

Via Electronic Mail

April 1, 2021

Re: Mexico's New Fishing Regulations Applicable to CITES Totoaba and Vaquita Decisions 18.292-18.295

Dear Secretary-General Higuero,

On behalf of the Animal Welfare Institute, Center for Biological Diversity, the Natural Resources Defense Council, and the Environmental Investigation Agency, we write to provide information regarding new fishing regulations issued by Mexico to protect vaquita and totoaba in Mexico's northern Gulf of California and Mexico's continued enforcement failures.

As detailed below, Mexico's new regulations, published on September 24, 2020¹ and supplemented in January 2021, potentially offer the vaquita and totoaba important, new protections and are a substantial improvement from previous regulations. However, key components of the regulations remain unimplemented, and illegal fishing continues—a familiar pattern, as the Mexican government has a long history of issuing but not enforcing regulations. The IUCN recently described illegal fishing as “uncontrolled,” and the Mexican government is considering shrinking the area in which gillnets are currently banned.

The Mexican government has not yet demonstrated that the vaquita and totoaba are effectively protected. Mexico's continued failure to address the ongoing fishing and trade of totoaba and ongoing critical endangerment of the vaquita violates the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

Accordingly, we urge the Secretariat and Standing Committee to formally initiate compliance procedures under Resolution Conf. 14.3 and recommend sanctions against Mexico for its continued violation of CITES, to be discussed at the 73rd Standing Committee virtual meeting this spring, or no later than the Standing Committee meeting scheduled for September 2021.

At its 18th meeting, the CITES Conference of the Parties adopted Decisions 18.292 to 18.295 on totoaba (*Totoaba macdonaldi*). Among other things, those Decisions urged Mexico to do the following:

- a) take immediate and effective actions by 1 November 2019 in response to the threats to totoaba and vaquita posed by illegal trade;

¹ Diario Oficial de la Federación. *Acuerdo por el que se regulan artes, sistemas, métodos, técnicas y horarios para la realización de actividades de pesca con embarcaciones menores y mayores en Zonas Marinas Mexicanas en el Norte del Golfo de California y se establecen sitios de desembarque, así como el uso de sistemas de monitoreo para tales embarcaciones* (Sept. 24, 2020), available at http://www.dof.gob.mx/nota_detalle.php?codigo=5601153&fecha=24/09/2020; see also Ex. A: Legal Fishing Guide for The Upper Gulf of California.

- b) intensify and secure resources for expanding gillnet removal efforts to maintain the Vaquita Refuge area as a net-free zone, and take all necessary measures to protect net removal teams and destroy confiscated nets;
- c) adhere to the implementation of Decision 43 COM 7B.26, adopted at the 43rd session of the World Heritage Committee;² and
- d) submit a comprehensive report.

Decision 18.294 further directs the Secretariat to report on information submitted by the Parties and Mexico with any recommendations the Secretariat may have. Decision 18.295 then directs the Standing Committee, at its 73rd meeting, to review and assess relevant information and “make any appropriate recommendations within the mandate of the Standing Committee in accordance with Resolution Conf. 14.3 (Rev. CoP18) on CITES compliance procedures.”

We emphasize that nearly all of the actions recommended under Resolution Conf. 14.3 to foster compliance have already been completed: Mexico has been notified of its compliance issue, Mexico has provided numerous responses, and the Secretariat has conducted a fact-finding mission in Mexico. The Mexican government has had ample notice and time to remedy its CITES violations regarding totoaba and vaquita.

The vaquita, however, is running out of time, as only around nine individuals likely remain.³ We urge the Secretariat and the Standing Committee to recommend the “suspension of commercial . . . trade in specimens of . . . CITES-listed species,” as contemplated by Resolution Conf. 14.3. The vaquita will not survive continued delay, and the Mexican government has failed to heed CITES’s warnings and recommendations. In fact, the Mexican government only issued its September 2020 regulations in response to the U.S. government’s ban on seafood from the vaquita’s habitat.⁴ The Mexican government has demonstrated there is only one way to make it act: economic sanctions. Without the ultimate pressure from the CITES Parties, the vaquita will go extinct on your watch.

A. Mexico’s September 2020 Regulations

As with other regulatory and policy initiatives Mexico has taken, its 2020 regulations have the potential to offer totoaba and vaquita important protections from illegal fishing activities. The regulations prohibit the use and possession of gillnets, including gillnets made of monofilament or multifilament nylon, whether used actively or passively in the designated marine area (Art. 2(I)). The regulations also prohibit the transport of gillnets in and within 10 kilometers of the marine area (Art. 2(II)); prohibit manufacturing, owning, and sales of gillnets

² <https://whc.unesco.org/en/news/2010>.

³ Rojas-Bracho, L., B.L. Taylor, A. Jaramillo-Legorreta, P. Olson, D. Ruiz, E. Hidalgo, T. Gerrodette, and A. Henry. Survey report for Vaquita Photographic Identification Research 2019. Vaquita were detected acoustically in September 2020, confirming their continued presence. *Esfuerzo de Monitorización Acústica de Pequeña Escala para Identificar la Presencia de Vaquitas en el Alto Golfo de California* (Sept. 23, 2020).

⁴ U.S. National Oceanic and Atmospheric Administration, *Implementation of Fish and Fish Product Import Provisions of the Marine Mammal Protection Act—Notification of Revocation of Comparability Findings and Implementation of Import Restrictions; Certification of Admissibility for Certain Fish Products From Mexico*, 85 Fed. Reg. 13,626 (Mar. 9, 2020).

in towns around the marine area (Art. 2(III)); and require fishermen to surrender gillnets to authorities within 60 days (Art. 10).

The regulations further specify the types of gear that small vessels are permitted to use within the marine area (Art. 2). They prohibit night fishing (Art. 4) and require the installation and operation of vessel monitoring systems (Art. 6, 7). The regulations require all small vessels to be inspected before departure and upon arrival at one of eight designated sites (Art. 8, 9). They also prohibit transshipment in the marine area (Art. 11). We are encouraged that Mexico has adopted these provisions.

However, the adoption of these regulations is insufficient if they are not fully implemented and enforced. In that regard, we highlight several key concerns below.

1. The “Marine Area” Does Not Cover the Full Vaquita Habitat

Most of the provisions in Mexico’s new regulations apply within or immediately surrounding a designated marine area (Art. 1). However, this area does not cover the vaquita’s full range, which includes waters of the Upper Gulf north of a line running from Puertecitos (90 km south of San Felipe) to Puerto Lobos (94 km southwest of Caborca), thus, from the coast of Baja California to the Sonoran Coast (see Figure 1).⁵ Moreover, and of great concern, the Mexican government is now discussing a proposal to reduce the size of the area in which gillnets are prohibited.⁶

⁵ Numerous studies document vaquita sightings south to Puertocitos and on the Sonoran coast south of Puerto Peñasco. Gerrodette, T., Fleischer, L.A., Perez-Cortes, H. and Villa-Ramírez, B., 1995. Distribution of the vaquita, *Phocoena sinus*, based on sightings from systematic surveys. *R Int Whal Com (Spec Issue)*, 16, pp.273-281; Gerrodette, T., Taylor, B.L., Swift, R., Rankin, S., Jaramillo-Legorreta, A.M. and Rojas-Bracho, L., 2011. A combined visual and acoustic estimate of 2008 abundance, and change in abundance since 1997, for the vaquita, *Phocoena sinus*. *Marine Mammal Science*, 27(2), pp. E79-E100; Brownell Jr, R.L., 1986. Distribution of the vaquita, *Phocoena sinus*, in Mexican waters. *Marine Mammal Science*, 2(4), pp.299-305; Silber, G.K., 1990. Occurrence and distribution of the vaquita *Phocoena sinus* in the northern Gulf of California. *Fishery Bulletin*, 88(2), pp.339-346; Silber, G.K., Newcomer, M.W., Silber, P.C., Pérez-Cortés M, H. and Ellis, G.M., 1994. Cetaceans of the northern Gulf of California: distribution, occurrence, and relative abundance. *Marine Mammal Science*, 10(3), pp. 283-298.

⁶ Grupo Intragubernamental sobre la Sustentabilidad en el Alto Golfo de California, Instalación de la mesa técnica de medio ambiente (March 12, 2021) (meeting agenda with “Reduction of the Prohibition Area for all gillnets including ‘gillnets’ as the first point of discussion).

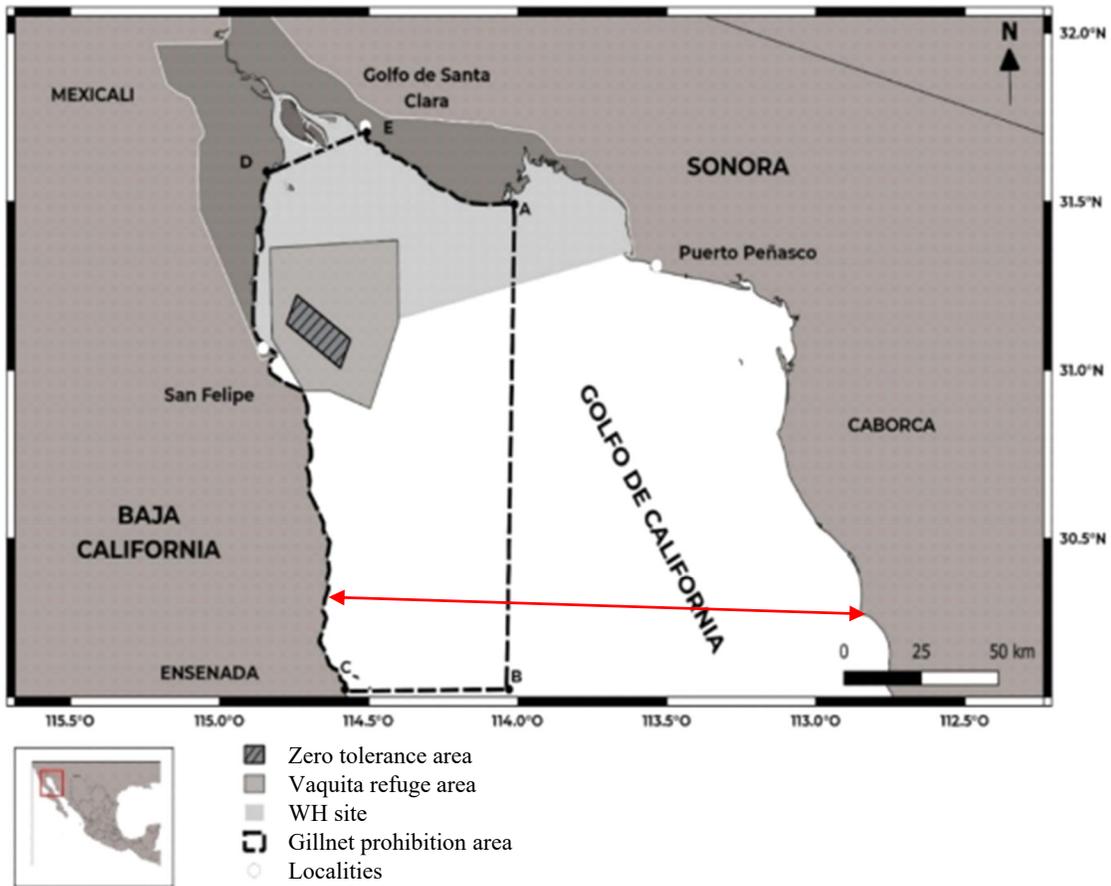


Figure 1. Marine Area within the Islands and Protected Areas of the Gulf of California World Heritage Site. The red line marks the gillnet embargo area.

2. Mexico Has Failed to Fully Implement its 2020 Regulations

Mexico has a history of promising but failing to adopt or implement regulatory programs to protect the vaquita and its habitat.⁷ In issuing its September 2020 regulations, the Mexican government committed to take a series of further actions to conserve the vaquita. But for each of these promises, the government either failed to meet its own regulatory deadline or entirely failed to follow-through on the commitment, as of the date of this submission.

a. Insufficient Application Plan

The Mexican government's 2020 regulations required an "Application Plan" to be issued in coordination with several Mexican agencies within 30 days of the regulation's publication, i.e.

⁷ See Cantú-Guzmán, J.C., Olivera-Bonilla, A., and Sánchez-Saldaña, M.E. 2015. A history (1990-2015) of mismanaging the vaquita into extinction – a Mexican NGO's perspective. *Journal of Marine Animals and Their Ecology*; 8(1): 15-25.

by October 24, 2020 (5th Transitory Article). The Application Plan is supposed to address inspection and surveillance, recovery and disposal of illegal and lost gear, and additional conservation measures. The Mexican government has not yet issued a plan that meets these requirements. While it did issue a plan on January 20, 2021, nearly three months late, the proposal is vague and primarily delineates which agencies are charged with particular functions related to the vaquita.⁸ While there has long been a need to clarify the various Mexican agencies' functions, the agencies' duties identified in the Plan overlap, and many of the duties are vague and lack timeframes (e.g., directing agencies to “hold . . . meetings” and “participate . . . in inspection and monitoring”). Moreover, the plan entirely fails to address “actions for the recovery, disposal and recycling . . . of illegal” or lost gear, as required by the 2020 regulations.⁹

b. Lack of triggers

Critically, to ensure compliance with the fishing closures and gillnet ban, the September regulations also require that relevant agencies “develop . . . triggering factors, defined as “those situations identified by means of quantitative measures . . . which if exceeded will result in predetermined actions by authorities, such as prohibitions on fishing, closures of areas or similar responses” (Art. 17). The regulations require the agencies to publish the triggering factors, their duration, scope, and a mechanism for implementing the triggers by October 24, 2020. The Mexican government has failed to meet this directive, as to date, no triggers have been published.¹⁰

c. Vague compliance working groups

The regulations further promise the creation of two compliance working groups. The “Intragovernmental Group on Sustainability” (GIS) is directed to analyze, coordinate, and evaluate the agreement and was to be established simultaneously with the September regulations (6th Transitory Article). A separate “Collaboration Group on Application” (GCAL) is directed to facilitate the exchange of information on illegal fishing, totoaba trafficking, and prosecutions and was to be established within 30 days (7th Transitory Article). It is unclear when the GIS was established, but Mexican agencies published “Guidelines for the organization and function” of the GIS on January 20, 2021.¹¹ It also is unclear whether the Collaboration Group has been established or is intended to meet with or within the GIS.

⁸ Diario Oficial de la Federación. *Application Plan in the Zero Tolerance Zone and the Refuge Area for the Protection of the Vaquita* (Jan. 20, 2021), available at http://dof.gob.mx/nota_detalle.php?codigo=5610105&fecha=20/01/2021.

⁹ *Id.*

¹⁰ Freedom of Information Request number 0819800027220. Letter RJL/INAPESCA/DG/DJ/UT/046/2021, dated in Mexico City, January 20, 2021.

¹¹ Diario Oficial de la Federación. *LINEAMIENTOS para la organización y funciones del Grupo Intragubernamental sobre la sustentabilidad en el Alto Golfo de California*. (Jan. 15, 2021), available at http://dof.gob.mx/nota_detalle.php?codigo=5609927&fecha=15/01/2021.

The first GIS meeting was initially planned to take place in January but was then postponed to February 26, 2021,¹² five months after the regulation's publication. In its press release regarding the first GIS meeting, SEMAR acknowledged that a much-anticipated reform of the Federal Penal Code to make environmental crimes a serious violation—and thereby allow preventative detention and increase both prison time and penalties—has not yet passed and is under review by the Senate.¹³

d. Marine mammal interaction reporting

The regulations further direct the Comisión Nacional de Acuacultura y Pesca (“Conapesca”) to publish a form and mechanism so fishermen can report marine mammal interactions (Art. 5). Conapesca has failed to publish any form or mechanism. Without instructions on how or where to report entanglements and bycatch, it is unlikely fishermen are reporting these events—information that is critical to knowing how much vaquita bycatch continues.

e. Gillnet surrender

The regulations required all permit holders, captains, and fishermen to deliver any gillnets to the Conapesca office closest to where their vessel is registered by November 23, 2020 (Art. 10), as the regulations ban possession of such gillnets near vaquita habitat. In response to a public information request for how many nets it had received, Conapesca stated that it had no responsive information as of February 3, 2021,¹ suggesting it had no nets had been turned over.

f. Gear marking

The regulations also direct Conapesca to develop and implement a gear marking scheme within 18 months of the regulation's publication (2nd Transitory Article). Given the delay of all other actions the regulations require, we are concerned the Mexican government will similarly fail to meet this commitment.

In sum, while we welcomed Mexico's publication of its September regulations and appreciate that the Mexican government now has taken some steps to meet the regulations' requirements, these actions were quite delayed, and the government has failed to follow through on essential commitments. We are very concerned that the current plans and promised future actions lack the detail necessary to ensure fisheries' vaquita bycatch and illegal totoaba poaching will be halted, and thus will fail to save the vaquita and totoaba from extinction.

3. Mexico's Vessel Monitoring System Is Not Currently Operative

The regulations require that all vessels install and operate vessel monitoring systems (Art. 6, 7); however, Mexico's system for monitoring the resulting data is not currently

¹² Secretariat of the Navy. Press release. Actions of the Government of Mexico in the Upper Gulf of California. February 20, 2021, available at <https://www.gob.mx/semar/prensa/acciones-del-gobierno-de-mexico-en-el-alto-golfo-de-california-264317>.

¹³ *Id.*

operative. According to an article published by *Excelsior*, Mexico missed several years of payments to Pelagic Data Systems (“PDS”), a vessel tracking company, and consequently, Mexico does not have access to the monitoring data.¹⁴ Indeed, the minutes from a recent meeting between fishermen and Mexican authorities confirm “the satellite monitoring system that the registered small vessels have . . . is not currently in service.”¹⁵ The lack of vessel monitoring undermines the efficacy of the new regulations because Mexico cannot track compliance.

Even if Mexico had access to the vessel-tracking data, that information is not reliable. In 2019, PDS had installed 937 monitoring devices on vessels in Upper Gulf.¹⁶ However, by November 2019, 189 of these registered PDS devices—approximately 20 percent—provided data indicating they had been removed from the vessel.¹⁷ Further, between November 2019 and June 2020, another 22 devices showed similar signs of having been removed.¹⁸ It is unknown how many devices are currently fully operational.

Despite this, the Mexican government has not taken enforcement action; instead it only “established communication with the cooperatives and/or licensees, to notify them first as a good faith gesture, about the anomalies recorded in the Pelagic Data Systems regarding their vessels, so that they will take corrective actions necessary, in order for the fishermen operating these vessels to avoid any irregularity.”¹⁹ Mexico’s new regulations cannot succeed if the government does not monitor compliance and ensure that monitoring devices are both present and operational. Mexico must pay for and use monitoring data to ensure that vessels comply with time and area management requirements.

B. Mexico’s Enforcement Failures

While we welcome the issuance of Mexico’s new regulations, the government has not demonstrated that its new regulations have or will effectively reduce vaquita bycatch or totoaba poaching. In fact, evidence shows Mexico has entirely failed to enforce its new regulations since

¹⁴ Ernesto Méndez, *Gobierno prohíbe uso de redes de pesca tradicionales en hábitat de vaquita marina*, EXCELSIOR, Sept. 23, 2020, available at <https://www.excelsior.com.mx/nacional/gobierno-prohibe-uso-de-redes-de-pesca-tradicionales-en-habitat-de-vaquita-marina/1407345>. According to a 2017, 2021 Excelsior interview with Alejandro Castillo of ProNatura that small vessel monitoring still needed to be reactivated. Ernesto Méndez, *Sin condiciones para reducir polígono de protección de vaquita marina*, EXCELSIOR, Mar. 17, 2021, available at <https://www.excelsior.com.mx/nacional/sin-condiciones-para-reducir-poligono-de-proteccion-de-vaquita-marina/1438204>

¹⁵ Meeting between fishermen representatives and government officials, Minuta de Trabajo (Sept. 30, 2020), available at shorturl.at/uAM28

¹⁶ There were 454 devices installed in Gulf of Santa Clara in Sonora, and 342 in San Felipe, 47 in Bajo Río, and 94 in the Cucapá Indigenous Community in Baja California

¹⁷ The system detects when the devices are damaged or removed because they do not transmit anymore. Report on actions for the protection and conservation of the vaquita porpoise and the totoaba. Government of Mexico. November 2009. Convention on International Trade in Endangered Species of Wild Fauna and Flora CITES. In: STATE OF CONSERVATION REPORT Islands and Protected Areas of the Gulf of California (2005, Ref. 1182ter), available at <https://whc.unesco.org/document/180672>.

¹⁸ Conapesca Response to Information Request No. 0819700022020 (June 20, 2020), available at shorturl.at/mxGQX.

¹⁹ *Id.*

they were issued in September 2020. We strongly urge the Parties to look beyond the text of Mexico’s new regulations and continue to press Mexico to do more to save the vaquita. There is no evidence enforcement has improved since the Parties began reviewing Mexico’s compliance with CITES.

1. Mexico’s History of Non-Enforcement

The Mexican government has a long and troubling history of failing to enforce vaquita protections. In 1993, in response to the vaquita’s decline, Mexico declared the Upper Gulf a Biosphere Reserve and claimed the government was “enforcing the closure of all commercial fisheries in the reserve.”²⁰ Yet scientists concluded these early efforts were “ineffectual” and “half-hearted, at best,”²¹ and “[c]ommercial fishing with a variety of gill nets . . . continued without interruption both inside and outside the Biosphere Reserve.”²²

In 2005, Mexico established a refuge area for the vaquita and again attempted to ban certain gillnets.²³ But again, enforcement was lax, as the new “Refuge Area remained essentially unmanaged until 2008,” when a new program was instituted officially banning all gillnets in the area.²⁴ Initially, Mexican enforcement authorities made a “strong effort” to enforce the new ban, but “that effort . . . waned,” and illegal fishing continued.²⁵

In 2013, in yet another effort to restrict gillnet fishing, Mexico formally banned the use of the “chinchorro” gillnet used to catch shrimp in the Upper Gulf.²⁶ By 2014, the Comité Internacional para la Recuperación de la Vaquita (“CIRVA”) reported that only 97 vaquita remained, despite Mexico’s two decades of regulation, numerous bans, and multiple protective areas.²⁷ CIRVA stated that Mexico’s “at-sea enforcement efforts ha[d] failed, and illegal fishing ha[d] increased . . . throughout the range of the vaquita.”²⁸

In 2015, Mexico instituted a temporary, two-year ban on most gillnets within vaquita habitat, although it exempted the curvina gillnet fishery. Almost immediately, it became clear the

²⁰ Rojas-Bracho, L., Reeves, R.R., & Jaramillo-Legorreta, A. 2006. Conservation of the vaquita *Phocoena sinus*. *Mammal Rev.* 36:179-216.

²¹ Rojas-Bracho, L. & R.R. Reeves. 2013. Vaquitas and Gillnets: Mexico’s ultimate cetacean conservation challenge. *Endang. Species Res.* 21:77-87 (2013).

²² Rojas-Bracho (2006).

²³ Rojas-Bracho (2013).

²⁴ *Id.*

²⁵ *Id.*

²⁶ Letter from R. Garcia Soto, Attorney, SAGARPA, to John Hendershedt, NMFS (Dec. 6, 2017).

According to the terms of the Official Mexican Standard NOM-002-SAG / PESC-2013 on shrimp, the ban was to be phased in over a three-year period, with zero usage of the *chinchorro* by 2016. However, it was reported that CONAPESCA continued to issue *chinchorro* permits in 2013 that were valid through 2017. Vaquita Marina: The decline of species due to government neglect. August 2017 report by the Center for Biological Diversity, COMARINO, Defenders of Wildlife, Greenpeace, and Teyeliz, at page 7. Available at https://www.greenpeace.org/static/planet4-mexico-stateless/2018/11/135a68b1-135a68b1-report-e-vaquita-version_ingles.pdf

²⁷ Report of the Fifth Meeting of the International Committee for the Recovery of the Vaquita. Ensenada, Baja California, July 8–10, 2014.

²⁸ *Id.*

ban and its enforcement were ineffective, as the vaquita population plummeted to only around 30 animals by November 2016.²⁹ CIRVA concluded that “illegal fishing [wa]s still common” and that “enforcement efforts to date have been insufficient.”³⁰

In July 2017, under immense international pressure, Mexico made its gillnet ban in the Upper Gulf permanent but again exempted the curvina and sierra fisheries. In January 2018, CIRVA concluded *once again* that “[h]igh levels of illegal fishing continue” based on more net retrieval sweeps that found active totoaba, shrimp, and curvina gillnets in the vaquita refuge.³¹

By early 2019, CIRVA concluded that “only about 10 vaquitas remained alive” as illegal fishing continued.³² In April 2019, a Mexican newspaper and television channel, *Excelsior*, produced a three-part expose on the vaquita and illegal fishing in the Upper Gulf, shown nationally across Mexico and published in a major Mexican newspaper.³³ The *Excelsior* team interviewed and documented fishermen setting illegal gillnets for both shrimp and totoaba in broad daylight. In October 2019, scientists reported observing 87 boats in a single day within the Zero Tolerance Area, as well as the use of gillnets 1-km long.³⁴ In December 2019, the Sea Shepherd Conservation Society reported sighting around 80 small boats setting and retrieving illegal gillnets in vaquita habitat in a single day.³⁵

²⁹ Eighth Meeting of the Comité Internacional para la Recuperación de la Vaquita, La Jolla, CA, Nov. 29–30, 2016.

³⁰ *Id.*

³¹ Report of the Tenth Meeting of the Comité Internacional para la Recuperación de la Vaquita, La Jolla, CA, Dec. 11–12, 2017.

³² Report of the Eleventh Meeting of the Comité Internacional para la Recuperación de la Vaquita. La Jolla, CA, Feb. 19–21, 2019.

³³ See *Excelsior* television report (in Spanish) available here: Part 1: <https://www.youtube.com/watch?v=75lyFoMCDyI>; Part 2: <https://www.youtube.com/watch?v=stxX9CYi0Mw>; Part 3: <https://www.youtube.com/watch?v=nUzY9-asO78>. The newspaper articles (also in Spanish) are available here: Part 1: <https://www.excelsior.com.mx/nacional/vaquita-marina-cronica-de-una-extincion-anunciada-1-de-3/1307832>; Part 2: <https://www.excelsior.com.mx/nacional/vaquita-marina-cronica-de-una-extincion-anunciada-2-de-3/1307907>; Part 3: <https://www.excelsior.com.mx/nacional/vaquita-marina-cronica-de-una-extincion-anunciada-3-de-3/1308023>.

³⁴ Rojas-Bracho, L., B.L. Taylor, A. Jaramillo-Legorreta, P. Olson, D. Ruiz, E. Hidalgo, T. Gerrodette, and A. Henry. Survey report for Vaquita Photographic Identification Research 2019, at Appendix 3; see also SCS, *Expedition Sights Endangered Vaquita Porpoise and Rampant Fishing Inside Biosphere Reserve* (Oct. 23, 2019) (reporting mass violations the same day, including “dozens of skiffs ... retrieving prohibited gillnets mainly for shrimp, chano and corvina” within the vaquita Zero Tolerance Zone, including within sight of a vaquita); Atahualpa Garibay, *Detectan embarcaciones sospechosas en zona de vaquita marina en Baja California*, *Heraldo de México*, (Oct. 25, 2019) (reporting that authorities detected around 35 small vessels fishing for shrimp and using prohibited nets in the vaquita marina protected area), available at <https://heraldodemexico.com.mx/nacional/2019/10/25/detectan-embarcaciones-sospechosas-en-zona-de-vaquita-marina-en-baja-california-127846.html>.

³⁵ SCS, *Sea Shepherd Reveals Unbridled Poaching as 80 Skiffs Raid Habitat of Critically Endangered Vaquita Porpoise* (Dec. 9, 2019).

2. Mexico's failure to enforce its September 2020 regulations

While Mexico's September 2020 regulations mark an improvement in Mexican regulation of shrimp and other legal fisheries, Mexico has failed to enforce the new regulations. Following the regulations' issuance, the head of the fishermen's federation in San Felipe, Lorenzo Garcia, stated that shrimpers used prohibited gillnets the very next day.³⁶ While Mr. Garcia noted that Mexican authorities tried to persuade fishermen not to go to sea, authorities did not threaten enforcement action. Indeed, according to local fishermen, they had no notice that these regulations would be published or information on their contents, despite having had meetings with authorities on the issue.³⁷

Violations of the gillnet fishing ban have continued at shocking levels since September. In December 2020, the IUCN Cetacean Specialist Group ("IUCN CSG") published data demonstrating that "illegal fishing remains at high levels and takes place day and night."³⁸ The IUCN CSG included three maps documenting illegal fishing activities in October 2020 at the onset of the shrimp season (Figure 2), November 2020 (Figure 3), and December 2020 (Figure 4). The maps depict hundreds of pangas—most fishing with gillnets—within the Zero Tolerance Area, where both gillnetting and transit of any vessels are strictly prohibited to protect the vaquita.

According to the IUCN CSG, a total of 1,185 pangas were counted throughout November 2020, with nearly all these pangas gillnetting for shrimp.³⁹ Based on these data, the IUCN CSG concluded that "[f]ishermen have no incentives to change their traditional fishing practices—very little alternative fishing gear, and few alternative livelihoods to feed their families" and that "[i]llegal fishing remains uncontrolled."⁴⁰

These data demonstrate that, despite Mexico's promises, regulatory improvements, and pages of submissions to the Secretariat, the same fact remains: Mexico has failed to halt gillnet fishing in the vaquita's habitat.

³⁶ *Baja shrimp fishermen defy rules designed to save vaquita*. MEXICO DAILY (Sept. 28, 2020), <https://mexiconewsdaily.com/news/baja-shrimp-fishermen-defy-rules-designed-to-save-vaquita/>.

³⁷ *Minuta de Trabajo* (Sept. 30, 2020). Several fishermen cooperatives have filed a legal challenge to the new regulations. In one case, [Expediente 790/2020-2 Juzgado primero de distrito en el estado de Baja California] the plaintiffs asked the court to invalidate multiple provisions of the regulations. In a preliminary ruling, however, the court only suspended a single provision – the requirement to turn over gillnets to the authorities – but made clear that this decision only applies to plaintiffs and that it does not permit them to use said gillnets to fish. [Expediente 790/2020-2 Juzgado primero de distrito en el estado de Baja California]. This case and others remain pending and, depending on the outcome of each, the regulations could be weakened or entirely invalidated.

³⁸ IUCN Cetacean Specialist Group, *Vaquita update October through December 2020*. Available at: <https://iucn-csg.org/vaquita-update-october-through-december-2020/>.

³⁹ While gillnetting clearly continues to illegally harvest shrimp, totoaba gillnetting also continues. In January 2021, authorities detected a 350-meter-long illegally set gillnet containing 13 totoaba, seven of which were dead. *See* <https://www.dossierpolitico.com/vernoticiasanteriores.php?artid=245273&relacion=&tipo=Noticias&categoria=1>. Such isolated enforcement actions do not address the extent of illegal fishing.

⁴⁰ IUCN *Vaquita Update*; *see also* Ex. B: IUCN SSC Letter re *Vaquita Threats* (Mar. 26, 2021).

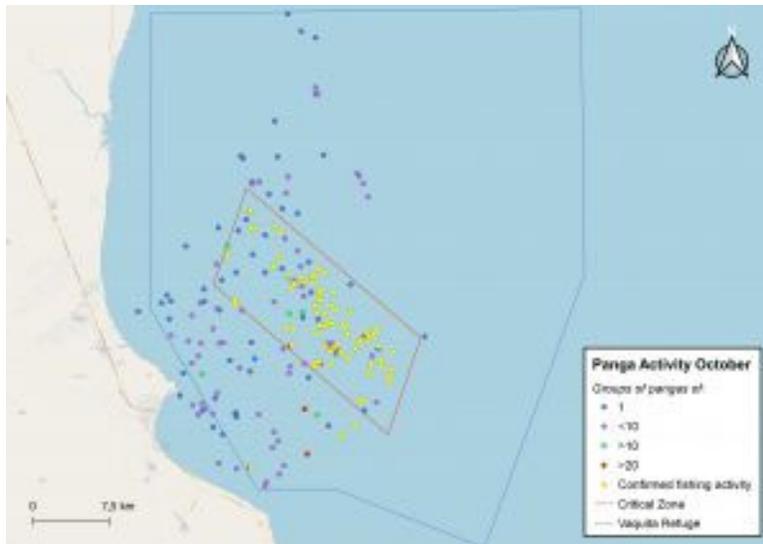


Figure 2. Panga positions in October 2020, with each color⁴¹ representing the approximate number of pangas observed from the survey vessel at a given time and location. Yellow dots indicate individual pangas that were confirmed to be fishing. The SSCS effort was concentrated in the ZTA (outlined in red but labeled as the ‘Critical Zone’ in the map legend).
 Source: Sea Shepherd Conservation Society Internal Reports, October 2020.

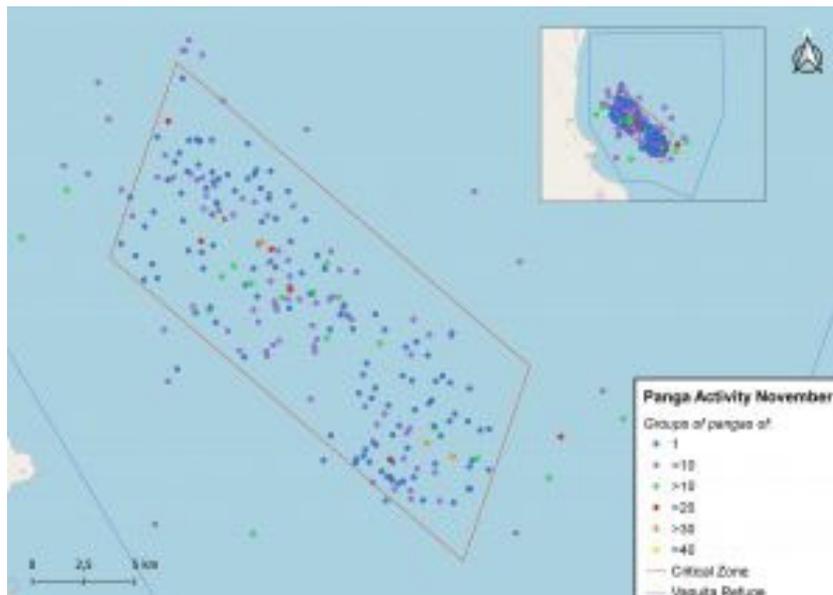


Figure 3. Panga positions in November 2020, with each color representing the approximate number of pangas observed at a given time. The effort by net-removal vessels that reported panga positions was concentrated in the ZTA (outlined in red but labeled as the ‘Critical Zone’ in the map legend).
 Source: Sea Shepherd Conservation Society Internal Reports, November 2020.

⁴¹ In each of the figures, blue, purple, green, and red dots correspond to one, less than 10, more than 10, and more than 20 pangas, respectively.

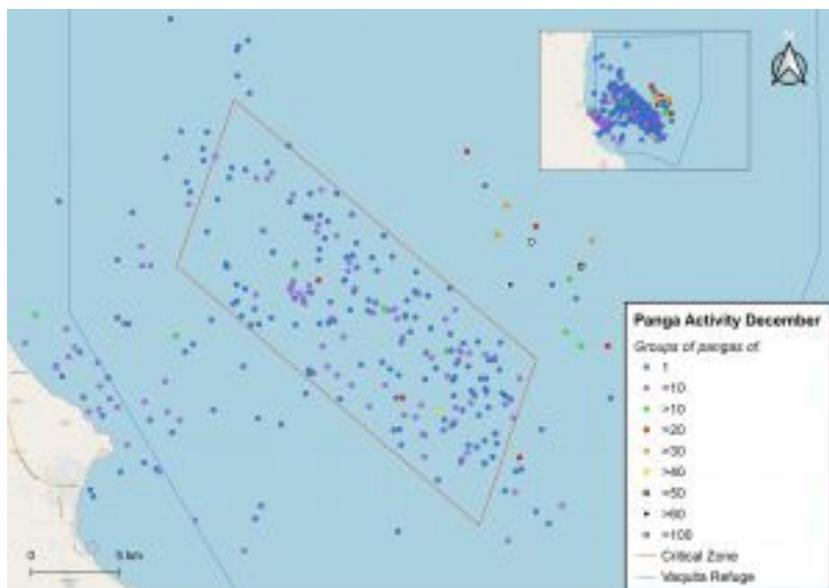


Figure 4. Panga positions in December 2020, with each color representing the approximate number of pangas observed at a given time. The effort was concentrated in the ZTA (outlined in red but labeled as the ‘Critical Zone’ in the map legend), but fishing was observed widely in the Vaquita Refuge (inset). Source: Sea Shepherd Conservation Society Internal Reports, December 2020.

If anything, fishers have become more brazen in their efforts to continue illegal fishing, not only doing so in broad daylight, but also attacking those engaged in patrolling the area and removing illegal fishing nets. On 31 December 2020, fishermen in 5–7 pangas violently attacked two Sea Shepherd Conservation Society vessels, the *Farley Mowat* and *Sharpie*, inside the Zero Tolerance Area, launching lead weights and Molotov cocktails at the crew and military officials on board.⁴² One panga swerved in front of the *Farley Mowat*, which was attempting to leave the area, striking the larger ship, destroying the panga, and throwing the fishermen into the sea. The crew of the *Sharpie* immediately rescued the fishermen, and its medical personnel, along with medics from the Mexican Navy, provided medical care prior to their transport to medical facilities. During the rescue, two fishermen illegally boarded the *Sharpie* and threatened its crew and Mexican officials while other fishermen in pangas continued to throw projectiles and fuel at the ship, ultimately causing its bow and the recovered illegal fishing gear to catch fire.⁴³ Onshore, other assailants set fire to a Sea Shepherd truck.⁴⁴ Tragically, one of the rescued fishermen died from his injuries several days after the incident.

We note that, in November of 2020, Mr. Sunshine Antonio Rodriguez Peña, a well-known fishermen representative from San Felipe, Baja California, and seven others were taken into custody on charges of racketeering and organized crime related to totoaba trafficking.⁴⁵ For

⁴² See, <https://seashepherd.org/2021/01/01/collision-at-sea-as-sea-shepherd-vessels-attacked-in-mexicos-vaquita-refuge/>.

⁴³ *Id.*

⁴⁴ *Id.*

⁴⁵ *Van a proceso 6 pescadores detenidos en hábitat de vaquita marina*. Excélsior. Nov, 17, 2020.

years, Mr. Rodríguez Peña had posted regularly on Facebook documenting his and others' illegal use of gillnets to catch shrimp, sierra, and curvina near San Felipe, which is prohibited under the new regulations. In December 2020, it was reported that President López Obrador had instructed the Secretary of the Navy, Admiral José Rafael Ojeda Durán, to review Mr. Rodríguez Peña's case.⁴⁶ While we applaud this long-overdue enforcement action, high levels of illegal fishing continue, and much more enforcement is needed.

The failure to enforce the gillnet prohibition in the Upper Gulf is indicative of a systemic problem in Mexico to responsibly manage and enforce its fishing regulations, as highlighted in a September 2020 assessment by Vanda Felbab-Brown of the Brookings Institute:

Fisheries management and enforcement in Mexico involves a complex and mostly ineffective tangle of institutions that tend to be under resourced, susceptible to corruption, and engage in buck-passing. . . . Well-meaning and dedicated officers get easily disheartened by the rock-bottom slashed budgets the López Obrador administration imposed, hollowing out already critically weak management, inspection, enforcement capacities—an institutional morass.⁴⁷

This institutional morass has contributed to illegal fishing accounting for between 45 and 90 percent of official fish production in Mexico.⁴⁸ Moreover, the problem is not limited to illegal fishing as enforcement failures are common throughout the seafood supply chain in Mexico. Yozell (2020), in a Stimson Center report analyzing the implementation of the U.S. Seafood Import Monitoring Program (SIMP), found as follows:

According to Stimson interviews with government, NGO, and industry stakeholders in Mexico, there are several steps along the seafood supply chain where information required for SIMP and verified by the Mexican government can be falsified, duplicated, or left unverified. Government capacity, reporting, and documentation have proven to be the main challenges for SIMP implementation in Mexico; and these challenges are clearest in the small-scale fishing sector. These findings stand in contrast to NOAA's initial statements to Stimson that there have been no major issues in Mexico as interviews with stakeholders on the ground revealed that there have been several key gaps for SIMP implementation in the country.⁴⁹

<https://www.excelsior.com.mx/nacional/van-a-proceso-6-pescadores-detenidos-en-habitat-de-vaquita-marina/1417384> Two suspects were subsequently released due to lack of evidence. To date, Mr. Rodríguez Peña remains in custody.

⁴⁶ *AMLO instruye al titular de Marina revisar caso de Sunshine Rodríguez, presunto líder del Cártel del Mar*. EL UNIVERSAL. Dec. 2, 2020. Available at <https://www.eluniversal.com.mx/nacion/amlo-instruye-al-titular-de-marina-revisar-caso-de-sunshine-rodriguez-presunto-lider-del>

⁴⁷ See <https://www.brookings.edu/blog/order-from-chaos/2020/09/14/illegal-fishing-in-mexico-and-policy-responses/>.

⁴⁸ *Id.*

⁴⁹ Yozell. 2020. A Qualitative Assessment of SIMP Implementation in Four Countries. Stimson Centre Report. Available at: <https://www.stimson.org/wp-content/uploads/2020/02/Stimson-Final-Traceability-Report.pdf>.

Fundamental solutions to mitigate the scope of illegal fishing, solutions that have been repeatedly suggested (and mirror recommendations made by the CITES Parties) but never substantively implemented by Mexico, include:⁵⁰

- Relentless detection and prosecution of all persons/entities engaged in illegal fishing with escalating fines that are multiples of the value of the illegal catch;
- Acquisition and implementation of better technologies including aerial, land, and marine water drones and other sensors to monitor fishing/fisher activities;
- Improve coordination among Mexican agencies (e.g., CONAPESCA, CONANP, PROFEPA, SEMAR, federal/state/municipal police forces, national guards, and customs) to share intelligence and data and to strengthen enforcement investigations and prosecutions;
- Enhance collaboration with counterparts in the United States including with the U.S. Fish and Wildlife Service, US customs agency, and government prosecutors;
- Address the needs of fishers by helping them adopt sustainable fishing practices, use ecologically low-impact fishing gear, and develop alternative livelihoods—none of which has, to date, succeeded in the Upper Gulf.

Felbab-Brown cautions, however, that such improvements will not succeed unless there is “better resourcing of environmental management and protection agencies.”⁵¹ She opines that “[a]s long as the López Obrador administration starves them of budgets, better environmental, fishery sustainability, and rule-of-law results won’t follow.”⁵²

A lack of resources is preventing coordinated, meaningful, and sustained efforts to prevent illegal fishing and protect the vaquita and totoaba. *Excélsior*, a respected media organization in Mexico City, recently reported, after a review of government reports about the recently-concluded shrimp season in the Upper Gulf, that a lack of resources, planning, logistics, and knowledge among senior officials of PROFEPA has led to “[lo]s nulos resultados” or zero results in the protection of the vaquita and efforts to combat the illegal trafficking of totoaba.⁵³ Specifically, PROFEPA’s low budget is used inappropriately and for improvised actions which yield no results. In November and December 2020, the 19 federal inspectors brought in to support local authorities in the Upper Gulf were unable to prevent unlawful conduct as no small vessels were available for their use “because there was not enough money for fuel.”⁵⁴ This prevented efforts to stop illegal fishing on, for example, November 11, 2020, when there were 60 pangas simultaneously engaged in illegal fishing inside the vaquita Zero Tolerance Area.

Furthermore, there are no towboats or four-wheeled drive vehicles available to conduct beach patrols. There are also no accommodations for PROFEPA officials to stay overnight in the area and no office space for PROFEPA since their facilities in San Felipe and Santa Clara were

⁵⁰ See, <https://www.brookings.edu/blog/order-from-chaos/2020/09/14/illegal-fishing-in-mexico-and-policy-responses/>

⁵¹ *Id.*

⁵² *Id.*

⁵³ See, <https://www.excelsior.com.mx/nacional/sin-recursos-ni-estrategia-profepa-enfrenta-extincion-de-vaquita-marina/1434816> (English translation)

⁵⁴ *Id.*

attacked by fishers and set on fire in 2018 and 2019, respectively, and have not been rebuilt.⁵⁵ The former PROFEPA coordinator for San Felipe also sent personnel to assist with inspecting vehicles on the road to Mexicali despite the Ministry of National Defense having sufficient personnel to conduct the checks.⁵⁶

The lack of any coherent strategy to address monitor legal fisheries, curtail the extent of illegal fishing, and enforce fishing prohibitions in the Upper Gulf was highlighted in the February 26, 2021 GIS meeting between government officials, fishers, industry representatives, politicians, and others. Mr. Ramón Franco, a representative of the organized fishermen of San Felipe, noted how “everyone sees how in broad daylight illegals operate in total impunity.”⁵⁷ Carlos Tirado, the leader of the fishing cooperatives in Golfo de Santa Clara and Golfo de Sonora, asked, “[w]hen will there be a real strategy from the federal government and industry to find a solution, because as of today, February 26th, it does not exist?”⁵⁸ Tirado also noted that, despite the prohibition on using gear that had been promulgated in September 2020, the government had failed to provide alternatives to the communities.⁵⁹ No new meaningful or substantive strategies that were not already underway or that are common sense (e.g., information sharing) came out of the meeting.

Indeed, instead of promising strict enforcement of its fishing laws, the Secretary of Environment and Natural Resources, María Luisa Albores González, indicated that the government was considering modifying the gillnet prohibition area by reducing the size of the vaquita refuge given the reduced distribution of vaquita.⁶⁰ This decision, if implemented, effectively rewards poachers for their illegal actions by increasing fishing opportunities (including for those who fish illegally) and dismisses the blatant incompetency of the government agencies that failed to enforce the law.

!

While the record of Mexican authorities to stop illegal fishing has been abysmal, illegal net-recovery efforts have continued and some totoaba swim bladders have been seized. During a five-month period between 2019 and 2020, 163 and 104 pieces of illegal fishing gear were recovered from the water and on land, respectively, and 18 authorities opened investigations involving the seizure of 797 totoaba buches.⁶¹ Such actions, while welcome, provide further evidence of the failure to stop illegal fishing from occurring and will not produce a behavioral change in a timeframe capable of saving the vaquita. The corresponding economic damage to the environment is estimated to be nearly 164 million pesos (nearly 8 million USD).⁶²

⁵⁵ *Id.*

⁵⁶ *Id.*

⁵⁷ See, <https://www.excelsior.com.mx/nacional/gobierno-llego-a-reunion-sin-estrategia-para-habitat-de-vaquita-marina-pescadores/1435014>

⁵⁸ *Id.*

⁵⁹ *Id.*

⁶⁰ See, <https://www.gob.mx/conapesca/articulos/gobierno-de-mexico-acuerda-fortalecer-las-acciones-y-el-dialogo-para-lograr-el-desarrollo-del-alto-golfo-de-california-265142?idiom=es>

⁶¹ See, <https://www.infobae.com/america/mexico/2021/02/21/danos-ambientales-en-zona-de-la-vaquita-marina-ascienden-a-163-millones-de-pesos-semar/>

⁶² *Id.*

CONCLUSION

We recognize the importance of Mexico updating its regulations to align them with the critical status of the vaquita. The new regulations, if enforced, have the potential to reduce totoaba poaching and vaquita bycatch. However, because Mexico has not fully implemented the regulations and has utterly failed to enforce the regulations, Mexico has not made “timely progress in the implementation of Decisions 18.292 and 18.293.” Decision 18.295(b). Therefore, the Standing Committee should “make any appropriate recommendations ... in accordance with Res. Conf. 14.3 (Rev. CoP18) on CITES compliance procedures.” We request that the Secretariat and the Standing Committee consider this information in their ongoing efforts to implement Decisions 18.292-18.295 and recommend, given the perilous status of the vaquita, that Parties suspend commercial trade in specimens of CITES-listed species, as contemplated by Resolution Conf. 14.3.

We welcome the opportunity to discuss this issue with you and would be happy to answer any questions you may have.

Sincerely,

Zak Smith
Senior Attorney & Director, International
Wildlife Conservation
Natural Resources Defense Council
317 E Mendenhall Street, Suite D
Bozeman, MT 59715
zsmith@nrdc.org

Sarah Uhlemann
International Program Director and
Senior Attorney
Alex Olivera
Senior Scientist
Center for Biological Diversity
2400 NW 80th Street, #146
Seattle, WA 98117
suhlemann@biologicaldiversity.org

D.J. Schubert, Wildlife Biologist
Kate O’Connell, Marine Wildlife Consultant
Animal Welfare Institute
900 Pennsylvania Avenue SE
Washington, DC 20003
dj@awionline.org
kate.oconnell@balaena.org

Clare Perry
Ocean and Climate Campaign Leader

Environmental Investigation Agency (EIA)
62-63 Upper Street, London N1 0NY
clareperry@eia-international.org

CC via email:

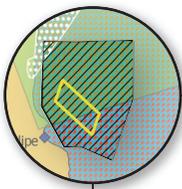
Ms. Carolina Caceres, Chair, CITES Standing Committee

Mr. Tom De Meulenaer, Chief, Scientific Services, CITES Secretariat

Mr. Ben Janse van Rensburg, Chief, Enforcement Support, CITES Secretariat

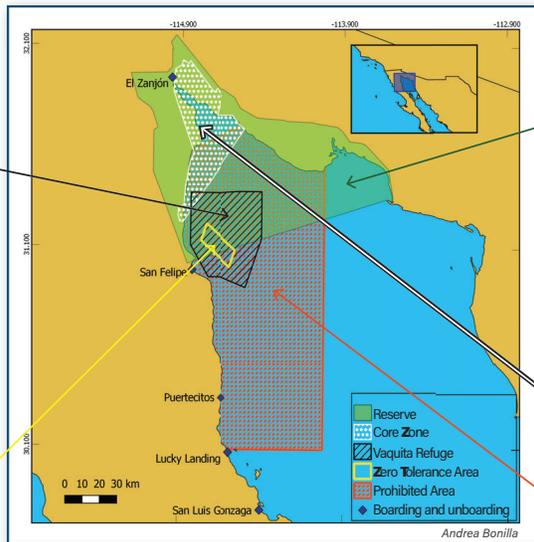
Exhibit A

Legal Fishing Guide for The Upper Gulf of California



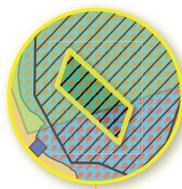
Vaquita Marine Refuge Area (BLACK ZONE)

NO fishing with nets of any type in the northern portion that lies within the Biosphere Reserve (green area). In the southern part, outside the Zero Tolerance Area, **YES** suripera-equipped boats, hooklines, longlines, traps, and hooka diving



California Upper Gulf and Colorado River Delta Biosphere Reserve (GREEN ZONE)

YES Small trawl in the green-shaded portion of the BR buffer zone that is outside the Vaquita Refuge.
YES fishing with gillnets, including driftnets, authorized (registered and marked according to the tagging program) in the buffer zone of the reserve that is outside the gillnet prohibition area (East Adair Bay/ north of Puerto Peñasco). But **NO** fixed, passive, stretched, or sleeping nets.
NO collecting of fish for keeping as pets.
YES Temporary fishermen camping in "Campo el Zanjón", "El Tornillal", "El Tornillalito" y "Los Pinitos"
NO camping in the Montague and Pelicano islands.

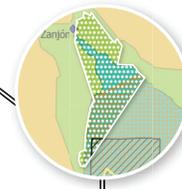


Zero Tolerance Area (YELLOW ZONE)

TRANSIT AND FISHING OF ANY KIND IS PROHIBITED.

Gillnet Prohibited Area (ORANGE ZONE)

NO fishing with gillnets, including driftnets, passive nor active nor encircling.
NO possessing, selling, or transporting gillnets in areas 10 km around the prohibited area.
NO fishing between 4 pm and 5 am.
NO transportation of fishing products.
YES trawl nets, suripera-equipped boats, hooklines, longlines, traps and free or semi autonomous diving with hooks. Different gear restrictions apply inside the protected areas (Green, Black, Yellow and White zones).
YES informing Conapesca of any interaction with marine mammals.
YES having a monitoring system installed and working.
YES removing of illegal and ghost fishing gear, by authorities in collaboration with other sectors.



Biosphere Reserve Core Zone (WHITE ZONE)

NO FISHING IN THE CORE ZONE (Montague/Gore and Pelicano islands, La Ramada estuaries and shallow channels and zones in front of the town of El Golfo de Santa Clara, Punta Zacatosa and El Chinero.)

SHRIMP



- YES** using trawl nets with DEP and DET
- YES** using suripera-equipped boats.
- NO** fishing in the core zone or in the Vaquita marine refuge area.

GULF CORVINA



- NO** fishing in the core zone or in the Vaquita marine refuge area.
- Minimum capture size: 65 cm. of total length.

In the Orange zone:

- NO** fishing with gillnets, including driftnets.
- YES** fishing with permitted gear, such as handlines.
- NO** fishing with nets through the encircling system (except Cucapá native community).
- NO** fishing between 4 pm and 5 am.

Outside of the Orange zone:

- YES** fishing with authorized nets. Only one net per vessel.

FINFISH



- NO** fishing in the core zone or in the Vaquita marine refuge area.
- Fishing gear and measures that are established in the permit. **Watch out!** Within the gillnet prohibition area (orange zone) it is only possible to fish with trawl nets, suriperas, fishing line, longlines, traps and free or semi-autonomous diving with hooka.
- NO** fishing Sierra fish with encircling method (except Cucapá native community).

SOME INFRACTIONS

- Fishing without concession or permit.
- Fishing with prohibited fishing gear or methods.
- Fishing during prohibited hours.
- Not having satellite monitoring equipment or having manipulated it.
- Not using the fishing binnacle/logbook or falsifying information.
- Catching species with a size or weight below minimum.
- Replacing the holder of a fishing concession or permit without Conapesca's authorization or fishing with different vessels than those authorized.

SOME CRIMES

- Capturing, damaging or killing marine turtles or mammals (vaquitas, dolphins, whales, sea lions, or others) or collecting/storing their products or by-products.
- Capturing, transforming, collecting, transporting, destroying or trading abalone, shrimp, sea cucumber and lobster, within or outside the closed fishing seasons, without the corresponding authorization, in quantities that exceed 10 kilograms.
- Fishing or capturing a wildlife species with a non-permitted method (including non-fishing methods)
- Trafficking, capturing, possessing, transporting, damaging, introducing or taking specimens from the country, including products or by-products of wildlife species which are at risk or are in closed fishing season.

IF FOUND FISHING SPECIES DURING THE CLOSED FISHING SEASON WITHIN THE RESERVE:

- Penalty of up to 12 years in prison, and a fine, plus possible confiscation of boats, fishing gear, products, suspensions or revocation of a fishing permit, etc.

Content Research:



Elaborated on:
March 22, 2020



Donors:



Exhibit B

(Original submitted in Spanish)

Almirante José Rafael Ojeda Durán
Secretario de Marina (srio@semar.gob.mx)

Víctor Manuel Villalobos Arámbula
Secretario de Agricultura y Desarrollo Rural (victor.villalobos@sader.gob.mx)

María Luisa Albores Gonzáles
Secretaria de Medio Ambiente y Recursos Naturales (secretaria@semarnat.gob.mx)

26 March 2021

Your excellences, Secretaries Ojeda Durán, Villalobos Arámbula and Albores Gonzáles,

The IUCN Species Survival Commission has for many years voiced concern over the precarious situation of vaquitas. With a 99% decline over the past decade and a population now numbering only about 10 individuals, vaquitas are our highest priority. Recent news coverage has suggested several threats to vaquitas that are well known not to be threats. I wish to put these alleged threats to rest quickly so that meaningful actions to address the only immediate threat to this species, namely accidental mortality in gillnets, can be addressed. Scientific evidence to refute the allegations is given in the Annex.

The vaquita is a 3 million-year-old species found only in the far northern Gulf of California, and it has persisted at relatively low abundance for at least the last 200,000 years (Morin *et al.* 2020). Thanks to the high-quality research led and published by CONANP scientists, the scientific community widely accepts that unsustainable mortality in gillnets (set for shrimp, totoaba and other finfish) is *the* cause of the vaquita's rapid decline (Rojas-Bracho and Taylor 1999; Rojas-Bracho, Reeves and Jaramillo-Legorreta, 2006; Rojas-Bracho and Reeves, 2013; Jaramillo-Legorreta *et al.* 2017, Thomas *et al.* 2018; Jaramillo-Legorreta *et al.* 2019). There is no reason to seek an alternative explanation for the vaquita's unprecedented decline. No emaciated vaquitas have been observed, either alive or dead (Gulland *et al.* 2020). Individuals seen recently, including calves, appear robust (Taylor *et al.* 2019). There is every reason to believe that if vaquitas were immediately protected from gillnets, throughout the species' range and particularly in what is called the Zero Tolerance Area (ZTA), the population could recover.

Totoaba nets are in the water right now, and more are being set. The first priority to save vaquitas must be to remove these nets, with a strong focus on the ZTA. Three capable ships and crew of the NGOs *Museo de la Ballena y Ciencias del Mar* and the *Sea Shepherd Conservation Society* that could be removing nets as they have done in past years are standing by and ready to resume this critical activity to support the Government of Mexico.

Deeply respectfully, I urge the Government of Mexico to support this critical activity without further delay as the totoaba spawning season is reaching its peak.

More science is always welcome, but the presently critical situation facing vaquitas requires that resources be devoted to actions dealing directly with gillnet entanglement, focusing on the small area where vaquitas are known to survive.

Sincerely,



Jon Paul Rodríguez, Ph.D.
Chair, IUCN Species Survival Commission

cc.

- Contralmirante C.G. DEM. Martín Enrique Barney Montalvo, Comandante del Sector Naval de San Felipe, BC. (navfel@semar.gob.mx)
- Bernardino Jesús Muñoz Reséndez, Encargado de Despacho de la Comisión Nacional de Acuicultura y Pesca (bernardino.munoz@conapesca.gob.mx)
- Pablo Roberto Arenas Fuentes, Director General, Instituto Nacional de Pesca y Acuicultura (pablo.arenas@inapesca.gob.mx)
- Blanca Alicia Mendoza Vera, Procuradora Federal de Protección al Ambiente (blanca.mendoza@profepa.gob.mx)
- Roberto Aviña Carlín, Comisionado Nacional de Áreas Naturales Protegidas (roberto.carlin@conanp.gob.mx)
- Iván Rico López, Titular de la Unidad Coordinadora de Asuntos Internacionales, SEMARNAT (ivan.rico@semarnat.gob.mx)

Annex

Evidence to refute the recent allegations concerning threats is as follows:

- Allegation 1: Cessation of flow of the Colorado River resulted in the vaquita's decline because it is adapted to be an estuarine species
 1. The portion of the Upper Gulf known to be vaquita habitat has likely never had the sustained or widespread brackish-water conditions of a year-round estuary (Brusca *et al.* 2017, Rojas-Bracho *et al.* 2019). Cessation of river flow is a controversial issue and there is certainly more to be learned about the ecological effects (Flessa *et al.* 2019). However, as noted by Flessa *et al.*, "Restoring the flow of the Colorado to the Gulf will not save the vaquita. Enforcing a gillnet ban is necessary to save this iconic species."
 2. The assertion that vaquita mortality is increased by up to 50% because the animals expend energy from osmoregulation and thermoregulation, due to the change in conditions from estuary to marine, has no scientific basis. Marine mammals are adapted to filter and quickly eliminate the high amount of salt in their oceanic habitat. All marine mammals examined to date produce urine that is at least as concentrated as seawater (1000 mosM), and most are capable of doing much better than this (Costa 2018). To date there is no evidence that vaquitas are in anyway maladapted to their current habitat. Animals are healthy and females produce calves.
 3. All vaquitas examined to date have appeared healthy, with no signs of being nutritionally stressed.
 4. The precipitous decline in vaquitas began long after the damming of the river and the timing of the decline matches an unprecedented intensification of fishing with large-mesh gillnets in the heart of the species' range.
- Allegation 2: Presence of white sharks has increased because the disappearance of estuarine conditions opens this habitat to them and they can now prey on vaquitas
 1. Sharks, in general, can tolerate a range of salinities (Cramp *et al.* 2015; Morash *et al.* 2016; Curtis *et al.* 2011). While information on salinity tolerance is limited for white sharks, tracking data show that, across age classes, they can move deep into estuaries and inhabit regions of low salinity (Harasti *et al.* 2017, P. Butcher pers. Com.). Tagged white sharks in the northeastern Pacific were detected in a range of measured salinities between 25-30 ppt (S. Jorgensen pers. com.). Thus, it is unlikely that white sharks would have previously avoided vaquita habitat due low salinity associated with riverine output.
 2. White sharks do not start targeting marine mammals until they are ~ 9 years and older (Klimley 1985). Of the 100s of sub-adult and adult sharks tagged in the northeastern Pacific, only a few have been documented in the Upper Gulf, in vaquita habitat (MarineCSI.org; Jorgensen *et al.* 2010; Domeier and Nasby-Lucas 2013; Dewar *et al.* 2013).
 3. The tagged sharks that have traveled to the Upper Gulf were females and they only remained for ~1 month during the shark pupping season, which is biennial for individual sharks (Domeier and Nasby-Lucas 2013).
 4. Given points 2 and 3, the abundance of large white sharks in the Upper Gulf is expected to be very low, both now and in the past.

5. It is well known that there is broad spatial separation between white shark nursery and foraging grounds. Conditions in the Upper Gulf are consistent with those associated with white shark nursery grounds and not foraging grounds (Klimley 1985, Dewar *et al.* 2013, White *et al.* 2019; Shaw *et al.* 2021). Juvenile white sharks prefer shallow bottoms where they forage primarily on fish and smaller elasmobranchs (Klimley 1985; Shaw *et al.* 2021).
- Allegation 3: Pollutants, including those associated with local gold mining, caused the vaquita's decline.
 1. Detailed examination of 9 vaquita carcasses from 2016-2018 revealed lesions and full stomachs, both features that are consistent with gillnet entanglement (Gulland *et al.* 2020). Also, the 3 carcasses examined for pollutants had low levels compared to other marine mammals. No saxitoxin or domoic acid was detected.
 2. Mercury is very toxic and can bioaccumulate in marine organisms. However, demethylation and selenium binding may protect marine mammals against acute toxicity (Kershaw and Hall 2019). Fish, fisheries and fishers would be affected if mercury were pervasive in the Upper Gulf.

References

Personal communications

Dr. Paul Butcher (paul.butcher@dpi.nsw.gov.au)
 Dr. Salvador Jorgensen (salvador.jorgensen@gmail.com)

Literature

- Brusca, R. C., Álvarez-Borrego, S., Hastings, P. A., and Findley, L. T. (2017). Colorado River flow and biological productivity in the Northern Gulf of California, Mexico. *Earth-Science Reviews* 164, 1-30.
- Costa DP. 2018. Osmoregulation. Pp. 659-664 in, Würsig BJ, Thewissen GM, Kovacs KM (eds.), *Encyclopedia of Marine Mammals*. Third Edition. Academic Press, New York.
- Cramp RL, Hansen MJ, Franklin CE. Osmoregulation by juvenile brown-banded bamboo sharks, *Chiloscyllium punctatum*, in hypo- and hyper-saline waters. *Comparative Biochemistry and Physiology Part A: Molecular & Integrative Physiology*. 2015 Jul 1; 185:107-14.
- Curtis TH, Adams DH, Burgess GH. Seasonal distribution and habitat associations of bull sharks in the Indian River Lagoon, Florida: a 30-year synthesis. *Transactions of the American Fisheries Society*. 2011 Sep 1; 140(5):1213-26.
- Flessa, K.W., L.E. Calderon, C.E. Cintra-Buenostro, D.L. Dettman, G.P. Dietl, D.H. Goodwin, D.K. Jacobs, M. Kowalewski, S.M. Nelson, K. Rowel, B.R. Schone, J.A. Smith, and F. Zamora-Arroyo. 2019. Comment on Rojas-Bracho and Colleagues (2019): Unsubstantiated claims can lead to tragic conservation outcomes. *Bioscience* 5:321.
- Dewar H, Eguchi T, Hyde J, Kinzey DH, Kohin S, Moore J, Taylor BL, Vetter R. Status review of the northeastern Pacific population of white sharks (*Carcharodon carcharias*) under the Endangered Species Act. 2013 NOAA-TM-NMFSSWFSC-523.
- Domeier ML, Nasby-Lucas N. Two-year migration of adult female white sharks (*Carcharodon carcharias*) reveals widely separated nursery areas and conservation concerns. *Animal Biotelemetry*. 2013 Dec; 1(1):1-0.

- Gulland, F., Danil, K., Bolton, J., Ylitalo, G., Okrucky, R. S., Rebolledo, F., Alexander-Beloch, C., Brownell, R. L., Mesnick, S., Lefebvre, K., and Smith, C. R. (2020). Vaquitas (*Phocoena sinus*) continue to die from bycatch not pollutants. *The Veterinary Record* 187, e51. <http://dx.doi.org/10.1136/vr.105949>.
- Harasti D, Lee K, Bruce B, Gallen C, Bradford R. Juvenile white sharks *Carcharodon carcharias* use estuarine environments in south-eastern Australia. *Marine biology*. 2017 Mar 1;164(3):58.
- Jaramillo-Legorreta, A., Cardenas-Hinojosa, G., Nieto-Garcia, E., Rojas-Bracho, L., Ver Hoef, J., Moore, J., ... and Taylor, B. (2017). Passive acoustic monitoring of the decline of Mexico's critically endangered vaquita. *Conservation Biology* 31, 183-191. <https://doi.org/10.1111/cobi.12789>.
- Jaramillo-Legorreta, A.M., Cardenas-Hinojosa, G., Nieto-Garcia, E., Rojas-Bracho, L., Thomas, L., Ver Hoef, J.M., Moore, J., Taylor, B., Barlow, J. and Tregenza, N. (2019). Decline towards extinction of Mexico's vaquita porpoise (*Phocoena sinus*). *Royal Society Open Science* 6, 190598. <https://doi.org/10.1098/rsos.190598>.
- Jorgensen SJ, Reeb CA, Chapple TK, Anderson S, Perle C, Van Sommeran SR, Fritz-Cope C, Brown AC, Klimley AP, Block BA. Philopatry and migration of Pacific white sharks. *Proceedings of the Royal Society B: Biological Sciences*. 2010 Mar 7; 277(1682):679-88.
- Kershaw, J.L and A.J. Hall. 2019. Mercury in cetaceans: Exposure, bioaccumulation and toxicity. *Science of the Total Environment* 694(1):133683
- Klimley, A. P. The areal distribution and autecology of the white shark, *Carcharodon carcharias*, off the West Coast of North America. *Memoirs of the Southern California Academy of Sciences*. 1985, 9:15 - 40.
- Klimley AP. The predatory behavior of the white shark. *American Scientist*. 1994 Mar 1;82(2):122-33.
- Morash AJ, Mackellar SR, Tunnah L, Barnett DA, Stehfest KM, Semmens JM, Currie S. Pass the salt: physiological consequences of ecologically relevant hyposmotic exposure in juvenile gummy sharks (*Mustelus antarcticus*) and school sharks (*Galeorhinus galeus*). *Conservation physiology*. 2016 Jan 1;4(1):cow036.
- Morin, P.A., F.I. Archer, C.D. Avila, J.R. Balacco, Y.V. Bukhman, W. Chow, O. Fedrigo, G. Formenti, J.A. Fronczek, A. Fungtammasan, F.M.D. Gulland, B. Hasse, M.P. Heide-Jorgensen, M.L. Houck, K. Howe, A.C. Misuraca, J. Mountcastle, W. Musser, S. Paez, S. Pelan, A. Phillipy, A. Rhie, J. Robinson, L. Rojas-Bracho, T.K. Rowles, O.A. Ryder, C.R. Smith, S. Stevenson, B.L. Taylor, J. Teilmann, J. Torrance, R.S. Wells, A.J. Westgate, E.D. Jarvis. 2020. Reference genome and demographic history of the most endangered marine mammal, the vaquita. *Molecular Ecology Resources*. DOI: 10.1111/1755-0998.13284.
- Rojas-Bracho L. and B. L. Taylor. 1999. Risk factors affecting vaquita (*Phocoena sinus*). *Marine Mammal Science* 15:974-989.
- Rojas-Bracho, L., Reeves, R.R. and Jaramillo-Legorreta, A. (2006). Conservation of the vaquita *Phocoena sinus*. *Mammal Review* 36, 179-216. <https://doi.org/10.1111/j.1365-2907.2006.00088.x>.
- Rojas-Bracho, L., and Reeves, R. R. (2013). Vaquitas and gillnets: Mexico's ultimate cetacean conservation challenge. *Endangered Species Research* 21, 77-87. <https://doi.org/10.3354/esr00501>
- Rojas-Bracho, L., Brusca, R. C., Álvarez-Borrego, S., Brownell Jr, R. L., Camacho-Ibar, V., Ceballos, G., and Jaramillo-Legorreta, A. M. (2019). Unsubstantiated claims can lead to tragic conservation outcomes. *BioScience* 69, 12-14. <https://doi.org/10.1093/biosci/biy138>.
- Shaw R, Curtis T, Metzger G, McCallister M, Ajemian M. 3D Movement and Habitat Preferences of Young-of-the-Year White Sharks in the Northwest Atlantic Ocean. *Front. Mar. Sci.*, 22 March 2021 | <https://doi.org/10.3389/fmars.2021.643831>

Taylor, B.L., Wells, R.S., Olson, P.A., Brownell Jr, R.L., Gulland, F.M., Read, A.J., Valverde-Esparza, F.J., Ortiz-García, O.H., Ruiz-Sabio, D., Jaramillo-Legorreta, A.M. and Nieto-Garcia, E., (2019). Likely annual calving in the vaquita, *Phocoena sinus*: A new hope? *Marine Mammal Science* 35, 603-1612.

Thomas, L., Jaramillo-Legorreta, A., Cardenas-Hinojosa, G., Nieto-Garcia, E., Rojas-Bracho, L., Ver Hoef, J. M., Moore, J., Taylor, B., Barlow, J., and Tregenza, N. (2017). Last call: Passive acoustic monitoring shows continued rapid decline of critically endangered vaquita. *Journal of the Acoustical Society of America* 142, e512-517. <https://doi.org/10.1121/1.5011673>.

White CF, Lyons K, Jorgensen SJ, O'Sullivan J, Winkler C, Weng KC, Lowe CG. Quantifying habitat selection and variability in habitat suitability for juvenile white sharks. *PloS one*. 2019 May 8;14(5):e0214642.