

CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES
OF WILD FAUNA AND FLORA



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Species specific matters

TOTOABA – *TOTOABA MACDONALDI*
OPPORTUNITIES FOR INTERNATIONAL COLLABORATION WITHIN THE CITES FRAMEWORK

1. The present document has been submitted by Mexico*.

Background

2. The totoaba (*Totoaba macdonaldi*) is a fish endemic to the Upper Gulf of California, off the coast of Mexico, highly prized on the international market for its swim bladder, and has been listed in CITES Appendix I since 1977.
3. In 1993, the Upper Gulf of California and Colorado River Delta Biosphere Reserve was established, on the basis of the decree published on 10 June in the Official Gazette of the Federation, to protect the habitat of the totoaba, other endangered species of commercial importance, as well as biodiversity and the evolutionary processes sustaining it.
4. Consequently, international trade in the species is governed by Article III of CITES. In addition, the species is listed under the IUCN as “Critically endangered” and under the United States Endangered Species Act as “Endangered”. In Mexico, the species is currently listed in the category of “Endangered” (P) under the standard NOM-059-SEMARNAT-2010 and an open-ended ban on its utilization in the wild has been in force since August 1975.
5. From 1994 to the present, the Government of Mexico has supported various research undertakings directed towards the development of a biotechnology for breeding of the totoaba. Important among these are the studies carried out in the Management Units for the Conservation of Wildlife (UMAs).
6. The UMA under the aegis of the Autonomous University of Baja California (UABC) has carried out more than 20 years of uninterrupted research, resulting in the release into the wild of approximately 84,000 juveniles. In addition, having tested alimentary mechanisms for fattening the species, at the present time the UABC has the first bank of first-generation breeding totoaba, completely mature and in a condition to produce young, intended to promote development of sustainable aquaculture.
7. The first captive breeding of the totoaba gave rise to the production of basic information which has made it possible to increase understanding of this species, in the areas of its reproduction, early development, physiology and nutrition.
8. The date of 10 April 2015 saw the entry into force of the “AGREEMENT for the temporary suspension of commercial fishing using gillnets or longlines deployed from small vessels, in the North of the Gulf of California”, intended to protect the vaquita porpoise (*Phocoena sinus*) and indirectly the totoaba.

* The geographical designations employed in this document do not imply the expression of any opinion whatsoever on the part of the CITES Secretariat (or the United Nations Environment Programme) concerning the legal status of any country, territory, or area, or concerning the delimitation of its frontiers or boundaries. The responsibility for the contents of the document rests exclusively with its author.

Problems affecting the species

9. Legal trade in wild specimens of totoaba is prohibited, however, there is illegal fishing for and trade in totoaba, principally destined for the Asian market. The swim bladder (known as “maw”) is used as a gourmet food, one to which various aphrodisiac and curative properties are ascribed. The price of the maw on the illegal market depends on the size and quality of the product, varying between USD 5,158.73 and USD 15,438.60 (per kilogramme) (Greenpeace 2015, Guilford 2015).
10. It is known that the illegal fishing is carried out with totoaba nets (prohibited in most of the Upper Gulf of California) and longlines. The gaps in the net mesh may be up to 12 inches, and the length of the nets can be between 300 and 1,500 metres. Further, the nylon longlines may have between 50 and 1,000 No. 1 and/or No. 2 hooks, and be of lengths between 20 and 1,500 metres.
11. Once the swim bladder (maw) has been removed from the totoaba, it is transported either fresh or dried, hidden in packages or coolers, following an “ant colony” transportation method. The bladders are transported across the desert or areas with little human habitation, or in local vessels heading for the frontier points or dealers (in the main fishing ports of the area). Transportation in the dried state reduces the weight but increases the value.
12. Dispatch is generally done with dried specimens in various kinds of packaging, to be carried by parcel and courier services, or in suitcases or other luggage, at weights of 10 to 15 kg.
13. Shipments have been intercepted at various air and sea ports, intended for delivery to the United States of America or the Asian continent. In this connection, the United States has set up legal procedures and seizures in towns on the border with Mexico. The Faculty of Marine Sciences of the Autonomous University of Baja California has been working together with the Forensic Analysis Laboratory of the United States Fish and Wildlife Service in order to identify genetically the specimens seized.
14. It is estimated that between 2012 and 2015 more than 1,500 adult specimens have been caught in illegal fishing (Enríquez *et al.* 2015). Assuming that half of these specimens were females, that would represent (assuming a weight of 10 kg, and depending on the size and age of the female) between 500,000 and 25,000,000 eggs (True, 2012; De Anda *et al.*, 2013). In the light of the above, and taking into account the numbers of specimens and parts seized, and assuming that half were females, in other words that 750 females were seized, that would give a total of approximately 37,500,000 eggs lost from the wild, calculated on the assumption of 500,000 eggs per female, in accordance with De Anda *et al.* 2013.

Recent measures adopted by Mexico to tackle the problems affecting the species

15. In March 2015, the Senate of the Republic resolved to instruct the Federal Executive authority to request CITES to take relevant measures to cause China and the United States to halt the purchase and illegal trafficking of totoaba bladders. In response to this instruction, on 17 March 2015 a meeting was held, coordinated by the Under-ministry for Management and Protection of the Environment, under the Ministry for the Environment and Natural Resources.
16. On 16 April 2015 President Enrique Peña Nieto launched, in San Felipe, Baja California, the “Programme for comprehensive care of the Upper Gulf”, with participation by the Ministries of the Interior, National Defence, the Navy, Finance and Public Credit, Communications and Transport, Agriculture, Stockbreeding, and Rural Development, Fisheries and Food, as well as the Office of the Attorney General of the Republic, and the governments of Sonora and Baja California. That programme incorporates four lines of action:
 - (a) Prevention of illicit fishing activities;
 - (b) Preservation of the marine ecosystem and the protected natural area;
 - (c) Prevention of illegal trade in species at risk of extinction or subject to special protection arrangements; and
 - (d) Interdiction of organized crime groups engaged in working on drug trafficking in the marine environment.

Implementation of the Law

17. During the period between 2013 and 2016, the Federal Office for Environmental Protection (PROFEPA), in coordination with the Ministry of the Navy (SEMAR), the National Commission on Natural Protected Areas (CONANP), the National Commission on Aquaculture and Fisheries (CONAPESCA), the Ministry of

National Defence (SEDENA), the Federal Police (PF), the General Customs Administration (AGA) and the National Agro-Food Safety and Quality Service (SENASICA) undertook marine surveillance operations in the Upper Gulf of California and at the border between Mexico and the United States of America:

- (a) On land, there was a review of fishing grounds and catches, both in the Gulf of Santa Clara, Sonora and in the Port of San Felipe, Baja California.
- (b) The marine range of the totoaba and the vaquita porpoise are under permanent surveillance
- (c) There are ongoing checks at ports, airports and frontier crossings.
- (d) Parcel services have been alerted to detect illegal shipments of totoaba and other marine species.

As an example of the results obtained between 1 January and 15 March 2016, 64 surveillance runs were performed (44 at sea and 23 on land), two establishments were inspected, and 13 vessels and 117 sets of fishing gear were seized, as were 19 parts and/or specimens of totoaba, and six persons were handed over to the Federal Office of the Attorney General.

PROFEPA, assisted by CONAPESCA and CONANP, provided training to 1,291 public officials of SEMAR (848), SEDENA (209), the Federal Police (7) and the Mexican Customs authority (227), assigned to various locations in Baja California, from where they assisted in preventing and combating trafficking in this marine resource.

These coordinated actions have provided for a regional scale of surveillance which makes it possible over time to detect species and illicit activities in marine operations, in boats and vessels menores and, on land, in private homes, stores, freezing plants and dealers for shellfish and other seafood, restaurants, road transport facilities, parcel services, ports, airports and frontier posts.

Management and conservation

18. Since 1993 the Upper Gulf of California and Colorado River Delta Biosphere Reserve has been decreed a protected area. With that as a basis, various environmental education campaigns and identification workshops have been held.
19. At least four projects on management and breeding of totoaba have been held (Unit for Biotechnology in Pisciculture of the UABC, Breeding Centre for Marine Species of the State of Sonora (CREMES), Earth Ocean Farms (EOF) and Pacifico Acuaculture, in the legal form of UMAs), and seven research projects into its populations and fisheries, one of which incorporated four working phases (Technological Inst. Guaymas, UABCS, IPN, CIBNOR, Conservación del Territorio Insular Mexicano). These UMAs have progressively scaled up their capacity and serve at least two purposes: firstly, to initiate an experimental process of repopulation of the species, releasing juveniles (captive-bred) into the wild; and secondly to enhance the valuation of developing an aquicultural production line.
20. Between 2013 and 2014 the four projects on management and breeding of totoaba have released into the wild more than 100,000 specimens from captive breeding (True, 2010; Enríquez 2016 *personal communication*). From the genetic analysis (paternity tests) on the totoaba seized between 2013 and 2015, two individuals were identified, one seven years old and one 13, that had been born in captivity (Enríquez et al., 2015). This represents the first evidence that the release of captive-bred young totoaba does indeed contribute individuals to the wild breeding population and has the potential to increase the numbers of this resource in its natural habitat.

Records of releases of juveniles by the Management Units for the Conservation of Wildlife		
Institution	Year	Number of fingerlings
UABC	1997	200
UABC	1999	600
UABC	2000	1,200
UABC	2001	3,300
UABC	2002	1,600
UABC	2007	2,000
UABC	2012	2,070
UABC	2013	12,000
UABC	2014	17,000
CEMES	2015	20,000
UABC	2015	42,300
CREMES	2015	61,000
EOF	2015	1,500
Total		164,770

21. In addition, the hatchery UMAs have obtained more than 120,000 juveniles which have been delivered to other UMAs for fattening up the fish for commercial purposes (Enríquez-Paredes *pers com.*)
22. The total biomass and the scale of the impact of the intense illegal fishing on the resource are not yet known in detail. But the Government of Mexico, through the Ministry for the Environment and Natural Resources (SEMARNAT-DGVS) has authorized an investment of approximately 58 million pesos to ramp up the UABC UMAs for hatching and raising, with the goal of producing up to 1 million juveniles a year, which will be intended to initiate an ongoing repopulation programme, with genetic monitoring of the impact of the releases on the genetic make-up of the wild population.

Collaboration at international level

23. During the XX Meeting of the Canada/Mexico/US Trilateral Committee for Wildlife and Ecosystem Conservation and Management (San Diego, USA, April 2015), the North American Region agreed to collaborate in tackling the problems relating to the totoaba, by means of:
 - (a) Establishing measures for sharing information, experiences and lessons learned, and analyzing available information to turn it into intelligence;
 - (b) Developing outreach and identification material for all relevant stakeholders, including authorities and consumers; and
 - (c) Developing and implementing joint surveillance and inspection operations to strengthen the implementation of CITES and close the borders to the illegal trade in totoaba.
24. By way of Notification to the Parties 2015/050 [MEXICO – Totoaba \(*Totoaba macdonaldi*\) and vaquita porpoise \(*Phocoena sinus*\)](#) (August 2015) Mexico urged the Parties to CITES to cooperate with the operations undertaken to halt the illegal international trade in totoaba, through the following actions:
 - (a) Take note of the previous and recent activities undertaken by Mexico to respond to the critical situation of the totoaba and the vaquita porpoise, available through the link;

- (b) Confiscate illegal shipments of totoaba and share with the Mexican CITES Authorities information about the illegal trade in totoaba in a Party's territory;
 - (c) Disseminate information about the problematical situation of both species and take domestic measures to discourage illegal trade in totoaba; and,
 - (d) Share successful experiences that could help address the problematical situation of the totoaba and vaquita porpoise.
25. During a trilateral teleconference among China, the United States and Mexico (held in September 2015) on the totoaba, the three countries reached promising agreements on cooperation in the conservation of the totoaba.
26. At the 66th meeting of the Standing Committee (SC66, Geneva 2016), Mexico submitted document SC66 Doc. 58 "Totoaba (*Totoaba macdonaldi*): Opportunities for international collaboration within the CITES framework", which describes the problems relating to demand on the international market for specimens of totoaba acquired illegally, and how this is related to the problems of the vaquita porpoise (*Phocoena sinus*). Specifically, Mexico called for collaboration of the international community through the exchange of information to combat the problems affecting both species. That provided an excellent opportunity for the holding of trilateral meetings among China, Mexico and the United States, with promising results and agreements directed towards conservation of the totoaba.

Recommendations to the Conference of the Parties

27. Publicize the progress achieved in the traceability of released specimens of *Totoaba macdonaldi*, as well as activities coordinated with the Forensic Analysis Laboratory of the United States Fish and Wildlife Service.
28. Confiscate illegal shipments of totoaba and share with the Mexican CITES Authorities information about the illegal trade in totoaba in the Party's territory.
29. Support for the development of technical capacities for the benefit of sustainable fishery activities and the recovery of the wild populations of totoaba.
30. Publicize the problems, and take domestic measures to discourage illegal trade in totoaba, and share successful experiences that could help address the problematical situation of the totoaba and vaquita porpoise.
31. Draw up recommendations to facilitate the implementation of the provisions of CITES applicable to the totoaba (*Totoaba macdonaldi*).

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COMMENTS FROM THE SECRETARIAT

The Secretariat recognizes Mexico's efforts for the conservation of Totoaba (*Totoaba macdonaldi*) and congratulates China, Mexico and the United States of America on the promising results of their trilateral meetings in this regard. The Secretariat proposes that the Conference of the Parties take note of the document and encourage Mexico to continue to work with relevant Parties and relevant international organizations on improving the conservation status of the species.