

Briefing to the 66th Standing Committee of CITES

January 11-15, 2016



DUAL EXTINCTION:

The illegal trade in the endangered totoaba and its impact on the critically endangered vaquita



ABOUT EIA

EIA is an independent campaigning organisation committed to bringing about change that protects the natural world from environmental crime and abuse. As part of our work we have campaigned for three decades for effective protection for whales, dolphins and porpoises globally.

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Sunset in San Felipe, Mexico
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EXECUTIVE SUMMARY


The vaquita and the totoaba have much in common: both are critically endangered, both are protected from international trade under CITES and both are endemic to a relatively small area of the Upper Gulf of California, Mexico. They are of a similar size, have a similar lifespan and both species are threatened with extinction by the same activity - illegal fishing.

The vaquita is a small porpoise found only in the waters of the northern Gulf of California, off the coast of Mexico. In 1997, its population was estimated at 567 but by 2014 it had plummeted to just 97 animals due to fishery bycatch. Recent evidence based on acoustic monitoring suggests a 42 per cent decline in the vaquita population between 2013-14.¹ This alarming, accelerated decline is attributed to the resurgence of an illegal fishery for totoaba, the swim bladders of which are highly sought in Hong Kong and southern mainland China. Dubbed 'aquatic cocaine' due to the high prices it fetches, the demand for dried totoaba swim bladders is threatening not just the totoaba but also the vaquita - the world's most endangered marine mammal, which is accidentally caught in the illegal nets set for totoaba.

The totoaba has been listed as critically endangered since 1996; however population estimates have not been carried out since fishing for this species was banned in 1975. As with other large long-lived fish species in the croaker family, totoaba are vulnerable to over-fishing, particularly given the additional market pressure from the value of the swim bladder in foreign markets.

Recently, the plight of the vaquita and the totoaba has gained international attention. Mexico has implemented an emergency two-year gillnet fishing ban throughout the vaquita range. US agencies in southern California, a hub for totoaba swim bladders smuggled from neighbouring Mexico en route to China, have made a series of seizures and prosecutions. Yet, as EIA's research and on-the-ground monitoring shows, the enforcement response in the main totoaba markets of Hong Kong and China remains inadequate.

While this lucrative market continues, vaquita will inevitably die in illegal fishing nets and dwindle to extinction. Governments, customs and other enforcement agencies need to urgently step up efforts to halt the illegal totoaba trade in order to save both species.



“Demand for totoaba swim bladders is threatening not just the totoaba but also the vaquita – the world’s most endangered marine mammal.”

VAQUITA - LESS THAN THREE YEARS TO SAVE A SPECIES

“Scientists have warned for almost two decades that the survival of the vaquita was dependent on eliminating bycatch in gillnets.”

The critically endangered vaquita (*Phocoena sinus*) is the smallest – and most endangered – cetacean species in the world.² In the past three years, half of the vaquita population has been killed in gillnets, many of them set illegally to capture a large and critically endangered fish called the totoaba (*Totoaba macdonaldi*). Fewer than 100 vaquitas remain and at the current rate of decline the species could be extinct by 2018.³

Known also as vaquita marina or Gulf of California harbour porpoise, the vaquita - which means ‘little cow’ in Spanish - has the smallest geographical range of any marine cetacean species, its known distribution encompassing an area of only about 4000km² in the northernmost Gulf of California. With adults reaching around 1.5m in length and weighing 55kg, the vaquita is the smallest member of the porpoise (*Phocoena*) family.⁴ Its conspicuous dark patches around the eyes and mouth make it one of the most iconic cetaceans, although difficult to see in the wild.⁵

HISTORY OF CONSERVATION EFFORTS

Scientists have warned for almost two decades that the survival of the vaquita was dependent on eliminating bycatch in

gillnets set for shrimp, finfish and sharks; however, conservation action has been largely ineffective. Until recently, measures to address the primary threat of bycatch have been inadequate, incomplete or not enforced.

Early efforts include the creation of the Upper Gulf of California and Colorado River Delta Biosphere Reserve in 1993 and the Refuge Area for the Protection of the Vaquita in 2005. Gillnet fishing in the Refuge Area was officially prohibited, but there was little enforcement, the refuge did not cover the entire vaquita range and the ban was widely ignored.⁶ Gillnet fishing continued unimpeded; the number of pangas (traditional fishing boats) doubled from 2005-07, and illegal fishers outnumbered legal fishers.⁷ Over the past five years the Government of Mexico has increased efforts to protect the vaquita, investing more than \$30 million in conservation efforts including a compensation scheme (‘rent-out’, ‘buy-out’, and ‘switch-out’) to eliminate gillnetting and industrial trawling within the Refuge, but the vaquita continued to decline.⁸

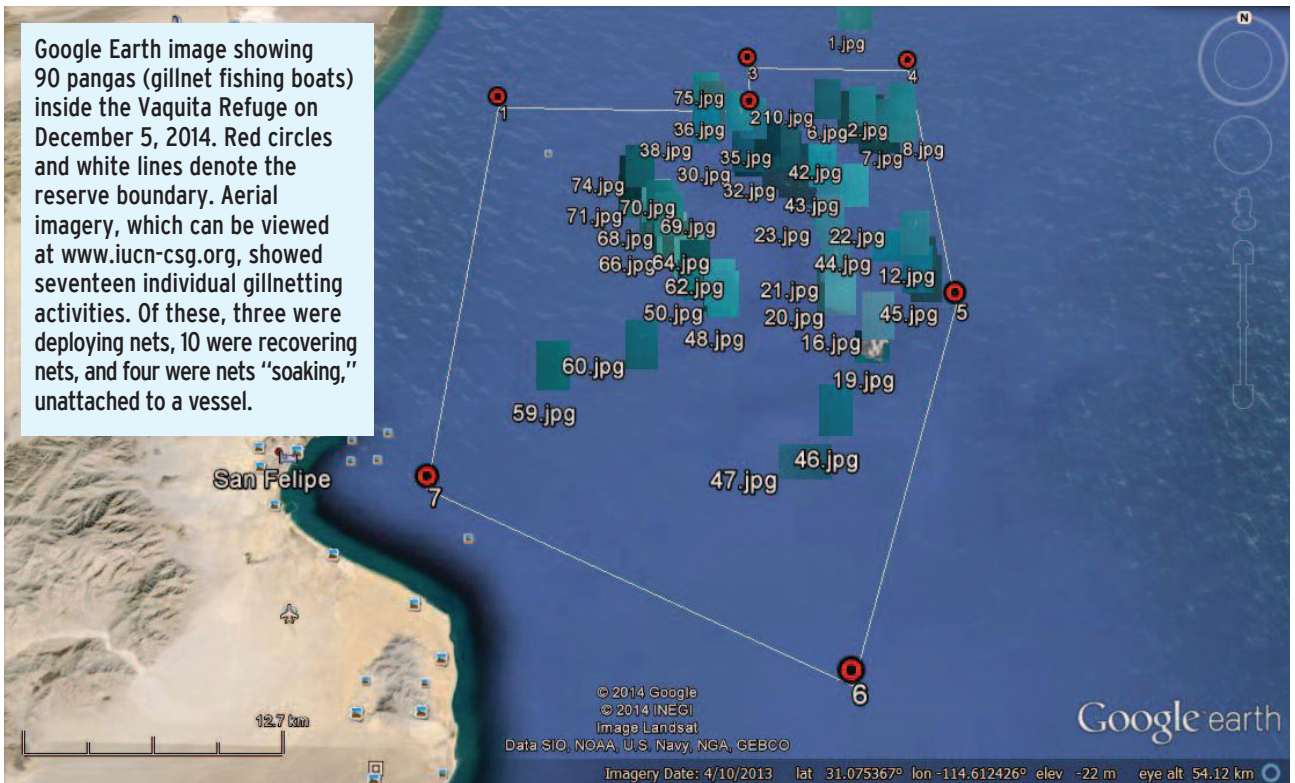
This decline has been tracked for almost two decades by the International Committee for the Recovery of the Vaquita (CIRVA), created in 1997 at the request of the Government of Mexico to develop a recovery plan for the species. The committee includes well-known international and national scientists who draw upon the expertise of the fishing industry, fishermen, government and non-governmental organisations. At its first meeting in 1997, CIRVA quickly identified bycatch in gillnets as the greatest threat to the survival of the vaquita.⁹ It subsequently met five times – in 1999, 2004, 2012, 2014 and 2015 – each time pronouncing a bleaker outlook for the survival of the vaquita.¹⁰

In 1999, CIRVA endorsed a vaquita abundance estimate of 567 individuals, based on surveys conducted in 1997.¹¹ By 2012, the population estimate had been reduced to about 200 animals and when CIRVA met in 2014 it issued its starkest warning yet: “*The vaquita is in imminent danger of extinction*”.¹² Acoustic data indicated that just 97 vaquita remained, with likely fewer

BELOW:
Gillnet fishing in the Upper Gulf of California.



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than 25 reproductively mature females. CIRVA predicted that the vaquita would be extinct, possibly by 2018, unless fishery by-catch was eliminated immediately and recommended that the Government of Mexico enact emergency regulations to establish a gillnet exclusion zone.¹³

The CIRVA report noted the resurgent illegal fishery for totoaba as a new and serious threat to the vaquita, due to an increased demand in Hong Kong and mainland China for the swim bladder (locally called *buche*). Totoaba are captured in anchored, large-mesh gill nets set at night, with fishermen receiving up to \$8,500 per kg for the bladders.¹⁴ In addition to the illegal totoaba fishery, considerable illegal fishing with gillnets takes place within the Upper Gulf including fishing without permits, fishing with expired permits, using illegal lengths of gillnets and fishing within protected areas including the Vaquita Refuge (see map above).¹⁵

In response to the alarming conclusions of the 5th CIRVA meeting, on April 15, 2015 President Enrique Peña Nieto visited San Felipe to announce the Program on the *Comprehensive Care of the Upper Gulf*, a strategy to save both the vaquita and the totoaba. This involves a two-year ban on all gillnet fishing in the area of the expanded Vaquita Refuge, financial compensation to fishermen and fishing-related personnel,



a community-based surveillance and enforcement scheme and efforts to strengthen Mexico's capacity to combat illegal fishing for totoaba. The success of these efforts remains to be seen; however, CIRVA has categorically stated that the survival of the vaquita depends on a permanent gillnet ban as well as the application of all available enforcement tools to stop illegal fishing.¹⁶ Ending the illegal trade in totoaba is essential for the survival of the vaquita.

ABOVE:
Vaquita killed in fishing net.

TOTOABA - A CRITICALLY ENDANGERED FISH

A fish by many other names

Totoaba also go by the names of drum, Acoupa Totoaba (French), Corvinata Totoaba, Cabicucho, Curvineta, Curvina piedra, Abanico, Machorro, Mexican seabass, Mexican weakfish and jewfish, among others.¹⁹

The totoaba (*Totoaba macdonaldi*) is a large and long-lived marine fish, endemic to the Gulf of California.¹⁷ It is the largest species within the *Sciaenidae*, a family of fish commonly known as drums or croakers, which includes California white sea bass and corvina. It can grow to more than 2m in length, weigh up to 100kg and can live as long as 25 years.¹⁸

The totoaba is only found in the central and northern Gulf of California. The species spawns in the northernmost part of the gulf in the Colorado River Delta, although historically it is thought to have also spawned further south on the eastern side of the Gulf, especially in the mouth of the Rio Fuerte.²⁰

The totoaba fishery was the Gulf's most important fishery at the beginning of the 20th century. It originally developed in response to the demand for its swim bladder, which was exported to China and to Chinese communities in California.²¹ A US market for whole totoaba also developed and catches peaked in 1942 at over 2000 tonnes, subsequently declining to 59 tonnes by 1975 when commercial fishing was

banned.²² Once considered abundant, rampant overfishing, habitat degradation, bycatch and illegal fishing have all contributed to the species being listed as critically endangered by the International Union for Conservation of Nature (IUCN) since 1996.²³

Trade in totoaba or any part of a totoaba is illegal under both US and Mexican law. Totoaba fishing was banned in 1975 and two years later the species was placed in Appendix I of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), banning international trade.²⁴ In 1979, it was listed as Endangered under the U.S. Endangered Species Act.²⁵ Mexico included it on its list of species In Danger of Extinction in 1994.²⁶

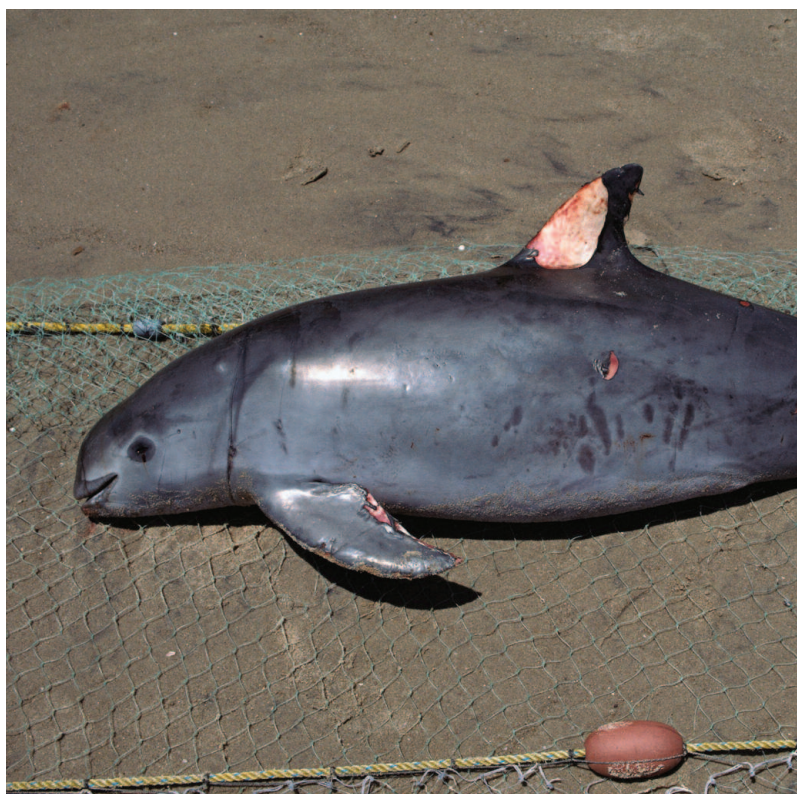
No survey of the totoaba population has been conducted since the fishery was banned in 1975 and the population status is currently unknown.²⁷ While there are some indirect indications of recovery, poaching significantly increased at the beginning of 2013.²⁸ Currently the main threat to totoaba is illegal fishing, which is encouraged by the high price of the totoaba swim bladder. Fishermen are reported to receive as much as \$8,500 per kg on the local black market.²⁹

Poachers use gillnets prohibited for fishing activities in the upper Gulf of California and fish in areas where all fishing activities are banned. Totoaba are captured in anchored, large-mesh gill nets set at night which are left for several days. Illegal activity is especially common during the spawning season, when totoaba are most vulnerable and before the adults are able to spawn.³⁰

Like other members of the croaker family, the totoaba is particularly vulnerable to overfishing due to its life history parameters, including longevity and aggregation spawning.³¹ Given this, the additional market pressure from the illegal swim bladder trade and loss of spawning habitat from the degradation of the Colorado River Delta are both major causes for concern.³² A scientifically-based and transparent stock assessment

BELOW:

Bycatch threatens both the vaquita and the totoaba.



INTERNATIONAL DEMAND FOR FISH MAW

Dried fish swim bladder (commonly referred to as 'maw') is a traditional and highly valued dried seafood item, alongside shark fin, abalone and sea cucumber. Indeed, these products are so embedded in traditional Chinese culture that a common phrase to describe extravagance and wealth literally translates to abalone, sea cucumber, shark fins and fish maws. The highest demand occurs in mainland southern China and Hong Kong, the latter being a well-established trading centre.³³ Commonly referred to as 'Yu du', fish maw is in demand for its supposed medicinal benefits and for use as a tonic,³⁴ although scientific studies supporting these properties are lacking.

Fish maws are produced from a variety of species, with croaker species being the most popular. There are about 34 different types of fish maw; size, form and thickness are important for the price and also for the name used by traders. In general, larger and thicker swim bladders are more valuable as are those of certain species.³⁵ Maws from male fishes are more valuable than female maws, and those harvested in winter are also preferred.³⁶

The recent resurgence in the illegal trade in totoaba is thought to be connected to its perceived kinship to the giant yellow croaker or Chinese bahaba (*Bahaba taipingensis*), a highly valued sciaenid that has been overfished to such an extent it is listed as critically

endangered by the IUCN.³⁷ Both bahaba and totoaba are known as 'Jin Qian Min', meaning 'golden coin maw' or 'money maw' due to their high value, which is attributed to their rarity and alleged medicinal value. Their maws are distinguished by the length of their tubules, which are long in the totoaba and shorter in the bahaba maw. As bahaba maws rarely come to market, and those that do are usually older specimens, totoabas have replaced bahabas as the king of fish maws, leading to a massive increase in illegal fishing in Mexico.³⁸

Despite its critically endangered status, bahaba is only Class II protected species under Chinese law³⁹ which means fishing or catching it requires a licence.⁴⁰

BELOW:

Fish maw and other dried seafood products on sale in Hong Kong.

BOTTOM:

'Totoaba' fish maw offered for sale online. The advertisement describes the 'long-tubuled golden coin fish maw' as 'precious as gold, ideal for collection and gift'.



The screenshot shows a Taobao.com product page for '海华鱼胶' (Fish Gelatin). The product is described as '鱼胶之王 金钱鲨鱼胶 大须金钱鲨 贵如黄金 收藏珍藏送礼正品'. The price is listed as ¥14,000.00 (approximately USD 2,152.66). The seller is '金牌卖家' (Gold Medal Seller) '海华鱼胶', with a credit rating of '信誉: 月亮术士'. The product is available in '广东潮州' (Guangdong Chaozhou) and is shipped nationwide. The quantity is set to 1 piece, with 999 pieces in stock. The page includes a '立即购买' (Buy Now) button and a '加入购物车' (Add to Cart) button. The seller's profile shows a 4.9-star rating for description, service, and logistics. The page also features a search bar, navigation links, and a sidebar with '优惠券' (Coupons), '购物车' (Shopping Cart), and '看了又看' (Looked at again).

RECENT SEIZURES OF TOTOABA PRODUCTS



ABOVE:

This 6-9 year old maw was offered to EIA investigators for 80,000 RMB (almost \$12,400).

The majority of publicly reported seizures of totoaba swim bladders have occurred in the areas of the US and Mexico adjoining the Gulf of California, where the totoaba is found. There have been far fewer seizures in the main consumer markets of Hong Kong and mainland China:

- **In November 2015**, the Hong Kong Agriculture, Fisheries and Conservation Department (AFCD) issued summonses against the operators of two dried seafood shops for illegal possession of totoaba. Authorities carried out inspections of 150 marine product retailers in May 2015. Fourteen pieces of suspect fish maw were seized and later confirmed to be totoaba.⁴¹

- **In October 2015**, Mexican federal agencies reported the seizure of 543 totoaba fish as part of an ongoing operation against illegal fishing in the Sea of Cortez, resulting in 19 arrests.⁴²

- **In September 2015**, Mexican authorities discovered 22 kg of totoaba swim bladders concealed in a cooler box inside an abandoned vehicle.⁴³

- **In August 2015**, customs officers at Hong Kong airport detected three pieces of totoaba swim bladders in a transshipment cargo declared as corn flakes. The shipment originated in Mexico and was bound for mainland China. The contraband, weighing 0.6kg was valued at HK\$300,000 (\$38,700).⁴⁴

- **In July 2015**, Mexican federal police arrested three Chinese nationals attempting to smuggle 274 totoaba swim bladders, weighing 35kg, through Tijuana international airport en route to Shanghai.⁴⁵

- **In July 2015**, US customs agents in Puerto Rico seized 602kg of totoaba swim bladders discovered in a routine inspection at the Rafael Hernández International Airport. The shipment of nine courier parcels was sent by airfreight from Venezuela and was destined for Hong Kong. The consignment was labelled as organic plastic samples.⁴⁶

- **In July 2015**, a businessman based in Los Angeles pleaded guilty to smuggling

58 totoaba swim bladders as well as protected abalone. In 2013, he used his furniture company as a front to move the illicit marine products from Mexico into the US and on to a relative in China.⁴⁷

- **In November 2014**, Mexican enforcement agents seized 385 dried totoaba swim bladders contained in three packages sent from Mexicali in Baja California and bound for China.⁴⁸ In 2013 alone, Mexico seized totoaba swim bladders worth \$2.25 million.⁴⁹

- **In June 2013**, Jason Xie, resident of Sacramento, California, pleaded guilty to the illegal import of 270 totoaba swim bladders from Mexico. He admitted receiving the swim bladders in two separate consignments, hidden in cooler boxes under a layer of fish, and paying \$1,500 in Mexico for each swim bladder. The contraband was delivered to him in the town of Calexico, the nearest US port to the Gulf of California. As part of his sentence, Xie forfeited a house worth \$350,000 in Seattle bought with the profits from his totoaba smuggling activities. He received a four-month prison sentence and an order to pay the Mexican Government \$3m in restitution, the estimated value of the 270 swim bladders.⁵⁰

- **Between February and April 2013**, US customs agents in the port town of Calexico seized over 500 totoaba swim bladders, weighing 220kg. In one of these cases a vehicle driven by Song Shen Zhen was inspected at the Calexico border crossing and 27 dried totoaba swim bladders discovered hidden in plastic bags placed under floor mats. The items were confiscated and Song allowed to continue his journey but, unknown to him, customs agents followed his vehicle to a house in Calexico, which was being used as a totoaba processing factory. At the location, a further 214 swim bladders were discovered, a haul worth \$3.6m on the overseas black market, according to the US authorities. In 2014, Zhen was given a one-year prison sentence.⁵¹

EIA TOTOABA MARKET SURVEYS IN 2015

In May 2015, EIA conducted a survey of 23 fish maw retailers in Hong Kong and Guangzhou, China, and online research to ascertain the availability of illegal totoaba products on the market. The findings demonstrated that totoaba fish maws, or fish maws purported to be totoaba or 'golden coin' maw, were easily available, indicating a failure by enforcement agencies to curb their smuggling and sale.

In Guangzhou, EIA found golden coin maw openly on sale in six shops. Generally, traders were aware that totoaba sale is illegal, knew the fish are only found in Mexico and claimed that smuggling the contraband between Hong Kong and mainland China is easy, with customs agencies not routinely inspecting fish maw consignments. Hong Kong traders were more guarded, with only two shops displaying totoaba maw, but prices were higher than on the mainland. Despite this, the main buyers were found to be mainland Chinese due to the perceived higher quality of supplies from Hong Kong and the higher possibility of fakes in Guangzhou.

EIA's online research identified numerous platforms for fish maw trade, and significant consumer interest in totoaba maws. Some of these platforms were actively offering fish maw, including totoaba, for sale.

A sense of the global nature of the trade was provided by analysis of Facebook pages connecting fish maw traders and buyers from South America, Mexico, the US and Asia.

EIA's survey also uncovered a fall in the market price for totoaba maw since 2012 due to a spike in illegal trade causing oversupply in the market. While totoaba prices remain high compared with other fish maws, the decline from the record prices of a few years ago has led to stockpiling by traders hoping to push the price back up. One trader also spoke of a core group of "loyal" totoaba consumers who use the maw on a daily basis and were using the price drop to stock up.

During October and November 2015, EIA monitored online social media platforms which focus on fish maw trade. The main platforms tracked were Facebook groups with names such as "Fish Maw Emperor" and "Fish Maw Fans" as well as online chat groups. These forums provide useful insights into current trends in the totoaba trade in China and Hong Kong, and help identify some of the individuals actively involved.

In October, one trader posted a picture of a totoaba fish weighing 38kg he claimed to have bought for RMB50,000

BELOW:

Totoaba maws openly on sale in Guangzhou, China, May 2015.



“Totoaba traders are holding on to stock, banking on a future hike in price which will allow them to recoup their investment.”

(\$7,800). The monitoring also revealed active discussion of press articles in the Hong Kong media reporting the discovery of illegal totoaba products in two shops following a four-month investigation by local authorities and the fact that a journalist reported totoaba maw still being offered by retailers but no longer on open display in the territory.

Further monitoring in November yielded more insights into the totoaba business, with traders sharing information on locations where enforcement by the authorities was taking place and price trends. For example, one user posted information about a crossing point between Hong Kong and China where enhanced inspections were occurring, and recommended a different smuggling route. Another discussion revolved around the growing fish maw market among Chinese in Europe and the U.S. Other topics included the accidental purchase of fake totoaba swim bladders and price differences between various types of fish maw, with totoaba confirmed as still fetching the highest price.

The monitoring exercise uncovered one individual who was especially active in posting comments on totoaba fish maw. Referring to totoaba as the “extremely expensive king of the maws” and commenting on press articles about

totoaba trade in Hong Kong, he intimated that the trade in Hong Kong was dwarfed by the volume available on the mainland. He also added that some Chinese students studying in the US were involved in the totoaba trade.

A second onsite investigation in Guangdong in 2015 elicited further details of the trade. Investigators visited traders in the fishmarkets of Qingping and Yide Road markets in Guangzhou. Traders consistently reported a 60-80 per cent drop in totoaba maw value since 2012-13 due to oversupply in the market. On average, totoaba maws are worth about RMB16,000 per 100g (almost \$2,500), although the price is variable depending on the size, age and other parameters, with large (eg 500g) high quality maws still fetching as much as \$47,000 (\$9,400 per 100g). At the peak of the trade in 2012, such a maw would fetch well over \$155,000.

Some traders are still openly displaying totoaba maws; however many traders are reluctant to sell their stock. This may be due to the drastic fall in prices for totoaba maws rather than any enforcement measures carried out. Many traders are holding on to stock, banking on a future hike in price which will allow them to recoup their investment.

Totoaba maw display at press conference held by Greenpeace East Asia.



© Greenpeace / Sudhanshu Malhotra

In February and April 2015, investigators from Greenpeace East Asia visited about 70 dried seafood stores in Sheung Wan, Hong Kong, and identified at least 13 shops as potential sellers of totoaba fish maw, of which seven were able to show fish maw samples in the shop.⁵²

Traders agreed that the key downstream market was in China and that totoaba fish maws were ‘collection items’, and not for consumption. Greenpeace researchers were also told that totoaba, along with bird nests and codyceps, were popular gifts among Chinese businessmen in exchange for ‘*Guang Xi*’ (meaning relationship) with officials.

CONCLUSIONS AND RECOMMENDATIONS

The price of illegal totoaba maw peaked in 2012, and an oversupply has led to a significant devaluation in Hong Kong and mainland China markets. Despite this, totoaba maws are still considered 'king of the maws', fetching higher prices than other fish maws (along with the rare bahaba maw), and continued demand is expected into the future.

Traders in Guangzhou are holding on to available stock, and are likely seeking to control the release of maws on to the market to manipulate totoaba maw prices back to previous levels. If this strategy is successful, the increase in market value would generate a second wave of stock piling in totoaba maws, resulting in increased illegal fishing for totoaba in Mexico with devastating impacts on the vaquita.

The Government of Mexico has taken unprecedented steps to protect the vaquita and the totoaba, however additional measures are needed to support these efforts. These include: making the two-year gillnet ban permanent; increasing

enforcement capacity; and introducing additional enforcement measures such as the prohibition of possessing and transporting gillnets both at sea and on land. In addition, an accurate stock assessment of the totoaba is urgently required to inform conservation measures and facilitate appropriate action.

The Government of Mexico has appealed to the Parties to CITES to collaborate in efforts to enforce the Appendix I listing of totoaba.⁵³ CITES must now send an unequivocal message that the illegal trade in totoaba fish maw is threatening not just one, but two, critically endangered species, and that increased and sustained enforcement efforts are required.

EIA urges the Parties to CITES to adopt and swiftly implement the following recommendations to effectively combat the illegal totoaba trade:

Strengthen Enforcement Efforts

- Immediately increase intelligence-led enforcement efforts in the main markets for totoaba fish maw in Guangdong and Hong Kong, including increased surveillance of marine product markets, seizure of suspect fish maw products, arrests and prosecutions of offenders and closure of enterprises involved in the illegal trade;
- Analyse the potential for new markets for fish maw (e.g. in Europe and the US), conduct on-site monitoring in countries where fish maw is consumed to determine which species are involved in the trade, and share relevant information on the potential demand for totoaba fish maw. The import of fish maw can be tracked under its unique customs code, available since January 2015;
- Direct customs agencies to prioritise the interception of contraband fish maw and increase border inspections. Improvements to DNA analytical techniques and the dissemination of morphological identification materials for fish maw could assist in these efforts;
- Inform e-commerce websites of the need to monitor fish maw advertisements and auctions for products that could potentially be totoaba, take action to remove suspicious items and block code words typically used to describe totoaba fish maw. Fish maw sellers should be required to provide adequate product information (on species, source etc.) to demonstrate legality;

- Develop enforcement action plans with a view to eliminating the trade in totoaba, to include expertise from the scientific community, fish maw industry, civil society, logistics and courier companies and other stakeholders.

Increase Information Sharing, Cooperation and Awareness Raising

- Cooperate to map the trade chain from the Gulf of California to final destination and coordinate enforcement actions;
- Engage with social media websites, which are increasingly being used to trade in illegal wildlife products, to develop strategies to combat the sale of totoaba fish maw and other illegal wildlife products;
- Raise awareness of the plight of the vaquita and the totoaba in appropriate fora;
- Develop and adopt strategies to further reduce the market value of totoaba;
- Report to the CITES Secretariat on all measures taken in time for consideration at the 17th Conference of the Parties.

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