Fish and Wildlife Service

#### 50 CFR Parts 17 and 222

#### Totoaba; Listing as an Endangered Species

**AGENCIES:** National Marine Fisheries Service, National Oceanic and Atmospheric Administration, Department of Commerce and the U.S. Fish and Wildlife Service (FWS), Department of the Interior.

**ACTION:** Final Regulation.

**SUMMARY:** The National Marine Fisheries Service ("NMFS") determined the totoaba (*Cynoscion macdonaldi*) to be an endangered species throughout its range, pursuant to Section 4 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.) (the "Act"). This species is added to the List of Endangered and Threatened Wildlife found in 50 CFR 17.11 and 50 CFR 222.23.

**FOR FURTHER INFORMATION CONTACT:** Dr. William Aron, Director, Office of Marine Mammals and Endangered Species, NMFS, Washington, D.C. 20235 (202) 634-7287.

#### SUPPLEMENTARY INFORMATION:

##### Background

On December 30, 1976, NMFS/FWS published a proposal to list the totoaba as an endangered species under the Act (41 FR 56839). This action was taken pursuant to Section 4(a) of the Act which provides that the Secretary may list a species because of any of the following circumstances:

(1) The present or threatened destruction, modification, or curtailment of its habitat or range;

(2) Overutilization for commercial, sporting, scientific, or educational purposes;

(3) Disease or predation;

Workshop Report, 1978<sup>1</sup>). The catch declined steadily after that to a 1958 low of about 300 m.t. It increased again from 1959 to 1966 when it peaked at about 1,100 m.t. The second increase may have been, in part, a response to protective measures that had been implemented in 1955 (creation of a sanctuary at the mouth of the Colorado River and a 45 day closed season during the spring spawning period) that may have allowed the population to increase, and/or, more efficient gear (nylon gillnets, for example) that allowed an increased catch, regardless of the population trend (Hendrickson, pers. comm., October 1978). The catch decreased again after 1966, to an all-time low of only 58 m.t. in 1975. There are no recent (last 20 years) estimates of the take in the sport fishery.

The added mortality of juveniles taken incidentally by shrimp trawls in the upper Gulf area was, and continues to be, another important point of vulnerability, although to an unknown extent. Some shrimp fishing is known to occur (illegally) in the sanctuary area of the head of the Gulf (field observations of Walker, et al., Spring, 1978<sup>1</sup>) but there are no data to indicate the actual amount of shrimping or the magnitude of the incidental catch of totoaba.

Workshop participants indicated that although the total shrimp catch, which increased steadily during recent years, has apparently stabilized, the number of boats has continued to increase (about 40 new boats were preparing to enter the fishery in the fall of 1978). That implies a steady increase in effort and suggests an increase in incidental take of totoaba in the shrimp fishery.

Scientists participating in the Workshop<sup>1</sup> confirmed conclusions in the original proposal that overfishing by both directed fisheries and incidental take in the shrimp fishery, the diversion of the Colorado River flow (that caused changes in the spawning habitat), and possibly insecticides, drastically reduced the population of totoaba initially in the 1940's and 1950's to an unknown fraction of its former abundance. It was also noted that the directed fisheries and incidental take continued after the protective measures were instituted in 1955, with the commercial catch increasing markedly from 1959 to 1966 when it most recently

peaked. Incidental catch in the shrimp fishery may have also increased. The catch declined steadily thereafter to the all-time low in 1975, whereupon Mexico recognized the totoaba as a protected species on June 19, 1975, and declared an indefinite prohibition on all forms of directed fishing for the species. The Workshop concluded that the totoaba is very likely endangered and that the continued incidental take of both juveniles (in the shrimp fishery) and adults (in the gillnet fisheries for other species) was currently the principal threat to the species.

(3) *Disease or predation.* There are no diseases known to be significantly affecting this species. Predation of eggs, larvae and juveniles by other species of fish and other animals undoubtedly occurs, but to an unknown extent.

(4) *The inadequacy of existing statutory mechanisms.* The totoaba is currently listed as a protected species by Mexico and all directed fisheries are prohibited. Incidental catch, however, is allowed in the shrimp and gillnet finfisheries of the northern Gulf of California. In addition, the totoaba is currently listed on Appendix I of the International Convention on Trade in Endangered Species of Fauna and Flora (CITES) which prohibits the importation of this species for other than scientific purposes or for enhancement or propagation of the species. This final listing duplicates the prohibition on importation and is expected to provide the following added benefits to the species: an additional deterrent to commercial and sporting take by persons subject to U.S. jurisdiction; an impetus to development of joint research with Mexico; and an encouragement to Mexico to reduce the remaining take to allow rebuilding of the population.

(5) *Other natural or man-made factors affecting its continued existence.* There are no other known factors significantly affecting this species.

#### Summary of Comments and Recommendation

Five comments were received favoring the proposal. Only one negative comment was received from a fish importer in southern California who protested the action as unnecessary. He pointed out that the fish was caught in Mexico and asserted that the Mexican Fisheries Department had the totoaba situation well in hand. The information available to the NMFS, however, indicates that the totoaba situation remains serious and that the listing as endangered is entirely appropriate.

#### Effect of This Rulemaking

Section 9(a) of the Act sets forth a series of general prohibitions which apply to all endangered species of fish and wildlife. With respect to any endangered species listed pursuant to Section 4 of the Act, it is unlawful for any person subject to the jurisdiction of the United States to:

(1) Import any such species into, or export any such species from, the United States;

(2) Take any such species within the United States or the territorial sea of the United States;

(3) Take any such species upon the high seas;

(4) Possess, sell, deliver, carry, transport, or ship, by any means whatsoever, any such species taken in violation of (2) or (3) above;

(5) Deliver, receive, carry, transport, or ship in interstate or foreign commerce, by any means whatsoever and in the course of a commercial activity, any such species;

(6) Sell or offer for sale in interstate or foreign commerce any such species; or

(7) Violate any regulations pertaining to such species and promulgated by the Secretary pursuant to authority provided by the Act.

The term "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.

Section 4(a)(1), as amended on November 10, 1978, also states that "At the time any such regulation is proposed, the Secretary shall also by regulation, to the maximum extent prudent, specify any habitat of such species which is then considered to be critical habitat." Since the totoaba occurs only in Mexican waters no critical habitat is designated for this species. The Act does not contemplate the designation of critical habitat in foreign countries and, under previously established policy, the United States has refrained from making foreign designations.

#### National Environmental Policy Act

The Assistant Administrator has determined that the proposed designation of the totoaba as an endangered species is not a major Federal action which would significantly affect the quality of the human environment within the meaning of the National Environmental Policy Act of 1969. An environmental assessment pertaining to this determination is available for public review in the Office of Marine Mammals and Endangered Species, National Marine Fisheries

<sup>1</sup>Report of the Workshop to Evaluate the Biological Status of Totoaba, *Cynoscion macdonaldi*, held at the National Marine Fisheries Service Southwest Fisheries Center, La Jolla, California, September 18-19, 1978, with 9 attachments. This report, which confirms previous biological conclusions about totoaba, is attached to the Environmental Assessment pertaining to this listing. The assessment may be reviewed or obtained as indicated in the National Environmental Policy Act section of the preamble.

Service, 3300 Whitehaven Street, N.W., Washington, D.C. or may be obtained by writing to the Assistant Administrator for Fisheries, National Oceanic and Atmospheric Administration, Department of Commerce, Washington, D.C. 20235. The workshop report referred to in this preamble is attached to the Environmental Assessment.  
 Miscellaneous: Under Executive Order 12044 (43 FR 23170) and

Department of Commerce Administrative Order 218-7 (44 FR 2082), the Assistant Administrator for Fisheries has determined that this final action is not a significant regulation in accordance with established agency criteria and that preparation of a regulatory analysis is not required.  
 The primary author of this final rule is Dr. Robert V. Miller, Office of Marine Mammals and Endangered Species, (202) 634-7461.

**Regulation Promulgation**  
 Accordingly, 50 CFR Chapter I, Part 17 and Chapter II, Part 222, are amended as follows:  
**§ 17.11 [Amended]**  
 (1) The list of endangered and threatened wildlife in 50 CFR § 17.11 is amended by adding the totoaba under the class entitled "FISHES" and immediately before "Trout, Arizona," as follows:

Species		Popula- tion	Range		Status	When listed	Special rules
Common name	Scientific name		Known distribution	Portion endangered			
Totoaba	<i>Cynoscion macdonaldi</i>	N/A	Gulf of California	Entire	E		N/A

Dated: April 12, 1979.  
 Lynn A. Greenwalt,  
 Director, U.S. Fish and Wildlife Service.  
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**§ 222.23 [Amended]**  
 (2) 50 CFR § 222.23(a) is amended by adding "Totoaba (*Cynoscion macdonaldi*)" immediately after "Shortnose Sturgeon (*Ancipenser brevirostrum*)" in the second sentence.