Mexican Fisheries and the U.S. MMPA Imports Rule[1]

May 12, 2022

I. Executive Summary

With over 10,000 km of coastline, Mexico has a substantial fishing industry. The United States is Mexico's largest seafood export market, with 55% of the total value of Mexican seafood exports going to the United States.[2] According to the National Marine Fisheries Service (NMFS), Mexico exported over 90 million kilograms of edible seafood to the U.S. in 2020, worth over $615 million.[3] Tuna, shrimp, sardines, and snapper are among Mexico's largest U.S. seafood exports, both by volume and value.

Mexican waters are also highly biodiverse, and fishing gear entanglement threatens numerous species, including Mexico's gravely imperiled vaquita. Bycatch occurs in Mexican fisheries, particularly in gillnets, which are commonly used in the northern and central Gulf of California and Gulf of Mexico.

Under the U.S. Marine Mammal Protection Act (MMPA), the U.S. government "shall ban" all seafood imports caught with fishing gear that kills or seriously injures marine mammals "in excess of United States standards."[4] To implement this requirement, NMFS issued the MMPA Imports Rule,[5] setting out standards that nations must demonstrate to continue exporting fish to the United States after December 31, 2022. Under the Rule, Mexico must apply for and receive a "comparability finding" from NMFS, which is essentially a determination that Mexico's bycatch and bycatch program meets U.S. standards.[6]

This report provides a brief assessment of Mexico's export fisheries, its marine mammal populations, potential bycatch issues and Mexico's legal regime related to bycatch, as applied to the MMPA Imports Rule. We conclude Mexico will be unable to demonstrate that it meets the requirements of the MMPA Imports Rule, and thus Mexico should face a ban for most of its export fisheries.[7] It is unlikely that Mexico will be able to demonstrate numerous components of the Rule: Mexico does not conduct marine mammal surveys for stocks affected by export fisheries; does not maintain regulatory requirements for bycatch, including requiring reporting, mitigation measures or bycatch monitoring in almost any export fisheries; and is unlikely to be able to show its bycatch does not exceed an acceptable bycatch limit. Even if Mexico's regulatory program was adequate on paper, illegal fishing is rampant within the nation. As such,

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[2] Source: pescandodatos.org The data is provided by Causa Natura A.C. through the National Platform for Transparency (PNT) of the National Institute for Transparency, Access to Information and Protection of Personal Data (INAI).
[3] NOAA Fisheries, Trade Statistics: Mexico Exports for 2020. Available at: https://www.fisheries.noaa.gov/foss/f?p=215:2:12466706978785::NO:::.
[4] 16 U.S.C. § 1371(a)(2).
[5] 81 Fed. Reg. 54,415 (Aug. 16, 2016).
[6] 50 C.F.R. § 216.24(h)(6).
[7] NMFS has already deemed Mexico's regulatory program governing fisheries operating in the Upper Gulf of California as not comparable and has banned seafood imports from those fisheries. 85 Fed. Reg. 13,626 (Mar. 9, 2020). As described throughout this assessment and our previous submissions to NMFS, we urge NMFS to maintain this ban.

Mexico will be unable to demonstrate that marine mammal serious injury and mortality from its export fisheries does not exceed a scientifically supportable bycatch limit, and a ban on most Mexican seafood exports is appropriate.

II. Map of Mexico's Exclusive Economic Zone

Mexico's Exclusive Economic Zone (EEZ) is located in the Pacific Ocean, Gulf of California and Gulf of Mexico. It borders with Guatemala, Belize and Honduras to the south, Cuba to the east and the United States to the north.

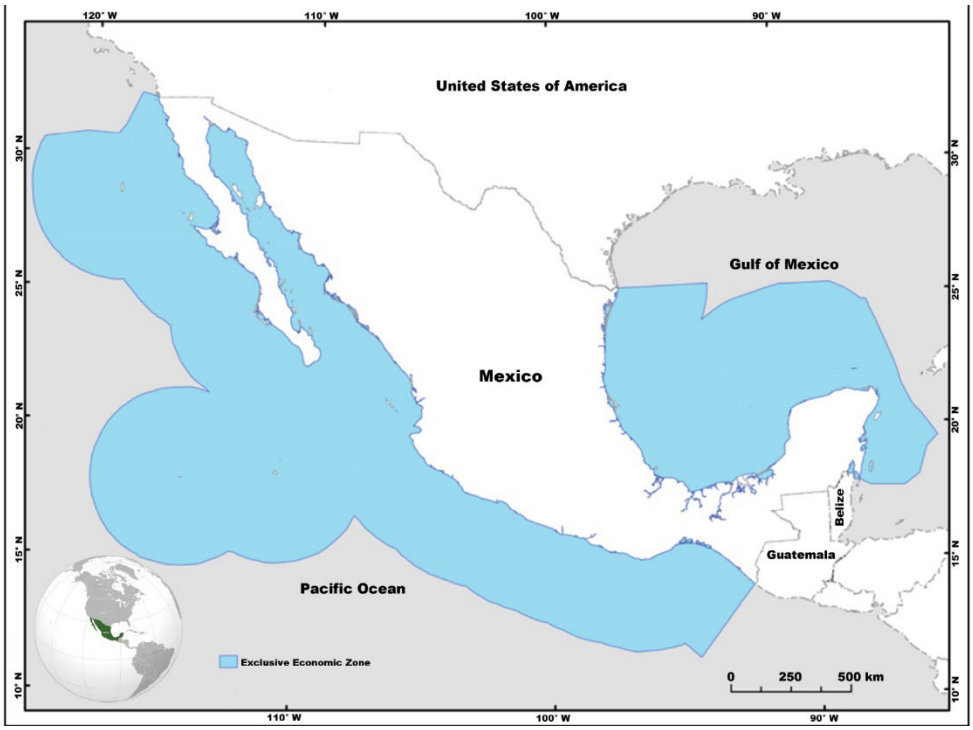

Figure 1. Mexico´s EEZ. Map showing the EEZ of Mexico. The zone comprises, including islands and territorial sea, approximately 3,150,000 km2. Modified from CONABIO (2011), available at: http://www.conabio.gob.mx/informacion/gis/layouts/contdv250_zeemgw.png

III. Mexico's Fishing Industry and Export Fisheries

The main species caught in Mexican fisheries are small pelagic species (sardines, anchovies and mackerel) accounting for 47% of volume caught, tuna with 8%, shrimp with 7% and mojarra with 6% of the total. However, by value of production, the main species are shrimp with 38%, mojarra and tuna with 9% each, and finally octopus and lobster with 3% each.[8]

The primary Mexican states producing seafood from 2015 to 2020 were Sonora, Sinaloa, Baja California and Baja California Sur, in the Gulf of California. More than 90% of the production

[8] Hernández-Trejo, V. (2019). Análisis de componentes principales para exportaciones pesqueras de México. Estudios recientes sobre economía ambiental y agrícola en México, 25.

has been for human consumption. In 2019, there were 213,246 people who worked directly in the Mexican fishing industry, of which 25,590 (12%) were women and 187,655 (88%) men.[9]

Regarding exports from the fishing sector, Mexico ranks as the 30th and 26th largest seafood exporter worldwide in terms of value and volume, respectively. The value of exports for fishing in Mexico is about 1.1 billion dollars with a total export volume of 284,495,000 tons. The species/products with the highest export value are: fish flour (46%), tuna (9%), shrimp (7%), squid, fish oil and fats and sardines and mackerel (6% each).[10]

The main shipments of fish flour were to China with 53,166 tons; United States, 15,441; Canada, 12,877; Taiwan, 10,712, and Japan, 4,517 tons. Exports of oils went to Denmark, 9,535 tons; Canada, 4,986; Chile, 4,529; Belgium, 3,574, and Guatemala, 1,074 million tons.[11]

The main countries to which Mexico exports seafood products are in the first place the United States with 31% of the volume, China with 16%; Japan with 6%; and Spain with 5%. Regarding value, the United States is by far the primary export country with 51% of the value.[12]

Table I. Top U.S. imports from Mexico by volume since 2019[13]

Year	Product Name	Volume (kg)	Value (USD)
2020	TUNA ALBACORE IN ATC (OTHER) NOT IN OIL OVER QUOTA	9,780,095	28,659,876
2020	FISH, SHELLFISH MEAL UNFIT FOR HUMAN CONSUMPTION	8,424,000	10,143,119
2020	SARDINE, SARDINELLA, BRISLING, SPRAT FROZEN	5,993,812	3,077,244
2020	SNAPPER (LUTJANIDAE SPP.) FRESH	5,943,418	44,569,473
2020	TUNA NSPF IN ATC (OTHER) NOT IN OIL OVER QUOTA	5,616,199	17,974,789
2020	SHRIMP WARM-WATER SHELL-ON FROZEN 21/25	5,537,738	49,778,072
2020	SHRIMP WARM-WATER SHELL-ON FROZEN 15/20	4,811,606	54,883,953
2020	SHRIMP WARM-WATER SHELL-ON FROZEN < 15	4,751,004	73,965,767
2020	MARINE FISH NSPF FROZEN	4,638,581	10,061,892

[9] Instituto Nacional de Estadística y Geografía (INEGI). Censos Económicos 2019. Tabulados básicos.
[10] Hernández-Trejo, V. (2019). Análisis de componentes principales para exportaciones pesqueras de México. Estudios recientes sobre economía ambiental y agrícola en México, 25.
[11] In 2019, México exported more than 110,000 tons of fishmeal and roughly 30,000 tons of fish oil to more than 18 countries, Ipac Acuicultura. Available at: http://www.ipacuicultura.com/noticias/ultima_hora/75764/en_2019_mexico_exporto_a_18_paises_mas_de_110000__toneladas_de_harinas_de_pescado_y_cerca_de_30000_toneladas_de_aceite.html
[12] *Id.*; Bering, J., Gargan, H., Kuesel, J., Morrison, M., Mullaney, C., Read, A. J., ... & Rowe, A. (2022). Will unilateral action improve the global conservation status of marine mammals? A first analysis of the US Marine Mammal Protection Act's Import Provisions Rule. Marine Policy, 135, 104832.
[13] Extracted from NOAA fisheries US Trade in Foreign Fishery Products database.

2020	SHRIMP WARM-WATER SHELL-ON FROZEN 26/30	4,121,448	34,416,624
2020	TUNA NSPF IN ATC (OTHER) IN OIL	3,534,126	13,777,075
2019	SHRIMP WARM-WATER SHELL-ON FROZEN 21/25	7,861,640	77,085,439
2019	MARINE FISH NSPF FROZEN	7,573,933	12,718,397
2019	FISH, SHELLFISH MEAL UNFIT FOR HUMAN CONSUMPTION	7,341,000	9,429,846
2019	SARDINE, SARDINELLA, BRISLING, SPRAT FROZEN	5,287,449	2,896,542
2019	SNAPPER (LUTJANIDAE SPP.) FRESH	5,200,105	39,523,908
2019	SHRIMP WARM-WATER SHELL-ON FROZEN 31/40	4,784,370	36,340,041
2019	SHRIMP WARM-WATER SHELL-ON FROZEN 26/30	4,779,891	41,594,727
2019	SHRIMP WARM-WATER SHELL-ON FROZEN < 15	4,395,993	70,421,971
2019	SHRIMP WARM-WATER SHELL-ON FROZEN 15/20	4,005,652	46,163,284

NMFS's List of Foreign Fisheries (LOFF) identifies 35 Mexican "export" fisheries.[14] Eight of these fisheries are gillnet or "encircling net" fisheries, including for cobia, sharks, halibut/flatfishes, barred sandbass/weakfish, deep-water red snapper and Gulf weakfish/corvina.[15] Other gear types include trawls used primarily in various shrimp fisheries, purse seines used primarily in small pelagic fisheries and longlines used in shark, tuna and other fisheries.[16]

IV. Marine mammal populations

There are 45 species of marine mammals that inhabit Mexican waters. This high diversity of species is due to various factors: the geographic position of Mexico between tropical and temperate latitudes, the variety of marine and coastal environments and the various marine currents that carry waters with different characteristics (temperature, salinity, density, nutrients). These factors lead to a biological productivity varied in species and abundance.[17]

A. Distribution and IUCN status

The 45 species of marine mammals in Mexico are distributed in all marine biogeographic regions: 40 in the western region of the Baja California Peninsula, 32 in the Gulf of California, 32 in the South Pacific and 27 in the Gulf of Mexico and the Caribbean Sea.

[14] NMFS, 2020 Final List of Foreign Fisheries (LOFF). Available at: https://s3.amazonaws.com/media.fisheries.noaa.gov/2020-10/LOFF_2020_IAICRS_508.pdf?null.
[15] *Id.*
[16] *Id.*
[17] Heckel, G., M.G. Ruiz Mar, Y. Schramm y U. Gorter, 2018. Atlas de Distribución y Abundancia de Mamíferos Marinos en México. Universidad Autónoma de Campeche. 186 p

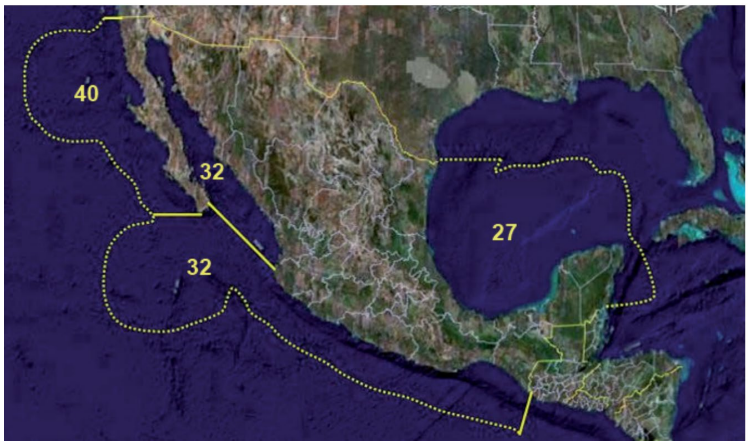

Figure 2. Number of species of marine mammals in the biogeographic regions of Mexico. There are species that are distributed in more than one biogeographic region.

The taxonomic classification presented below is based on the most recent review by the Taxonomy Committee of the Society for Marine Mammalogy, which groups together the taxonomists of mammals of most recognized organisms worldwide (Committee on Taxonomy, 2017), with information from Jefferson et al. (2008). Table II identifies the following information: Scientific name (author, year) - common name in Spanish - common name in English (biogeographic regions where they are distributed in Mexico), and the numbering of the biogeographic regions corresponds to: (1) western region of the Baja California Peninsula, (2) Gulf of California, (3) South Pacific and (4) Gulf of Mexico and Caribbean Sea.[18]

Table II. Marine mammals distributed in Mexico

Species	**IUCN status**
MYSTICETI Species: 8	
FAMILY BALAENIDAE (Gray, 1825)	
Right whales: 1 species	
Eubalaena japonica (Lacépede, 1818) – Ballena Franca del Pacífico norte – North Pacific Right Whale (1)	EN
FAMILY ESCHRICHTIIDAE (Ellerman y Morrison-Scott, 1951): 1 species	N/A
Eschrichtius robustus (Lilljeborg, 1861) - Ballena gris - Gray Whale (1,2,3)	LC
FAMILY BALAENOPTERIDAE (Gray, 1864). Fin whales: 6 species	N/A
Balaenoptera acutorostrata (Lacépède, 1804) - Rorcual menor o minke - Common Minke Whale (1,2,3,4)	LC
B. a. scammoni (Deméré, 1986) – Rorcual minke del Pacífico norte – North Pacific Minke Whale	N/A

[18] Heckel, G., M.G. Ruiz Mar, Y. Schramm y U. Gorter, 2018. Atlas de Distribución y Abundancia de Mamíferos Marinos en México. Universidad Autónoma de Campeche. 186 p

Balaenoptera borealis (Lesson, 1828) - Rorcual sei - Sei Whale (1,2,3,4)	EN
B. b. borealis (Lesson, 1828) – Rorcual sei del norte – Northern Sei Whale	N/A
Balaenoptera edeni (Anderson, 1879) - Rorcual tropical o de Bryde - Bryde's Whale (1,2,3,4)	LC
B. e. edeni (Anderson, 1879) – Rorcual de Eden – Eden's Whale	N/A
Balaenoptera musculus (Linnaeus, 1758) – Rorcual azul, ballena azul - Blue Whale (1,2,3,4)	EN
B. m. musculus (Linnaeus, 1758) – Rorcual azul del norte – Northern Blue Whale	N/A
Balaenoptera physalus (Linnaeus, 1758) - Rorcual común, ballena de aleta – Fin Whale (1,2,3,4)	VU
B. p. physalus (Linnaeus, 1758) – Rorcual común del norte – Northern Fin Whale	N/A
Megaptera novaeangliae (Borowski, 1781) - Rorcual jorobado, ballena jorobada – Humpback Whale (1,2,3,4)	LC
M. n. kuzira (Gray, 1850) – Rorcual jorobado del Pacífico norte – North Pacific Humpback Whale	N/A
ODONTOCETI (Flower, 1867). Species: 30	
FAMILY PHYSETERIDAE (Gray, 1821)	
Sperm Whale: 1 species	
Physeter macrocephalus (Linnaeus, 1758) – Cachalote – Sperm Whale (1,2,3,4)	LC
FAMILY KOGIIDAE (Gill, 1871) Miller, 1923.	
Kogias: 2 species	
Kogia breviceps (Blainville, 1838) – Cachalote pigmeo – Pygmy Sperm Whale (1,2,3,4)	LC
Kogia sima (Owen, 1866) – Cachalote enano – Dwarf Sperm Whale (1,2,3,4)	LC
FAMILY ZIPHIIDAE (Gray, 1865)	
Beaked Whales: 8 species	
Berardius bairdii (Stejneger, 1883) – Zifio de Baird – Baird's Beaked Whale (1,2,3)	LC
Indopacetus pacificus (Longman, 1926) – Zifio de Longman – Longman's Beaked Whale, Tropical Bottlenose Whale (3)	LC
Mesoplodon carlhubbsi (Moore, 1963) – Zifio de Hubbs – Hubbs' Beaked Whale (1)	DD
Mesoplodon densirostris (Blainville, 1817) – Zifio de Blainville – Blainville's Beaked Whale (1,2,3,4)	LC
Mesoplodon europaeus (Gervais, 1855) – Zifio de Gervais – Gervais' Beaked Whale (4)	LC
Mesoplodon ginkgodens (Nishiwaki y Kamiya, 1958) – Zifio japonés o de dientes de ginkgo – Ginkgo-Toothed Beaked Whale (1)	DD

Mesoplodon peruvianus (Reyes, Mead y Van Waerebeek, 1991) – Zifio pigmeo – Pigmy Beaked Whale (2,3)	LC
Ziphius cavirostris (Cuvier, 1823) – Zifio de Cuvier– Cuvier's Beaked Whale (1,2,3,4)	LC
FAMILY DELPHINIDAE (Gray, 1821).	
Dolphins: 17 species	
Delphinus delphis (Linnaeus, 1758) - Delfín común – Common Dolphin (1,2,3,4)	LC
D. d. delphis (Linnaeus, 1758) – Delfín común de rostro corto – Common Dolphin	N/A
D. d. bairdii (Dall, 1873) - Delfín común de rostro largo del Pacífico nororiental – Eastern North Pacific Long-Beaked Common Dolphin (1,2,3)	N/A
Feresa attenuata (Gray, 1874) – Orca pigmea – Pygmy Killer Whale (2,3,4)	LC
Globicephala macrorhynchus (Gray, 1846) – Calderón de aletas cortas – Short-Finned Pilot Whale (1,2,3,4)	LC
Grampus griseus (Cuvier, 1812) - Delfín de Risso, delfín gris, grampus – Risso's Dolphin (1,2,3,4)	LC
Lagenodelphis hosei (Fraser, 1956) – Delfín de Fraser – Fraser's Dolphin (3,4)	LC
Lagenorhynchus obliquidens (Gill, 1865) – Delfín de costados blancos del Pacífico - Pacific White-Sided Dolphin (1,2)	LC
Lissodelphis borealis (Peale, 1848) – Delfín liso del norte – Northern Right Whale Dolphin (1)	LC
Orcinus orca (Linnaeus, 1758) – Orca – Killer Whale (1,2,3,4)	DD
O. o.– subspecies with no name – Orca residente del Pacífico nororiental – Eastern North Pacific Resident Killer Whale	N/A
O. o.– subspecies with no name – Orca transeúnte del Pacífico nororiental – Eastern North Pacific Transient Killer Whale, Bigg's Killer Whale	N/A
Peponocephala electra (Gray, 1846) – Calderón pequeño, delfín cabeza de melón – Melon-Headed Whale (1,2,3,4)	LC
Pseudorca crassidens (Owen, 1846) – Orca falsa – False Killer Whale (1,2,3,4)	NT
Stenella attenuata (Gray, 1846) – Estenela moteada o delfín manchado pantropical – Pantropical Spotted Dolphin (1,2,3,4)	LC
S. a. attenuata (Gray, 1846) – Delfín manchado pantropical oceánico – Offshore Pantropical Spotted Dolphin	N/A
S. a. graffmani (Lönnber, 1934) – Delfín manchado pantropical costero – Coastal Pantropical Spotted Dolphin Stenella clymene (Gray, 1850) – Delfín Clymene - Clymene Dolphin (4)	N/A
Stenella coeruleoalba (Meyen, 1833) – Estenela listada o delfín listado – Striped Dolphin (1,2,3,4)	LC
Stenella frontalis (Meyen, 1833) - Estenela moteada del Atlántico o delfín pintado – Atlantic Spotted Dolphin (4)	LC

Stenella longirostris (Gray, 1828) - Delfín tornillo - Spinner Dolphin (1,2,3,4)	LC
S. l. longirostris (Gray, 1828) – Delfín tornillo de Gray – Gray's Spinner Dolphin	N/A
S. l. orientalis (Perrin, 1990) – Delfín tornillo oriental – Eastern Spinner Dolphin	VU
Steno bredanensis (G. Cuvier en Lesson, 1828) – Esteno o delfín de dientes rugosos – Rough-Toothed Dolphin (1,2,3,4)	LC
Tursiops truncatus (Montagu, 1821) - Tursión, tonina, delfín nariz de botella - Common Bottlenose Dolphin (1,2,3,4)	LC
T. t. truncatus (Montagu, 1821) – Tursión, tonina, delfín nariz de botella – Common Bottlenose Dolphin	N/A
FAMILY PHOCOENIDAE (Gray, 1825; Bravard, 1885)	
Porpoises: 2 species	
Phocoena sinus (Norris y McFarland, 1958) – Vaquita marina – vaquita, Gulf of California Porpoise (2)	CR
Phocoenoides dalli (True, 1885) – Marsopa de Dall – Dall's Porpoise (1)	LC
P. d. dalli (True, 1885) – Marsopa de Dall tipo dalli – Dalli-type Dall's Porpoise	N/A
ORDER SIRENIA (Illiger, 1811) 1 species	
FAMILY TRICHECHIDAE (Gill, 1872)	
Manatee: 1 species	
Trichechus manatus (Linnaeus, 1758) – Manatí de las Indias occidentales – West Indian Manatee	VU
T. m. manatus (Linnaeus, 1758) – Manatí de las Antillas – Antillean Manatee (4)	EN
ORDER CARNIVORA PINNIPEDIA (Illiger, 1811)	
FAMILY OTARIIDAE (Gill, 1866)	
Sea Lions: 2 species	
Arctocephalus philippii (Peters, 1866) – Lobo fino de Juan Fernández – Juan Fernandez Fur Seal	LC
A. p. townsendi (Merriam, 1897) – Lobo fino de Guadalupe – Guadalupe Fur Seal (1,2)	N/A
Zalophus californianus (Lesson, 1828) – Lobo marino de California – California Sea Lion (1,2,3)	LC
FAMILY PHOCIDAE (Gray, 1821)	
Seals: 2 species	
Mirounga angustirostris (Gill, 1866) - Foca elefante del norte, elefante marino del norte - Northern Elephant Seal (1,2)	LC
Phoca vitulina (Linnaeus, 1758) – Foca común o de puerto – Harbor or Common Seal	LC
P. v. richardii (Gray, 1864) -Foca de puerto del Pacífico - Pacific Harbor Seal (1)	N/A
FAMILY MUSTELIDAE (Gill, 1866).	

Sea Otters: 1 species	
Enhydra lutris (Linnaeus, 1758) – Nutria marina – Sea Otter E.l. nereis (Merriam, 1904) – Nutria marina del sur – Southern Sea Otter (1)	EN

All marine mammal species are subject to Mexico's Wildlife Law and its corresponding regulation, NOM-059-Semarnat-2010.[19] The Caribbean seal (*Monachus tropicalis*) is listed as "Extinct;" the manatee (*Trichechus manatus*), Juan Fernandez fur seal (*Arctocephalus townsendi*) and the vaquita (*Phocoena sinus*) are listed as "in danger of extinction;" the elephant seal (*Mirounga angustirostris*) is listed as "threatened," and lastly, the other remaining species listed in the table above are listed as "special protection."

B. Bycatch Threatens Several Mexican Marine Mammals

As noted above, numerous Mexican marine mammal species have an IUCN threatened status – vulnerable, endangered, or critically endangered, and all are listed under Mexico's threatened species legislation. Many species are threatened by bycatch. Sightings of entangled cetaceans have been increasing in recent years in Mexico.[20] There are reports in the news of entangled humpback whales[21] and other mammals.

As NMFS is aware, the critically endangered vaquita population has plummeted to around 10 individuals.[22] Mortality due to entanglement in nets has been established as the only known cause of decline, especially due to bycatch in large-mesh gillnets set for the endangered croaker fish totoaba (*Totoaba macdonaldi*) and gillnets set for shrimp.[23] There are other reports from the same area of entanglement of common dolphins (*Delphinus spp.*), long-beaked common dolphins, bottlenose dolphins, baleen whales, and humpback whales (*Megaptera novaeangliae*) also in totoaba gillnets.[24]

Sea lions are often found entangled in fishing gear and provoked an increase in fishermen unrest and sea lion shooting occurrences. Also, fishers have started to use sea lion flesh as bait for shark fishing.[25]

[19] Lista de especies en riesgo de la Norma Oficial Mexicana NOM-059-Semarnat-2010, Protección ambiental-Especies nativas de México de flora y fauna silvestres-Categorías de riesgo y especificaciones para su inclusión, exclusión o cambio-Lista de especies en riesgo, publicada el 30 de diciembre de 2010.
[20] Jiménez López, M. E., Palacios, D. M., Jaramillo Legorreta, A., Urbán R, J., & Mate, B. R. (2019). Fin whale movements in the Gulf of California, Mexico, from satellite telemetry. PLoS One, 14(1), e0209324.
[21] https://www.bcsnoticias.mx/tras-4-horas-de-maniobras-rescatan-a-ballena-jorobada-en-los-cabos-se-encontraba-enmallada-1/
[22] Survey report for Vaquita Research 2021. Available at: https://iucn-csg.org/wp-content/uploads/2022/02/Survey-report-for-Vaquita-research-2021-final.pdf
[23] Würsig, B., Jefferson, T. A., Silber, G. K., & Wells, R. S. (2021). Vaquita: beleaguered porpoise of the Gulf of California, México. Therya, 12(2), 187.
[24] Hinojosa, G. C., de la Cueva, H., Gerrodette, T., & Jaramillo-Legorreta, A. M. (2020). Distribution of the acoustic occurrence of dolphins during the summers 2011 to 2015 in the Upper Gulf of California, Mexico. *PeerJ*, *8*, e9121.
[25] Masper, A., Gallo-Reynoso-Reynoso, J. P., Cisneros-Mata, M. Á., & García-Hernández, J. (2019). Review of California sea lion (Zalophus californianus) abundance, and population dynamics in the Gulf of California. Revista de Biología Tropical, 67(4), 833-849.

At least 10 stranding networks work under the auspices of the Federal Attorney for Environmental Protection (Profepa) along the Mexican coasts. Such networks integrate staff from government agencies, research facilities and non-government organizations, and have assisted hundreds of strandings since 2014, but heavily rely on volunteers and lack government funding.[26]

RABEN (Red Nacional de Atención a Ballenas Enmalladas) or the National Whale Disentanglement Network in English has registered 245 entanglements of six whale species, with humpbacks being the most affected (88%). Just during the 2020–2021 season, the network received 37 entanglement reports and was able to successfully rescue 12 humpback whales. This network relies on philanthropic funding.[27] While humpbacks represent the majority of entanglements, RABEN has noted that gray whales, fin whales and Bryde's whales have also been impacted.[28]

V. Bycatch:

Despite a high level of marine mammal diversity within Mexico, including imperiled species that are subject to bycatch, marine mammal bycatch data is extremely limited. With the exception of the vaquita and yellowfin tuna fisheries, we were unable to identify any bycatch estimates for any fishery operating in Mexican waters and very little information about bycatch overall. However, undocumented bycatch certainly occurs, as gear known to entangle and kill marine mammals is used throughout the nation, particularly gillnets. Numerous Mexican gillnet fisheries export to the United States, including for cobia, sharks, halibut/flatfishes, barred sandbass/weakfish, deep-water red snapper and Gulf weakfish/curvina.[29]

Gillnets are open nets deployed as a vertical curtain, which mainly work by entangling fish of a specific size trying to swim through them. Marine mammals also become entangled in these nets and die by drowning.[30] Reported annual mortality of marine mammals in gillnets is more than an order of magnitude greater than that for any other general gear type. Many export fisheries employing gillnets experience some level of marine mammal bycatch.[31] Worldwide some 300,000 marine mammals such as whales, dolphins and porpoises die each year trapped in nets, as do 300,000 seabirds and 250,000 turtles.[32,33]

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[26] DOF. Acuerdo mediante el cual se expide el Protocolo de atención para varamiento de mamíferos marinos. (2004).

[27] Johnson, C., Reisinger, R., Palacios, D., Friedlaender, A., Zerbini, A., Willson, A., Lancaster, M., Battle, J., Graham, A., Cosandey-Godin, A., Jacob T., Felix, F., Shahid, U., Houtman, N., Alberini, A., Montecinos, Y., Najera, E. and Kelez, S. (2022). Protecting Blue Corridors, Challenges and Solutions for Migratory Whales Navigating International and National Seas. WWF, Oregon State University, University of California, Santa Cruz, Publisher: WWF International, Switzerland.

[28] https://rabenmexico.org/nosotros

[29] *Id.*

[30] Michael Gross (2021). Cetaceans balancing on the brink. Current Biology, Volume 31, Issue 5, Pages R215-R218.

[31] Bering, J., Gargan, H., Kuesel, J., Morrison, M., Mullaney, C., Read, A. J., ... & Rowe, A. (2022). Will unilateral action improve the global conservation status of marine mammals? A first analysis of the US Marine Mammal Protection Act's Import Provisions Rule. Marine Policy, 135, 104832.

[32] Torres Beristáin, B. (2017). Pesca incidental vs Conservación de mamíferos marinos.

[33] Reeves, R. R., McClellan, K., & Werner, T. B. (2013). Marine mammal bycatch in gillnet and other entangling net fisheries, 1990 to 2011. *Endangered Species Research*, *20*(1), 71-97.

1. Gulf of California

In Mexico, most of the available information on incidental mortality of cetaceans in gillnets is limited to the northern Gulf of California, specifically to the vaquita (*Phocoena sinus*).[34] However, in the 1970s,[35] fresh carcasses of common and bottlenose dolphins (*Delphinus delphis* and *Tursiops truncatus*) were regularly found on beaches of the central Gulf (coast of Sonora and Sinaloa) with signs of entanglement in gillnets (i.e., net marks on head and trunk, tip of dorsal fin and lobes of caudal fin cut away to allow for easier removal from the net, etc.). Information is lacking on total numbers of dolphins killed, but findings suggest that incidental mortality could be relatively high.[36]

Gillnets are one of the most common types of fishing gear used throughout the Gulf of California, and it is believed that dolphins are often caught in other areas where gillnets are common (e.g., Los Cabos, La Ribera, La Paz, Loreto and Mulegé in Baja California Sur; Puertecitos, Bahía San Luis Gonzaga and San Felipe in Baja California; El Golfo de Santa Clara, Puerto Peñasco, Desemboque, Puerto Lobos, Puerto Libertad, Bahía Kino, Guaymas, Bahía Lobos, Tobarí, Bahía Santa Bárbara, Yavaros and Las Bocas in Sonora; and Estero de Agiabampo, Topolobampo, Bahía de Navachiste, Bahía Santa María, Altata, Mazatlán and Teacapán in Sinaloa). Common and bottlenose dolphins, as well as other small cetaceans, are probably caught in other areas of Mexico where gillnets are commonly used.[37] Entanglements in gillnets are likely an important cause of mortality for gray whale calves in and near the calving grounds, as has been reported in other areas along the species' migratory route.[38]

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[34] In March 2020 and following our litigation, NMFS determined that Mexico failed to demonstrate comparability for its Upper Gulf of California gillnet fisheries due to vaquita bycatch. As a result, NMFS has banned import of shrimp, curvina, sierra, chano, anchovy, herrings, sardines, mackerels croaker and pilchard fish and fish products caught with gillnets in the vaquita's Upper Gulf of California habitat. 85 Fed. Reg. 13,626 (Mar. 9, 2020). Our organizations have submitted several letters to NMFS, demonstrating that Mexico continues to fail to maintain and implement a comparable regulatory program in the Gulf, and we hereby incorporate those letters and documents cited therein. *See* Letter from CBD, NRDC, & AWI to NMFS. *Mexico's September 2020 Fishing Regulations for the Upper Gulf of California and the MMPA Imports Provision* (Nov. 5, 2020); Letter from CBD, NRDC, & AWI to NMFS. *Mexico's January 2021 Supplemental Vaquita Regulations, Enforcement Failures, and the MMPA Imports Provision* (Apr.1, 2021); Letter from CBD, NRDC, AWI, & EIA to NMFS. *Update on Mexico's Implementation of Fishing Regulations Applicable to Implementation of the MMPA Imports Provision* (Nov. 21, 2021). Since our last letter, a new report revealed massive violations in November 2021, as researchers documented 117 pangas illegally transiting within the Zero Tolerance Area, with a high level of shrimp gillnet fishing. Rojas-Bracho et al. (2021) Survey report for Vaquita Research 2021. Available at: https://iucn-csg.org/vaquitas-seen-in-autumn-2021-survey/. Mexico continues to fail to maintain, implement, and actually enforce a comparable regulatory program for the Upper Gulf gillnet fisheries, and the current import ban must remain in place.

[35] Vidal, O., Van Waerebeek, K., & Findley, L. T. (1994). Cetaceans and gillnet fisheries in Mexico, Central America and the wider Caribbean: a preliminary review. Report of the International Whaling Commission, 15, 221-233.

[36] Vidal, O., Van Waerebeek, K., & Findley, L. T. (1994). Cetaceans and gillnet fisheries in Mexico, Central America and the wider Caribbean: a preliminary review. *Report of the International Whaling Commission*, *15*, 221-233.

[37] *Id*.

[38] *Id*.

In a stranding analysis in the west coast of the Baja California peninsula (July 2003 to July 2006) 3 pinnipeds, 9 odontocetes and 3 mysticetes were found. The California sea lion (*Zalophus californianus*) was the most commonly stranded species with 57% of the strandings. Four percent of the stranded individuals showed signs of human interactions such as fluke mutilation, scars of entanglement in fishing gear, gunshots and cranial traumatism.[39]

2. Gulf of Mexico and the Caribbean

Fishing in the Gulf of Mexico is largely done by small or medium-sized boats; however, the activity of the former is limited to an average depth of 22 meters. This depth delimits the coastal zone in terms of management. Small-scale gillnet fishing is intense in this area at the end of the windy season, which is from November to April.[40]

There is little information on bycatch of marine mammals in the nets of the various fisheries in the Gulf of Mexico and the Caribbean. The most vulnerable species to negative interactions with gillnets are those with coastal habitats and those that enter or reside in coastal lagoons.[41] Within the Gulf and the Caribbean, the common dolphin (*Tursiops truncatus*) and the manatee (*Trichechus manatus*) are very vulnerable to mortality because the species inhabit coastal areas and they are used as shark bait.[42]

At southern Veracruz, there are two known resident populations of coastal *Tursiops truncatus*: one in the Veracruz Reef System National Park (Marine Protected Area) and the other in the shallow waters of Alvarado, and both populations have been reported to interact with fishing gear and vessels.[43] The presence of intense interactions between bottlenose dolphins and fishers in the southwestern Gulf of Mexico may represent an important challenge for marine resource managers.[44] Although Rechimont et al. (2018) does not report dolphin bycatch, there are interactions with the gillnets because they fish for *Caranx latus, Scomberomorus cavalla, Scomberomorus maculatus, Conondon nobilis, Lutjanus synagris, Caranx crysos, Lutjanus vivanus, Lutjanus campechanus, Euthynnus alletteratus, Trachinotus carolinus, Ocyurus chrysurus, Anisotremus surinamensis, Sarda sarda, Mugil curema, Mycteroperca bonaci, Aluterus monoceros, Cynoscion arenarius, Umbrina coroides and Diapterus auratus.*

Most coastal fisheries on the central coast of Veracruz are unspecific, unregulated and practiced mostly for self-sustenance; thus, most boats work with different gear and target different species

[39] Mercuri, M. (2007). *Varamiento de mamíferos marinos en Isla Magdalena, BCS, México y su relación con factores físicos y biológicos* (Doctoral dissertation, Instituto Politécnico Nacional. Centro Interdisciplinario de Ciencias Marinas).
[40] *Id*.
[41] *Id.*
[42] *Id*.
[43] Rechimont, M. E., Lara-Domínguez, A. L., Morteo, E., Martínez-Serrano, I., & Equihua, M. (2018). Depredation by Coastal Bottlenose Dolphins (*Tursiops truncatus*) in the Southwestern Gulf of Mexico in Relation to Fishing Techniques. *Aquatic Mammals*, *44*(5).
[44] *Id*.

throughout the year; however, gillnets are the most frequently used and, therefore, are most frequently encountered by bottlenose dolphins.[45]

Despite the very limited information documenting bycatch, bycatch in gillnets throughout Mexico almost certainly is occurring. Temple et al. (2021)[46] assessed the likely geographic distribution of bycatch risk posed to odontocetes at the global scale, including Mexico, using fisheries pressure (gillnet density per km2 of coastal shelf). The Northwest Mexican Pacific and the Gulf of California, which is the most fished area in the country, were deemed to have "High" bycatch risk (Figure 3, Table III).

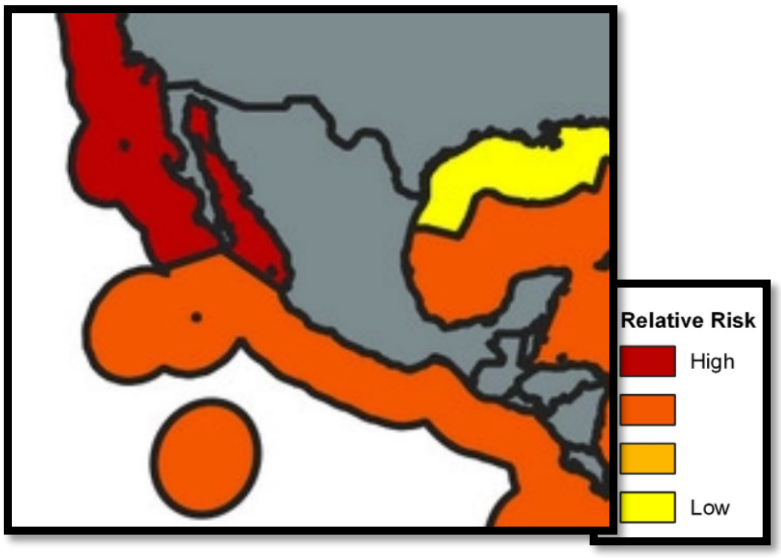

Figure 3. Risk assessment of toothed whale by-catch in small-scale fisheries. Modified from Tempe et al., (2021).

Table III. Estimated fisheries pressure (gillnet density per km^2 of coastal shelf) modified from Temple et al. (2021).

Nation	Coastal Shelf Area	Large Marine Ecoregion Realm	Realm Coastal Shelf (%)	Realm Coastal Shelf Area (km^2)	Estimated Total Gillnet Vessels	Realm Coastline Length (%)	Realm Gillnet Vessels	Gillnet Density (Vessels/km^2)
Mexico	417794	Temperate Northern Pacific	32.04	133868	20013	51	10206.63	0.07624
Mexico	417794	Tropical Atlantic	55.88	233465	20013	28	5603.64	0.024
Mexico	417794	Tropical Eastern Pacific	12.08	50461	20013	21	4202.73	0.08329

[45] Rechimont, M. E., Lara-Domínguez, A. L., Morteo, E., Martínez-Serrano, I., & Equihua, M. (2018). Depredation by Coastal Bottlenose Dolphins (Tursiops truncatus) in the Southwestern Gulf of Mexico in Relation to Fishing Techniques. *Aquatic Mammals*, *44*(5).

[46] Temple AJ, Westmerland E, Berggren P. (2021) By-catch risk for toothed whales in global small-scale fisheries. Fish and Fisheries. 00:1-5. https://doi.org/10.1111/faf.12581

According to the Mexican National Fisheries Chart-which has not been updated since 2017,[47] the species fished using gillnets are: *Scomberomorus regalis, Scomberomorus maculatus, Scomberomorus cavalla, Archosargus probatocephalus, Archosargus rhomboidalis, Bagre marinus, Kyphosus sectatrix, Lutjanus spp., Oligoplites saurus, Caranx bartholomaei, Caranx crysos, Caranx hipos, Caranx latus, Caranx lugubris, Conodon nobilis, Cynoscion arenarius, Cynoscion nebulosus, Cynoscion nothus, Euthynnus alletteratus, Sarda sarda, Haemulon plumierii, Kyphosus incisor, Polydactylus octonemus, Pomatomus saltatrix, Priacanthus arenatus, Rhizoprionodon terraenovae, Sciaenops ocellatus, Selene brownii, Selene vomer, Selene setapinni, Seriola dumerili, Sphyraena guachancho, Trachinotus carolinus, Trachinotus falcatus, Trichiurus lepturus, Caranx latus, Caranx hippos, Caranx crysos, Caranx lugubris, Alectis ciliaris, Archosargus probatocephalus, Archosargus rhomboidalis, Ariopsis felis, Bagre marinus, Cynoscion nebulosus, Cynoscion arenarius, Carcharhinus spp., Lutjanus griseus, Scomberomorus cavalla, Trachinotus carolinus, Seriola dumerili, Lutjanus analis, Lutjanus campechanus, Lutjanus cyanopterus, Lutjanus griseus, Lutjanus jocu, Lutjanus synagris, Mycteroperca microlepis, Mycteroperca venenosa, Ocyurus chrysurus, Rachycentron canadum, Trachinotus falcatus, Mugil cephalus, Brotula barbata, Calamus bajonado, Conodon nobilis, Elops saurus, Euthynnus alletteratus, Haemulon plumierii, Lagocephalus laevigatus, Dasyatis americana, Scomberomorus maculatus, Rhizoprionodon terraenovae, Priacanthus arenatus, Peprilus paru, Raja texana, Sciaenops ocellatus, Scomberomorus regalis, Trachinotus goodie, Trichiurus lepturus, Mugil curema, Cynoscion nebulosus, Cynoscion arenarius, Sciaenops ocellatus, Leiostomus xanthurus, Micropogonias undulates, Pogonias cromis, Archosargus probatocephalus, Diapterus auratus, Eugerres plumieri, Eucinostomus argenteus, Conodon nobilis, Centropomus undecimalis, Centropomus parallelus, Eleotris Pisonis, Menticirrhus americanus, Cynoscion othonopterus, Micropogonias megalops, Cynoscion nannus, Atractoscion nobilis, Cynoscion reticulatus* and *Scomberomorus sierra.*

VI. Mexico's Domestic Fisheries Legislation and Regulation

Mexico has taken some steps to protect marine mammals, which are part of the cultural, social and environmental heritage of its citizens. Mexico has participated in the International Whaling Commission of which it has been a signatory since 1949. Within Mexico's domestic legislation, several laws address marine mammal protection and fisheries. However, this patchwork of laws and regulation does not comprehensively address marine mammal bycatch or require bycatch mitigation in almost any Mexico fishery.

Wildlife Law and Regulations

The General Law of Ecological Balance and Environmental Protection has, since 1988, empowered the Ministry of the Environment and Natural Resources (Semarnat) to formulate policies for the management and implementation of actions for the protection of natural resources of the nation. Although it has general provisions for endangered species, the law does not directly address marine mammal bycatch.

[47] Available at: https://www.gob.mx/inapesca/acciones-y-programas/carta-nacional-pesquera-51204

The General Law on Wildlife contains principles for the sustainable development of wildlife through ecosystem conservation. Approved by the Congress in 2000, it contains general provisions on the sustainable use of wildlife. The General Wildlife Law does not apply to species whose total life is in water (e.g., fish) unless they are listed on NOM059; these species are instead regulated under the Sustainable Fishing and Aquaculture Law, unless the aquatic species is listed as at-risk.

The General Law on Wildlife contains marine mammal provisions at Article 60 Bis, stating that "No specimen of marine mammal, whatever the species, may be subject to extractive use of either subsistence or commercial, with the exception of the captures aimed for scientific research and education in accredited institutions." While this provision prohibits intentional hunting and removal of marine mammals for subsistence or commercial purposes, and some marine protected areas prohibit the incidental take of endangered species, the General Wildlife Law does not broadly prohibit incidental bycatch in all marine mammal habitat, and it is unclear if it prohibits intentional killing of marine mammals during fishing. Extractive use is defined as "[t]he use of specimens … through collection, capture or hunting" (art. 3). "Capture" is defined as "[t]he extraction of live specimens … from the habitat in which they are found" (bycaught marine mammals are not always removed from their habitat but instead thrown back), and hunting is defined as "killing a specimen of wildlife through permitted means" (killing marine mammals during fishing is not typically considered "hunting") (*id.*). Neither phrase appears intended to address bycatch or intentional killing of marine mammals to stop depredation. Moreover, under the law, marine mammal strandings must proceed according to the "Protocol of attention to marine mammal stranding." The law further prohibits the use of specimens of marine mammals in traveling shows.

Additionally, the General Law on Wildlife directs Semarnat to identify "species or populations at risk" (art. 56), as endangered, threatened, or "[s]ubject to special protection" (art. 58). Semarnat is directed to "promote and encourage the conservation and protection" of at-risk species through recovery projects, conservation measures for habitats and "certification of sustainable use" of the species (art. 60). Species deemed at risk may only be "use[d]" if "rates [of use] requested are lower than the rate of natural renewal of the populations subject to exploitation" (art. 85).

As noted above, all marine mammal species are listed in NOM059.[48] The Caribbean seal (*Monachus tropicalis*) is listed as "Extinct;" the manatee (*Trichechus manatus*), Juan Fernandez fur seal (*Arctocephalus townsendi*) and the vaquita (*Phocoena sinus*) are listed as "in danger of extinction;" the elephant seal (*Mirounga angustirostris*) is listed as "threatened," and all the remaining species listed in Table II are listed as under "special protection." There are no specific provisions regarding marine mammal bycatch in NOM059, and while the General Wildlife Law authorizes additional measures to protect at-risk species, we are aware of no bycatch measures for listed marine mammals, beyond those for the vaquita.

Since 2002 and pursuant to a regulation, all marine areas that are part of the national territory and those over which the nation exercises jurisdiction are considered a "refuge area for whales,"

[48] Lista de especies en riesgo de la Norma Oficial Mexicana NOM-059-Semarnat-2010, Protección ambiental-Especies nativas de México de flora y fauna silvestres-Categorías de riesgo y especificaciones para su inclusión, exclusión o cambio-Lista de especies en riesgo, publicada el 30 de diciembre de 2010.

including internal marine waters, the contiguous zone and the exclusive economic zone.[49] The area covers approximately 3 million km^2 in the Pacific, Atlantic and Caribbean Oceans, which is equivalent to almost the total of the Mexican coasts, since it has 11,112 linear km of coastline. The area was established to "protect" the species of large whales of the Mysticeti and Odontoceti parvorders.

According to this regulation, Semarnat, with the support of organized civil society, is responsible for addressing whale strandings. For this purpose, the "national network for attention to strandings" was established for the execution of rescue activities (art. 4). Semarnat must promote the maintenance of the necessary environmental conditions for the continuity of the biological functions of the whales, such as reproduction, birth, rearing, growth, learning, migration and feeding (art. 5).[50] However, there are no specific provisions regarding fisheries or marine mammal bycatch.

Sustainable Fishing and Aquaculture Law

Mexico adopted its Sustainable Fishing and Aquaculture Law in 2007, with a subsequent small amendment in 2014. The law is the main legislative document governing the conservation and management of aquatic fauna in Mexico and provides broad authority for the regulation and management of the nation's fisheries, including addressing environmental impacts and fishery inspection and surveillance.[51] Under the law, fishing in Mexico may be managed and regulated through fishing programs, fishing management plans (FMPs) and permits and/or concessions (art. 36).

First, fishing within Mexico may be subject to a "fishing management program." These programs must precisely describe the area covered, the fisheries subject to exploitation, any fishery management plan and a "[c]omprehensive and updated list of users in the region" (art. 37).
Fishing may also be subject to a "fishing management plan" that describes the species subject to exploitation, use of the fishery, areas fished and authorized fishing gear and methods (art. 38). Fishery management plans are intended to contain the set of actions to ensure fishing is conducted in a balanced, comprehensive and sustainable manner;[52] however, these actions are not legally binding.

Moreover, it is not mandatory that every fishery have a management program and/or plan under the law. According to Oceana and as of 2021, only 25% of Mexican fisheries have management plans.[53] Currently, 19 fisheries have management plans, including: yellowfin tuna in the Gulf of Mexico, yellowfin tuna from the Mexican Pacific Ocean, giant squid, seven beard shrimp Campeche and Tabasco, brown shrimp and white shrimp from Tamaulipas and Veracruz, red

[49] DOF: 24/05/2002. ACUERDO por el que se establece como área de refugio para proteger a las especies de grandes ballenas de los subórdenes Mysticeti y Odontoceti, las zonas marinas que forman parte del territorio nacional y aquellas sobre las que la nación ejerce su soberanía y jurisdicción.
[50] Available at: http://www.dof.gob.mx/nota_detalle.php?codigo=733639&fecha=24/05/2002
[51] Ley General de Pesca y Acuacultura Sustentables, Art. 2o.
[52] Article 4, section XXXVI, General law of sustainable fisheries and aquaculture.
[53] Auditoria Pesquera 2.0. Oceana. Available at: https://mx.oceana.org/sites/default/files/reporte_oceana_auditoriapesquera_2021.pdf

shrimp and rock shrimp from the Caladeros de Contoy, Quintana Roo, pink shrimp in the Sonda de Campeche, snail from the coast of the State of Campeche, Gulf curvina from the Gulf of California, sea urchin, crab from Sinaloa and Sonora, Yucatan spiny lobster, lisa and lebrancha in Tamaulipas and Veracruz, grouper and associated species in the Yucatan Peninsula, minor pelagics of Northwest Mexico, sea cucumber in the Yucatan Peninsula, octopus from the Gulf of Mexico and Caribbean Sea, and bass from the Gulf of Mexico and Caribbean Sea.[54]

Additionally, commercial fishing and aquaculture within Mexico require either a concession (art. 40) and/or a permit (art. 41). A permit is also needed for research fishing, sport-recreational fishing (except that carried out from land), fishing on the high seas or in waters under foreign jurisdiction by registered and flagged Mexican vessels, and the installation of fixed fishing gear in waters under federal jurisdiction.

The concessions or permits are issued by the National Aquaculture and Fisheries Commission (Conapesca) and are granted per vessel or unit of fishing effort, as defined for each species, group of species or area (art. 46). Conapesca is to consider "environmental protection" in granting a concession or permit (art. 47) and permits "will be subject to management plans" (art. 51). The concessionaire or permit holder must always have onboard the document that shows that the vessel is authorized to operate, which must have a Mexican license plate and flag registered in the National Maritime Public Registry, under the terms of the Navigation Law, as well as in the National Registry of Fisheries and Aquaculture, noted below.

Additionally, the law states that the establishment and operation of fixed or grounded fishing gear in waters of federal jurisdiction, as well as its change of location or dimensions, can only be carried out with the permission of Conapesca (article 61).

The law does address bycatch. Article 9o directs and authorizes relevant agencies to "[d]ictate measures for the protection . . . of marine mammals and aquatic species subject to a special protection" and "establish closures, total or partial" for those species.[55] The law further states that bycatch will be limited and may not exceed the volume determined by Conapesca (article 66), for each fishery, according to the zones, seasons and fishing gear. However, Conapesca has not determined the allowed volume of bycatch for all fisheries, and marine mammals are considered as part of bycatch without distinction from fish bycatch.

Fishing vessels must keep a fishing logbook, which contains the information determined by regulation (art 46). Depending on the fishery, the fishing logs may contain information including: auxiliary vessels and their gear or fishing equipment; size, weight and sex of the captured organisms; and transshipment of products.[56] For some fisheries, bycatch of non-targeted species must be recorded simply as "other species." A few limited fisheries require fishermen to specify their bycatch: shrimp fisheries in the Gulf of Ulloa must keep a record of

[54] https://www.gob.mx/Inapesca/es/articulos/conoces-los-planes-de-manejo-pesquero?idiom=es
[55] Ley General de Pesca y Acuacultura Sustentables, Art. 9o V.
[56] *Sustainable Fishing and Aquaculture By-Law*, Art. 36.

"sea turtles" interactions,[57] and tuna fisheries must record dolphin and other bycatch. For the fisheries in the Upper Gulf of California, fishers "must inform the Conapesca Fisheries Office closest to their address where they carry out their fishing activities, in a period not exceeding twenty-four hours following the arrival of the vessel at its arrival site or base port, on any interaction with marine mammals, the measures for its release that it has undergone, as well as on the final disposition (released alive or dead, injured or retained with official or scientific justification). They must also provide information on the loss or misplacement of fishing gear during their fishing activities.[58] In December 2021, the "Agreement by which a report format is established on any interaction with marine mammals and/or loss of fishing gear during activities in the Mexican marine area in the northern Gulf of California" was published in the *Diario Oficial*, mandating that individuals or legal entities carrying out fishing activities on board smaller vessels in the Upper Gulf must submit reports to the closest Conapesca office or port authority via a specified format (see Figure X). Persons failing to comply "will be sanctioned under the terms provided in the General Law on Sustainable Fisheries and Aquaculture and other applicable legal provisions."[59] However, this regulation does not apply outside of Gulf of California fisheries.

[57] AGREEMENT that establishes the fishing refuge zone and new measures to reduce the possible interaction of fishing with sea turtles on the western coast of Baja California Sur. Available at: https://www.dof.gob.mx/nota_detalle.php?codigo=5601153&fecha=24/09/2020

[58] Art. 5. https://www.dof.gob.mx/nota_detalle.php?codigo=5601153&fecha=24/09/2020

[59] http://dof.gob.mx/nota_detalle.php?codigo=5637600&fecha=08/12/2021

ACUERDO POR EL QUE SE ESTABLECE EL FORMATO DE INFORME SOBRE CUALQUIER INTERACCIÓN CON MAMÍFEROS MARINOS Y DE LA PÉRDIDA O EXTRAVÍO DE ARTES DE PESCA DURANTE LAS ACTIVIDADES DE PESCA EN EL NORTE DEL GOLFO DE CALIFORNIA

Con fundamento en el artículo quinto del 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, publicado en el Diario Oficial de la Federación el 24 de septiembre de 2020.

Folio

1. DATOS GENERALES

1.1. Fecha del Viaje de Pesca: _____ /_____ /_____ (DD / MM / AAAA)	**1.2. Número de Permiso de Pesca:**	**1.3. RNPA:**
1.4. Nombre de la Unidad Económica:		
1.5. Localidad:	**1.6. Municipio:**	**1.7. Entidad:**
1.8. Nombre de la embarcación:		**1.9. Matrícula:**
1.10. Marca y potencia del motor (HP):	**1.11. Número de tripulantes:**	**1.12. Sitio de arribo o desembarque:**

2. PARA EL CASO DE INTERACCIÓN CON MAMÍFEROS MARINOS

2.1. Hubo algún tipo de interacción con mamíferos marinos:	Si ( )	No ( )	**2.2. Tipo de interacción:**	Atrapada ( )	Enredada ( )	Auxiliada ( )				
2.3. Condición:	Vivo ( )	Muerto ( )	Cicatrices ( )	Heridas superficiales ( )	Heridas profundas ( )	Perdida de tejido ( )	Perdida de extremidades ( )			
2.4. Identificación de la(s) especie(s):	Vaquita marina (*Phocoena sinus*)	( )	Cantidad	( )	Delfín	( )	Cantidad	( )		
	Lobo Marino	( )	Cantidad	( )	Ballena	( )	Cantidad	( )		
	Otro	( )	Cantidad	( )	Especificar:					

2.5. Fotografías: Si ( ) No ( )	**2.5.1. Número de código o clave de las fotografías:**	
2.6. Coordenadas geográficas:	Latitud (_____°_____'_____.____") N	Longitud (_____°_____'_____.____") W
2.7. Medidas tomadas para su liberación:		
2.8. Condición final: Liberado(s) Vivo(s) ( )	Liberado(s) Muerto(s) ( )	Liberado(s) Lastimado(s) ( ) Retenido(s) con Justificación oficial o científica ( )
2.9. Observaciones:		
2.10. Arte de Pesca utilizado en la faena de pesca:	**2.11. Descripción del Arte de Pesca utilizado:** **Profundidad de operación del arte de pesca:** _____ **m; Cantidad:** _____	

3. PARA EL CASO DE AVISTAMIENTO DE VAQUITA MARINA (*Phocoena sinus*)

3.1. Coordenadas geográficas:	Latitud (_____°_____'_____.____") N	Longitud (_____°_____'_____.____") W
3.2. Fotografías: Si ( ) No ( )	**3.2.1. Número de código o clave de las fotografías:**	
3.3. Observaciones:		

4. PARA EL CASO DE PÉRDIDA O EXTRAVÍO DE ARTES DE PESCA

4.1. Fecha y hora de la pérdida del arte de Pesca:	___ /___ /___ (DD / MM / AAAA)	Hora: _____:_____	**4.2. Zona o lugar del extravío:**		
4.3 Tipo de arte de pesca perdida:	Red de Arrastre ( )	Sistema de Cerco Artesanal ( )	Trampa ( )	Cimbra o palangre ( )	
	Otro ( ) Especifique:				
4.4. Coordenadas geográficas del extravío:	Latitud (_____°_____'_____.____") N	Longitud (_____°_____'_____.____") W			
4.5. Causas y observaciones de la pérdida o extravío:					

5.- Nombre y firma del pescador que presenta el informe	**6.- Nombre, Firma y Sello del Responsable de la Oficina Federal de Pesca**

Figure 4. Report format is established on any interaction with marine mammals and/or loss of fishing gear during activities in the Mexican marine area in the northern Gulf of California

However, Conapesca does not require that the fishing logs be attached to the arrival notices (discussed below) unless the regulations explicitly establish it, as in the cases of tuna and shrimp.

The law also requires that individuals or entities engaged in commercial fishing must be registered under the National Registry of Fisheries and Aquaculture (art. 122). The registry must contain the name of the person or entity; any permits/concessions including species, fishing gear, quotas and areas of operation and boats (art. 122). Once registered, Conapesca issues a registration certificate to be held onboard.

Moreover, under the law, Conapesca must provide methods to prove the legal origin of the fishery and aquaculture products upon arrival through a traceability scheme. Specifically, the fishing law requires that the "legal origin of fishery and aquaculture products will be accredited with the arrival notice, harvest notice, production notice, collection notice, import permit or with the fishing guide, as appropriate" (art. 75).

In the case of commercial fishing, arrival notices and fishing guides are the basis of the traceability scheme. An arrival notice is the document in which "the catch volumes obtained by species during a day or fishing trip are reported to the competent authority."[60] This document

[60] Fisheries law. Article 4 VI.

must be presented to Conapesca by the person authorized to carry out fishing activities through a permit or concession, including: (1) Number, date and validity of the concession, permit or authorization; (2) Place, date, time of arrival, unloading, and the period covered by the arrival notice; (3) Name and registration number of the vessel; (4) Name of the permit holder, concessionaire or authorized person, if applicable; (5) Landing site where the operation was carried out; (6) Areas in which the fishing was carried out; (7) Total kilograms of each of the species captured and unloaded, and (8) Estimated sales value of the captured products, for statistical purposes. Even though this document is used to proof the legality of the captures, this document does not require or provide information on the fishing gear used.[61]

A fishing guide is the document that supports the transfer of live, fresh, frozen or frozen fish products.[62] The fishing guide is requested by the owner or holder of the fishing products and issued by Conapesca. In this document, the data of the notices of arrival of the fishery products is referenced. In this sense, it is possible to link the permit holders or concessionaires of the arrival notice with the owner or possessor of the products.

Without adequate inspection and surveillance measures, the information reported in the fishing documents may not correspond to the fishing products claimed, allowing the entry of products that are not of legal origin to the market. To verify that the traceability scheme works, an audit must be carried out to confirm that the information and products that pass from one document to another through the links of the supply chain are correct and related. There is no public evaluation by the authority in this regard.

Finally, the fisheries law authorizes Conapesca with the Navy to ensure compliance through "inspection and surveillance" (art. 124). The agencies may enforce against violations of the law, including fishing without a permit/concession, fishing for species not specified in the permit or beyond limitations, fishing with non-permitted gear or otherwise fail to comply with requirements (art. 132).

The Sustainable Fishing and Aquaculture By-Law

The Mexican government has issued a Sustainable Fishing and Aquaculture By-Law (regulation), but it is outdated. It was published in 1999 and has not been substantially modified since. The last modification was done in 2004.[63] The by-law provides little additional information or requirements beyond what is stated in the Fisheries Law. The by-law states that "bycatch may not exceed the volume that the Secretariat determines for each fishery." However, the by-law does not mention marine mammals at all nor regulate their bycatch.

The National Fishing Charter

The National Fishing Charter, maintained by the National Fisheries and Aquaculture Institute (INAPESCA), is a publicly-available, purportedly comprehensive inventory of Mexican fisheries under federal jurisdiction, including a map and summary of the fishery (art. 32). The Charter

[61] See: https://www.gob.mx/cms/uploads/attachment/file/130329/FF-Conapesca-004_aviso_arribo_menores.pdf
[62] Regulation of the Fishing Law, Article 14 bis 2.
[63] Available at: http://www.diputados.gob.mx/LeyesBiblio/regley/Reg_LPesca.pdf

must identify the species targeted, area, catch trend and management measures including measures to protect the greater ecosystem, which can include gear restrictions, bans, minimum sizes and effort (art. 33).[64] According to the law, the Charter's content is binding on fisheries decision makers who manage and regulate fisheries. The Charter contains some specifications regarding marine mammal bycatch applicable in certain marine protected areas. However, the portion of the Charter providing information on each fish species subject to commercial fishing does not address marine mammal bycatch.

The information contained in the National Fisheries Charter[65] is outdated and highlights the concerning state of many Mexican fisheries. Conapesca and INAPESCA have made no effort to improve the quality of information with which they make decisions about the sector. The Charter has had no substantial updates since 2012, and not all the species listed have a management plan. An audit made by Oceana found that 49% of the information has not been updated for at least 8 years, and only 4% of the species data have verifiable and reliable sources of information. Only 25% of fisheries have management plans, and 4 out of 10 commercial species are overexploited.[66]

The Federal Penal Code

Article 420 of the Federal Penal Code sets the penalties applicable to the illegal capture or damage to marine mammals. A penalty of up to 9 years in prison and a fine of three hundred to three thousand days fine will be imposed[67] on anyone who *unlawfully* "captures, harms or kills" any specimen of marine mammal or collects or stores such species' products or by-products. The Penal Code also imposes penalties for carrying out any activity for the purpose of trafficking, or the capture, possession, transport, collection, introduction into the country or removal of any specimen of a wild species that is banned, considered endemic, threatened, in danger of extinction, subject to special protection, or regulated by an international treaty to which Mexico is a party, or damage any of specimen of species of wild, terrestrial or aquatic flora or fauna. An additional penalty of up to three more years in prison and up to a thousand additional days of fine is allowed when violations occur in or affect a protected natural area, or when they are carried out for commercial purposes.

As detailed below, it is unclear whether the Federal Penal Code simply provides the penalty for violations of other laws, like the General Wildlife Law, that ban "extractive use" (i.e., collection and capture) of marine mammals and other threatened species or if the Federal Penal Code provides for additional protections or bans take of imperiled marine mammals.

[64] DOF, 11/06/28, available at: ACUERDO por el que se da a conocer la actualización de la Carta Nacional Pesquera. http://dof.gob.mx/nota_detalle.php?codigo=5525712&fecha=11/06/2018.
[65] Available at: https://www.gob.mx/Inapesca/acciones-y-programas/carta-nacional-pesquera-51204
[66] Auditoria Pesquera 2.0. Oceana. Available at: https://mx.oceana.org/sites/default/files/reporte_oceana_auditoriapesquera_2021.pdf
[67] Approximately US$1,560 according to the 2022 minimum wage and dollar-peso mean exchange rate in January 2022. The definition of a fine day is equivalent to the daily net income of the person being sentenced, taking into account all their income. For the purposes of the Penal Code, the lower limit of the fine day will be the equivalent of the current minimum daily wage in the area where the crime was committed. Art. 29 of the Penal Code

Fishery Official Mexican Standards

As explained above, under its Sustainable Fishing and Aquaculture Law authority, Conapesca can issue NOMs and restrictions to mitigate marine mammal interactions. Mexico has adopted measures for fisheries operating within a portion of the Upper Gulf of California habitat to reduce vaquita bycatch. These measures include a prohibition on the use and possession of nylon gillnets, a closure of a key vaquita area (the Zero Tolerance Area) to fishing and transit, a prohibition on night fishing, requirements for inspection and designated launch points, and use of vessel monitoring.[68] Our organizations have submitted several letters to NMFS, assessing these regulations for comparability and describing Mexico's utter failure to enforce the regulations.

However, we are not aware of any other fisheries operating in Mexican waters for which the Mexican government has required marine mammal bycatch reduction measures. Below, we describe measures for fisheries using gears with potential marine mammal interactions:

Official Mexican Standard NOM-001-SAG/PESC-2013,[69] Responsible tuna fishing, Specifications for purse seine fishing operations: This NOM states that the permit or concessions holders for commercial tuna fishing with purse-seine vessels that make sets for the capture of tuna associated with dolphins must additionally comply with the following provisions: "4.2.1 Commercial fishing for tuna associated with dolphins using purse seines may only be carried out with vessels greater than 363 metric tons (400 short tons) of carrying capacity or its equivalent in m3, for which the Secretariat officially assigns a Dolphin Mortality Limit in accordance with the Agreement on the International Dolphin Conservation Program criteria." Even though there is a prohibition on direct take of dolphins, this is the only fishery where registration of a dead dolphin in the fishing log is required because there is a yearly Dolphin Mortality Rate permitted.

NOM-002-SAG/PESC-2013, to order the use of shrimp species in waters under federal jurisdiction of the United Mexican States.[70] This NOM has a provision to record bycatch generally in the fishing logs in kilos but has no specific provisions for marine mammal bycatch.

NOTICE FISHING AUTHORIZATION 7 BARBAS: Notice announcing the authorization for commercial fishing of "seven beards shrimp" in the coastal marine waters of the states of Campeche and Tabasco.[71] The Notice has no specific provisions for marine mammal bycatch.

NOTICE AUTHORIZATION OF CHARANGAS: Notice announcing the authorization to use "charangas" (traps)[72] as fishing equipment for the capture of shrimp in the estuarine lagoon

[68] 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.

[69] https://www.dof.gob.mx/nota_detalle_popup.php?codigo=5329799

[70] http://dof.gob.mx/nota_detalle_popup.php?codigo=5306294

[71] http://dof.gob.mx/nota_detalle.php?codigo=4900788&fecha=14/11/1997

[72] The "charanga" is a fishing system of the type of traps. It is installed in shallow areas of coastal lagoons, or estuarine channels where water currents generated mainly by tidal changes circulate.

systems of Tamaulipas and northern Veracruz.[73] The Notice has no specific provisions for marine mammal bycatch.

NOTICE AUTHORIZATION MAGDALENA I AND SURIPERA: Notice announcing the authorization to use the Magdalena I and Suripera nets, as fishing equipment for the capture of shrimp in the Magdalena-Almejas Bay Estuarine Lagoon System, located in the state of Baja California Sur.[74] The Notice has provisions for sea bottom trawling and has no specific provisions for marine mammal bycatch.

NOTICE FOR MINOR BOATS IN SINALOA: Notice authorizing the operation of smaller vessels with trawls in the use of the different species of shrimp, in the coastal marine waters off the coast of the State of Sinaloa.[75] The Notice has no specific provisions for marine mammal bycatch.

NOM-003-SAG/PESC-2018. To regulate the use of minor pelagic fish species with purse seine vessels, in waters of federal jurisdiction of the Pacific Ocean, including the Gulf of California.[76] The Notice has no specific provisions for marine mammal bycatch, although bycatch limits are set for other species, including elasmobranchs.

NOM-003-SAG/PESC-2018 regulates the take of a thread herring fishery (Southern Gulf of California Thread Herring Fishery, Sinaloa & Nayarit, Mexico) that is in the process of undergoing an assessment for Marine Stewardship Council certification. According to the recently published final draft report, from 2015-2020, a total of 20,654 dolphins were observed (sightings/interactions during fishing operations) during this fishery's operations, which consist of eight purse seine vessels. The most frequently observed was the pantropical spotted dolphin (*Stenella attenuata*, 70.13%), followed by the bottlenose dolphin (*Tursiops truncatus*, 16.21%) and the long-beaked common dolphin (*Delphinus capensis*, 11.1%, although none were observed 2016-17 and 2017-18). In addition, 2471 California sea lions (*Zalophus californianus)* were recorded as interacting with the fishery in that same time frame.[77] Each of these species is listed in NOM059.

The assessment team for this thread herring fishery noted with regard to the dolphin interactions that, "[t]hough no injuries or deaths were recorded by observers, it can be assumed that given the large number of observed interactions, and the observed direct interactions with fishing gear obtained due to mitigation measures (escapement from purse seine prior to closing), there could be unobserved deaths/injuries to individuals resulting from fishing activities (due to unobserved injuries and death from stress).[78]

[73] https://www.dof.gob.mx/nota_to_imagen_fs.php?codnota=4901449&fecha=21/11/1997&cod_diario=209763
[74] http://dof.gob.mx/nota_detalle.php?codigo=760832&fecha=11/09/2001
[75] http://dof.gob.mx/nota_detalle.php?codigo=721021&fecha=20/09/2002
[76] https://www.dof.gob.mx/nota_detalle.php?codigo=5552552&fecha=12/03/2019
[77] Bystrom, A., Alvarez, C., Hartmann, H. and Castro, M. (2022) Southern Gulf of California Thread Herring Fishery, Sinaloa & Nayarit, Mexico. MSC Fishery Assessment Report, Final Draft Report, February 17, 2022. https://fisheries.msc.org/en/fisheries/southern-gulf-of-california-thread-herring/@@assessments
[78] *Id.* At p. 127.

NOM-004-SAG/PESC-2015, specifications for the use of the catarina clam (*Argopecten circularis*) in waters of federal jurisdiction of the United Mexican States.[79] The Notice has no specific provisions for marine mammal bycatch.

NOM-009-SAG/PESC-2015, which establishes the procedure to determine the times and areas of closure for the capture of the different species of aquatic flora and fauna, in waters of federal jurisdiction of the United Mexican States.[80] It has no specific provisions for marine mammal bycatch.

NOM-016-SAG/PESC-2014, to regulate the fishing of mullet and liseta *Mugil cephalus* or lebrancha *Mugil curema* in waters of federal jurisdiction of the Gulf of Mexico and Caribbean Sea, as well as the Pacific Ocean, including the Gulf of California.[81] The NOM has no specific provisions for marine mammal bycatch despite the use of gillnets. There is no obligation to record bycatch in the fishing logs.

NOM-023-SAG / PESC-2014, which regulates the use of tuna species with longline vessels in waters under federal jurisdiction of the Gulf of Mexico and the Caribbean Sea establishes that "any specimen of dolphin or other marine mammal, sea turtle or bird that could be caught during fishing operations, must be released in the best conditions for survival, being forbidden the retention on board of live, dead or some of their parts."[82] However, the fishing log does not require fishermen to record any marine mammal interactions.

In the case of Bluefin tuna fishing, there is a Management Plan for the Bluefin Tuna fishery, and all vessels with a capacity of more than $400m^3$ must carry a scientific observer from the IATTC or the National Program for the Use of Tuna and Dolphin Protection (PNAAPD) in accordance with the provisions of the Agreement of the International Program for the Conservation of Dolphins (AIDCP). Only vessels with an observer onboard are used in bluefin tuna fishing.[83]

In 2020, 689 dolphins died on sets on tuna associated with dolphins, and mortalities of dolphins due to the tuna purse seine fishery.[84] However, it should be noted that this pertains to mortalities for the entire eastern Pacific tuna purse seine fleet, not just Mexico.

NOM-029-PESC-2006, responsible fishing for sharks and rays. Specifications for its use.[85] This NOM establishes that under no circumstances may marine mammal species be used as bait for shark and ray fishing (art. 4.3.6) and prohibits holding and transporting live or dead, whole or parts of marine mammals that may have been incidentally caught (art. 4.3.10.1). Even though the use of gillnets is authorized for small and medium size boats, there are no requirement to record any bycatch of marine mammals in the fishing logs.

[79] http://dof.gob.mx/nota_detalle.php?codigo=5410616&fecha=06/10/2015
[80] http://dof.gob.mx/nota_detalle.php?codigo=5425490&fecha=12/02/2016
[81] http://dof.gob.mx/nota_detalle.php?codigo=5402187&fecha=29/07/2015
[82] http://www.dof.gob.mx/nota_detalle.php?codigo=5341045&fecha=16/04/2014
[83] DOF: 07/04/2021. ACUERDO por el que se expide el Plan de Manejo para la pesquería de Atún Aleta Azul (*Thunnus orientalis*, Temminck y Schlegel 1844) en el Pacífico Oriental.
[84] https://www.iattc.org/Meetings/Meetings2021/IATTC-98a/AIDCP/_English/AIDCP-42-MINS_42nd%20Meeting%20of%20the%20Parties%20to%20the%20AIDCP.pdf
[85] http://dof.gob.mx/nota_detalle.php?codigo=4962277&fecha=14/02/2007

NOM-063-PESC-2005, responsible fishing of curvina golfina (*Cynoscion othonopterus*) in waters of federal jurisdiction of the Upper Gulf of California and Colorado River Delta. Specifications for its use.[86] The NOM recognizes that there is a probability that curvina golfina fishing operations will have some effect on vaquita (*Phocoena sinus*) and the totoaba (*Totoaba macdonaldi*), so it is necessary to establish control measures to reduce risks of interaction with the species (art. 0.5). However, there are no provisions requiring mitigation measures, directives for how to handle any marine mammal interaction, or requirements to record marine mammal bycatch in the fishing logs.

NOM-065-SAG/PESC-2014, to regulate the use of grouper species and associated species, in waters of federal jurisdiction of the coast of the Gulf of Mexico and the Caribbean Sea.[87] This fishery prohibits the use of gillnets. Only longlines are authorized. The NOM does not mention marine mammal bycatch.

Fishing Refuge Zones

The Fishing Refuge Zones (ZRPs) are defined as "Delimited areas, with the purpose of conserving and contributing … to the development of fishing resources due to their reproduction, growth or recruitment, as well as preserving and protecting the surrounding environment." As of 2019, 14 ZRP Regulatory Agreements were in force within Mexico, which include 36 polygons, covering 2,052,488 hectares, located in 5 States of the Republic, where more than 130 target species are protected, secondary and incidental. However, none of the ZRPs provide protection for marine mammal species.

Unfortunately, many of these declarations, decrees and agreements were created with a good intention of conservation but remain only paper decrees, as there is little monitoring or compliance. Illegal and non-selective fishing is causing the unnecessary killing of species that are protected by various laws and decrees.[88] Moreover, there are several occasions in which the enforcement authorities do not comply with existing legislation on environmental matters.[89]

VII. Mexico's Compliance with the MMPA Imports Rule

A. MMPA Imports Rule Requirements

Under the MMPA, the U.S. government "shall ban" all seafood imports caught with fishing gear that kills or seriously injures marine mammals "in excess of United States standards."[90] In applying this requirement, the United States "shall insist on reasonable proof" from the exporting

[86] http://dof.gob.mx/nota_detalle.php?codigo=4996554&fecha=16/08/2007
[87] https://www.dof.gob.mx/nota_detalle.php?codigo=5399372&fecha=03/07/2015
88 Gallo-Reynoso, J. P. (2004). Mortandad de mamíferos marinos en el área de Guaymas debido a la interacción con las pesquerías. *Resúmenes: XXIX Reunión Internacional para el Estudio de los Mamíferos Marinos. La Paz, BCS., México*.
[89] Gallo-Reynoso, J. P. (2004). Mortandad de mamíferos marinos en el área de Guaymas debido a la interacción con las pesquerías. *Resúmenes: XXIX Reunión Internacional para el Estudio de los Mamíferos Marinos. La Paz, BCS., México*.
[90] 16 U.S.C. § 1371(a)(2).

nation of the effects of its exporting fisheries on marine mammals – i.e., its marine mammal bycatch.[91]

To implement this provision, NMFS issued its MMPA Imports Rule.[92] Under the Rule, for Mexico to continue exporting fish to the United States after December 31, 2022, the nation must apply for and receive a "comparability finding" from NMFS for each export fishery, which is essentially a determination that Mexico's bycatch and bycatch program as applied to each fishery meets U.S. standards.[93]

Under the Rule, for export fisheries operating within Mexico's EEZ to receive a comparability finding, Mexico must show:

(1) Mexico "[p]rohibits the intentional mortality or serious injury of marine mammals in the course of commercial fishing in the fishery;" and

(2) For any fishery deemed an export fishery on NMFS's LOFF, Mexico "maintains a regulatory program" for the fishery "that is comparable in effectiveness to the U.S. regulatory program."

To demonstrate a comparably effective regulatory program, Mexico must show it maintains a program "that includes[ ] or effectively achieves comparable results as" the following components:

(a) "Marine mammal assessments for . . . for stocks . . . that are killed or seriously injured in the fishery;"

(b) "An export fishery register," listing all fishing vessels in the fishery and time, season, gear type, and target species fished;

(c) Regulatory requirements that include:

(i) A requirement that vessel operators report all marine mammal injury or death;

(ii) A requirement that fishers implement measures to reduce mortality/serious injury;

(d) Monitoring procedures in the export fishery to estimate mortality/serious injury from the fishery and cumulatively from other export fisheries on same marine mammal stocks;

[91] *Id.*
[92] 81 Fed. Reg. 54,415 (Aug. 16, 2016).
[93] 50 C.F.R. § 216.24(h)(6).

(e) Calculation of bycatch limit for marine mammals taken in fishery. The "bycatch limit" is the potential biological removal (PBR) level or a "comparable scientific metric;" and

(f) Demonstration that mortality/serious injury from the fishery (and cumulatively with other export fisheries) "[d]o[es] not exceed the bycatch limit," defined as the PBR level or a scientifically comparable metric.[94]

Under both the MMPA and the MMPA Imports Rule, Mexico bears the burden of demonstrating each export fishery meets these requirements. The Rule states that the "harvesting nation shall submit . . . an application . . ., along with documentary evidence demonstrating" the conditions have been met "for each" fishery.[95]

Accordingly, in order to achieve a comparability finding under the MMPA Imports Rule, Mexico must demonstrate and document that it meets each of the conditions listed above or that it maintains a regulatory program that "effectively achieves comparable results," a strict standard.

B. Based on Available Information, Mexican Export Fisheries Assessed Do Not Meet U.S. Standards

Applying the MMPA Imports Rule requirements to information currently available to the public, it is likely that Mexico *lacks* the bycatch measures, monitoring, and data necessary to demonstrate comparability for its export fisheries.

While aspects of Mexico's legal requirements may be comparable to the MMPA, the severe lack of current data available on marine mammal status and marine mammal bycatch, as well as the lack of data provided to the 2020 LOFF, make an accurate comparison of Mexico's fishing exports nearly impossible. Therefore, unless significant improvements are made in Mexico's data collection and reporting as well as monitoring, a U.S. ban on Mexican seafood imports is warranted under the MMPA Imports Rule.

We note that on numerous occasions, the U.S. government has concluded that Mexico has failed to meet various U.S. conservation requirements. In March 2010, the U.S. State Department withdrew Mexico's certification under Section 609, because Mexico's turtle excluder device program was not comparable to the United States program as required by the statute.[96]

In 2013, NMFS identified Mexico under the High Seas Driftnet Fishing Moratorium Protection Act for a lack of management measures for mitigating bycatch of North Pacific loggerhead sea turtles in its Gulf of Ulloa, Baja California Sur gillnet fishery.[97] In 2015, NOAA Fisheries negatively certified Mexico. NMFS determined that the Government of Mexico established a management plan to assist in the collection of species-specific data to support stock assessment

[94] *Id.* § 216.24(h)(6)(iii)(C).
[95] 16 U.S.C. 1371(a)(2); 50 C.F.R. §§ 216.24(h)(5), 216.3.
[96] Certifications Pursuant to Section 609 of Public Law 101-162. A Notice by the State Department on 03/31/2010. Federal Register.
[97] Improving International Fisheries Management. January 2013. Report to Congress. NOAA Fisheries.

and conservation efforts but did not adopt a regulatory program to end or reduce bycatch that is comparable in effectiveness to that of the United States, taking into account different conditions.[98] In 2016, NMFS then positively certified Mexico for its actions to reduce loggerhead sea turtle bycatch in the Mexican Gulf of Ulloa gillnet fishery.[99] However, in 2021, NMFS again identified Mexico following reports of significant strandings of loggerhead sea turtles in 2018, 2019, and 2020, despite Mexico's regulations. NMFS concluded Mexico did not have "management measures to end or reduce" loggerhead bycatch "that are comparable to effectives to U.S. regulations."[100]

Further, as noted above, in March 2020 and following our groups' litigation, NMFS determined that Mexico failed to demonstrate comparability for its Upper Gulf of California fisheries due to vaquita bycatch under the MMPA Imports Rule. As a result, NMFS has banned import of shrimp, curvina, sierra, chano, anchovy, herrings, sardines, mackerels croaker, and pilchard fish and fish products caught with gillnets in the vaquita's Upper Gulf of California habitat.[101] Because Mexico has not implemented or enforced a comparable regulatory program and substantial gillnetting continues to occur illegally in the vaquita's habitat, NMFS must maintain its ban.[102]

In 2021, the U.S. State Department again certified Mexico for failing to require the use of sea turtle excluder devices, resulting in another import ban on shrimp. NMFS also negatively certified Mexico for its continued failure to combat unauthorized fishing activities by small hulled vessels (called lanchas) in U.S. waters in the Gulf of Mexico.[103] Effective February 7, 2022 NOAA Fisheries implemented port restrictions on all Mexican fishing vessels that fish in the Gulf of Mexico.[104]

Mexico has a long track record of failing to meet U.S. conservation standards, due to both inadequate laws and enforcement failures. We urge NMFS to carefully assess Mexico's program for effectiveness not only on paper but also in implementation.

1. Ban on Intentional Killing

The MMPA Imports Rule requires that, to export seafood to the United States, Mexico must demonstrate that it "[p]rohibits the intentional mortality or serious injury of marine mammals in the course of commercial fishing in the fishery."[105]

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[98] Addendum to the Biennial Report to Congress Pursuant to Section 403(a) of the Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006. Certification Determination for Mexico's 2013 Identification for Bycatch of North Pacific Loggerhead Sea Turtles

[99] https://www.fisheries.noaa.gov/media-release/statement-eileen-sobeck-positive-certification-mexico-regulations-reduce-loggerhead

[100] NMFS, Report to Congress: Improving International Fisheries Management (Aug. 2021). Available at: https://media.fisheries.noaa.gov/2021-08/2021ReporttoCongressonImprovingInternationalFisheriesManagement.pdf

[101] 85 Fed. Reg. 13,626 (Mar. 9, 2020).

[102] *See* n. X *supra*.

[103] 2021 Biennial Report to Congress on Improving International Fisheries Management. NOAA Fisheries.

[104] https://www.fisheries.noaa.gov/international/international-affairs/report-iuu-fishing-bycatch-and-shark-catch

[105] 50 C.F.R. § 216.24(h)(6)(iii)(C).

It is unclear whether Mexico prohibits intentional killing of marine mammals during commercial fishing. As described above, Mexico's General Law on Wildlife states that "No specimen of marine mammal … may be subject to extractive use" (art. 60 Bis). This provision clearly prohibits the killing and removal of marine mammals for commercial or subsistence use. But it is unclear if the law prohibits killing of marine mammals during fishing, when fishermen have no intention of "using" the marine mammals and instead seek to stop the animals from depredating fish. The General Law on Wildlife defines "extractive use" as "[t]he use of specimens … through collection, capture or hunting" (art. 3). "Capture" is defined as "[t]he extraction of live specimens … from the habitat in which they are found," and mammals killed to stop depredation are not typically pulled live from the water. Hunting is defined as "killing a specimen of wildlife through permitted means," but killing marine mammals during fishing is not typically considered "hunting," as fishermen do not intend to keep the killed marine mammal (*id.*). We urge NMFS to insist that Mexico clarify its legal provision.

Moreover, as also described above, the Mexican Federal Penal Code further authorizes penalties for the illegal capture or damage to marine mammals (art. 420). A penalty may be imposed on anyone who unlawfully captures, harms or kills any specimen of marine mammal, or collects or stores products or by-products in any way. It also assesses penalties for the capture, possession, transport, collection of any specimen of a wild species that is banned, considered endemic, threatened, in danger of extinction, subject to special protection, or regulated by an international treaty to which Mexico is a party, or damage any specimen of the species of wild, terrestrial or aquatic flora or fauna.

It is unclear whether the Federal Penal Code simply provides the penalty for violations of other laws, like the General Wildlife Law, that ban "extractive use" (i.e., collection and capture) of marine mammals and other threatened species or if the Federal Penal Code provides for additional protections or functionally bans take of imperiled marine mammals. We urge NMFS to insist that Mexico clarify its law in this regard.

2. Mexico Does Not Maintain a Regulatory Program "Comparable in Effectiveness" to the U.S. Program for Fisheries

As detailed above, under the MMPA Imports Rule, Mexico must demonstrate it "maintains a regulatory program" for each export fishery "that is comparable in effectiveness to the U.S. regulatory program," including the five components laid out in the Rule and discussed below or that it effectively achieves comparable results as maintaining such a program.[106]

a. Mexico Does Not Conduct Regular Marine Mammal Stock Assessments or Estimate Bycatch for Export Fisheries

The MMPA Imports Rule requires that Mexico demonstrate that it "maintains a regulatory program that provides for . . . [m]arine mammal assessments . . . for stocks . . . that are killed or seriously injured in the fishery" or that the nation achieves "comparable . . . effectiveness" to the U.S. program of annual stock assessments.[107] It is critical that stock assessments for bycaught

[106] 50 C.F.R. § 216.24(h)(6)(iii)(C).
[107] 50 C.F.R. § 216.24(h)(6)(iii)(C).

stocks be conducted; without this information, it is impossible to know whether bycatch is below PBR.

However, Mexico does not have a regulatory program requiring or providing for regular stock assessments, nor are regular stock assessments conducted for almost any species bycaught in Mexican export fisheries. For example, scientists have noted that, in the Gulf of Mexico, "[w]ith the exception of several discrete areas for bottlenose dolphins in select bays and estuaries, population estimates for the Mexican . . . parts of the Gulf are not available."[108] Surveys for the vaquita population have been conducted recently; however, the United States has already banned seafood imports from the vaquita's habitat under the MMPA Imports Rule.

b. Mexico Maintains a Fishery Register

The MMPA Imports Rule requires that export nations either maintain an "export fishery register" listing all fishing vessels in the fishery including time, season, gear type, and target species or effectively achieve comparable results as maintaining such a registry.[109]

The Sustainable Fishing and Aquaculture Law requires that individuals or entities engaged in commercial fishing must be registered under the National Registry of Fisheries and Aquaculture (art. 122). The Registry must contain: (1) the name of the person or entity engaged in fishing or aquaculture; (2) any permits/concessions, including species targeted, fishing gear, quotas and areas of operation; and (3) boats dedicated to fishing activity (art. 122). The legal requirement for this Registry appears to meet the MMPA Imports Rule's requirement, except it is unclear whether the registry states the time/season of fishing for each registrant.

For the LOFF and presumably based on its National Registry of Fisheries, Mexico was able to provide the number of participants, licenses and vessels for most of its export fisheries. However, for some fisheries, Mexico states the number of vessels/licenses/participants is "unknown" (for example, cobia gillnets and pot/traps and croaker/chano trawls), and it is not updated. It is unclear why these fisheries are not in the Registry or why Mexico was unable to provide vessel, license or participant numbers.

c. Mexico Does Not Maintain Adequate Regulatory Requirements for Bycatch

1. Reporting and Monitoring Requirements

The MMPA Imports Rule requires that exporting nations require that vessel operators "report all intentional and incidental mortality and injury of all marine mammals in the course of commercial fishing operations" or achieve comparable results to such a requirement.[110]

In Mexico, there is no requirement to report marine mammal bycatch, except in a few narrow fisheries. As detailed above, the Sustainable Fishing and Aquaculture Law requires that fishing

[108] Würsig, Bernd. "Marine mammals of the Gulf of Mexico." In *Habitats and Biota of the Gulf of Mexico: before the deepwater horizon oil spill*, pp. 1489-1587. Springer, New York, NY, 2017
[109] 50 C.F.R. § 216.24(h)(6)(iii)(C).
[110] 50 C.F.R. § 216.24(h)(6)(iii)(C).

vessels must maintain a logbook (art. 46); however, there is no nationwide requirement to report marine mammal bycatch in the logbook or otherwise. For some fisheries, bycatch of non-target species must be recorded simply as "other species,"[111] without differentiation between marine mammals and fish.

A few Mexican fisheries are required to specify their bycatch. The government of Mexico is a Party to the legally binding, multilateral Agreement on the International Dolphin Conservation Program (AIDCP-IATTC), which entered into force in 1999, as the successor to the 1992 Dolphin Conservation Agreement (the "La Jolla Agreement"). AIDCP rules require Mexico to report dolphin bycatch. The Tuna Tracking System established under the AIDCP tracks the tuna caught in each set from the time it is captured until it is unloaded. Tuna caught in sets in which dolphins are not killed or seriously injured is defined as "dolphin-safe."[112] Mexico has received an affirmative finding from the United States that its tuna meets the criteria set out under the MMPA related to commercial fishing operations by tuna purse seine vessels in the eastern tropical Pacific Ocean[113] and dolphin-safe labeling.[114] The current affirmative finding runs through March 31, 2025.[115]

Moreover, Mexico's September 2020 regulation governing fishing in the vaquita habitat requires that fishermen using small vessels "must inform the Conapesca Fisheries Office" within 24 hours of arriving at port of "any interaction with marine mammals," as well as measures for their release and whether the animal was dead, injured, or retained.[116]

NOM-023-SAG/PESC-2014, which regulates the use of tuna species with longline vessels in waters under federal jurisdiction of the Gulf of Mexico and the Caribbean establishes that "any specimen of dolphin or other marine mammal, sea turtle or bird that could be caught during fishing operations, must be released in the best conditions for survival, being forbidden the retention on board of live, dead or some of their parts."[117] However, the NOM does not require fishermen to record the marine mammal interaction in the logbook.

Official Mexican Standard NOM-001-SAG/PESC-2013,[118] Responsible tuna fishing. Specifications for purse seine fishing operations. This NOM states that the permit or concessions holders for commercial tuna fishing with purse-seine vessels that make sets for the capture of tuna associated with dolphins must additionally comply with the following provisions: "4.2.1 Commercial fishing for tuna associated with dolphins using purse seines may only be carried out with vessels greater than 363 metric tons (400 short tons) of carrying capacity or its equivalent in

[111] *See, e.g.*, Official Mexican STANDARD NOM-029-PESC-2006, Responsible fishing of sharks and rays. Specifications for its use.
[112] https://www.iattc.org/DolphinSafeENG.htm
[113] 50 C.F.R. § 216 (f).
[114] 50 C.F.R. § 216 subpart H.
[115] https://www.fisheries.noaa.gov/national/marine-mammal-protection/tuna-dolphin-embargo-status-update
[116] 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* Art. 5 (Sept. 24, 2020), available at http://www.dof.gob.mx/nota_detalle.php?codigo=5601153&fecha=24/09/2020.
[117] http://www.dof.gob.mx/nota_detalle.php?codigo=5341045&fecha=16/04/2014
[118] https://www.dof.gob.mx/nota_detalle_popup.php?codigo=5329799

m3, for which the Secretariat officially assigns a Dolphin Mortality Limit in accordance with the Agreement on the International Dolphin Conservation Program criteria." Even though there is a prohibition on direct take of dolphins, this is the only fishery where registration of a dead dolphin in the fishing log is required because there is a yearly Dolphin Mortality Rate permitted.

However, we are aware of no other Mexican fisheries that are required to report mortality or injury of marine mammals. Mexico does not meet this MMPA Imports Rule requirement for most export fisheries.

2. Mexico Does Not Require Fishers to Implement Measures to Reduce Mortality and Serious Injury in All Export Fisheries

Next, under the MMPA Imports Rule, Mexico must maintain regulatory requirements that require fishers to implement measures to reduce mortality/serious injury or "effectively achieves comparable results" as requiring such measures.[119]

As described above, Mexico's Sustainable Fishing and Aquaculture Law and its by-law provide clear authority for Conapesca to regulate fisheries, including "[d]ictat[ing] measures for the protection . . . of marine mammals and aquatic species subject to a special protection" and "establish[ing] closures, total or partial" for those species.[120] Those measures can be included in the relevant fisheries' Fisheries Management Plan, Mexican Official Standards, Agreements, acuerdos or permits.

However, Mexico has only issued measures to address marine mammal bycatch in a few fisheries. For fisheries operating within a portion of the Upper Gulf of California habitat, Mexico has adopted a series of measures to reduce vaquita bycatch. These measures include a prohibition on the use and possession of nylon gillnets, a closure of a key vaquita area (the Zero Tolerance Area) to fishing and transit, a prohibition on night fishing, requirements for inspection and designated launch points, and use of vessel monitoring.[121] Our organizations have submitted several letters to NMFS, assessing these regulations for comparability and describing Mexico's utter failure to enforce the regulations.

For tuna fisheries, Conapesca officially assigns a Dolphin Mortality Limit in accordance with the Agreement on the International Dolphin Conservation Program criteria. Even though there is a prohibition on direct take of dolphins, this is the only fishery where registration of a dead dolphin in the fishing log is required because there is a yearly Dolphin Mortality Rate permitted.

Beyond these fisheries, we are not aware of any fisheries operating in Mexican waters for which the Mexican government has required marine mammal bycatch measures. Moreover, even if the Mexican government had adopted bycatch mitigation requirements, illegal fishing is rampant

[119] 50 C.F.R. § 216.24(h)(6)(iii)(C).
[120] Ley General de Pesca y Acuacultura Sustentables, Art. 9o V.
[121] 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.

within Mexico. In 2013, the Mexican Institute for Competitiveness estimated that illegal fishing represented between 45% and 90% of fish caught within Mexican waters.[122] In a recent statement by the president of the National Chamber of the Fishing Industry, illegal fishing was estimated at 40%.[123]

d. Mexico Lacks Monitoring Procedures to Estimate Mortality/Serious Injury from Fisheries

The MMPA Imports Rule also requires Mexico to demonstrate it has monitoring procedures in place to estimate mortality and serious injury for each export fishery both individually and cumulatively for each stock or that the nation effectively achieves comparable results as conducting such monitoring.[124]

The government of Mexico lacks an effective bycatch monitoring system for any fisheries. As described above, the Sustainable Fishing and Aquaculture Law requires that vessels must keep a fishing logbook, though what must be recorded in the logbook depends on the fishery (art 46).[125] For some fisheries, bycatch of non-targeted species must be recorded simply as "other species."[126] However, Conapesca does not require that the fishing logs be attached to the arrival notices unless the regulations explicitly establish it, as in the cases of tuna and shrimp.

A few limited fisheries require fishermen to specify their bycatch: tuna fisheries must record dolphin bycatch, and in the fisheries in the Upper Gulf of California, fishers "must inform … Conapesca … on any interaction with marine mammals, the measures for its release that it has undergone, as well as on the final disposition (released alive or dead, injured or retained with official or scientific justification)" within 24 hours of arrival.[127] Under measures issued in September 2020, fishing vessels operating in the Upper Gulf of California have been required to install and operate vessel monitoring systems.[128] However, Mexico's system for monitoring the resulting data is not currently operative. Reports state that Mexico missed several years of payments to the vessel tracking company, and thus Mexico does not have access to the monitoring data.[129] Indeed, minutes from a recent meeting between fishermen and Mexican authorities confirm "the satellite monitoring system that the registered small vessels have . . . is

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[122] Pesca Ilegal: Una Barrera a la Competitividad. Instituto Mexicano Para la Competitividad A.C. Available at: https://imco.org.mx/pesca_ilegal_una_barrera_a_la_competitividad2/

[123] Gómez Mena, Carolina, Ilegal, más de 40% de la pesca en el país, La Jornada, 28 de febrero de 2018. Available at: https://www.jornada.com.mx/2018/02/28/sociedad/035n2soc

[124] 50 C.F.R. § 216.24(h)(6)(iii)(C).

[125] *Sustainable Fishing and Aquaculture By-Law*, Art. 36.

[126] *i.e.* Official Mexican STANDARD NOM-029-PESC-2006, Responsible fishing of sharks and rays. Specifications for its use.

[127] Art. 5. https://www.dof.gob.mx/nota_detalle.php?codigo=5601153&fecha=24/09/2020

[128] 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*, Art. 6, 7 (Sept. 24, 2020), available at http://www.dof.gob.mx/nota_detalle.php?codigo=5601153&fecha=24/09/2020.

[129] Ernesto Menendez, *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.

not currently in service."[130] 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. The company Pelagic Data Systems ("PDS") installed 937 monitoring devices on vessels in the Upper Gulf.[131] However, by November 2019, 189 of these registered PDS devices – approximately 20% – showed signs of having been removed from the vessel.[132] Further, between November 2019 to June 2020, another 22 devices showed similar signs of having been removed.[133] To date it is unknown how many devices are fully operational.

Beyond fisheries operating in a portion of the Upper Gulf and tuna fishery, we are not aware of any other fisheries for which bycatch monitoring is required or conducted.

e. Mexico Has Not Published a Bycatch Limit for Its Export Fisheries

The MMPA Imports Rule requires Mexico to calculate a bycatch limit for marine mammals taken in each fishery.[134] The "bycatch limit" is PBR or a "comparable scientific metric."[135] Because Mexico does not conduct regular surveys of all marine mammal stocks that interact with its export fisheries and does not monitor bycatch, it is not currently possible for Mexico to calculate a reliable and justifiable bycatch limit for its export fisheries.

f. Mexico Cannot Demonstrate that Serious Injury/Mortality from Export Fisheries Is Below the Bycatch Limit

Finally, the MMPA Imports Rule requires that Mexico demonstrate that mortality/serious injury from the fishery and cumulatively with other export fisheries "[d]o not exceed the bycatch limit."[136]

Based on our assessment, Mexico will not be able to demonstrate that mortality/serious injury from its export fisheries "[d]o not exceed the bycatch limit." Even if Mexico had the data to calculate PBR, because it does not appear to adequately monitor all bycatch, it will not be able to demonstrate that bycatch does not exceed PBR for each export fishery.

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[130] Meeting between fishermen representatives and government officials, Minuta de Trabajo (Sept. 30, 2020), available at: shorturl.at/uAM28.
[131] In Gulf of Santa Clara in Sonora, 454 devises were installed, 342 in San Felipe, 47 in Bajo Río, and 94 in the Cucapá Indigenous Community in Baja California.
[132] 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.
[133] Conapesca Response to Information Request No. 0819700022020 (June 20, 2020), available at shorturl.at/mxGQX.
[134] 50 C.F.R. § 216.24(h)(6)(iii)(C).
[135] 50 C.F.R. § 216.3.
[136] 50 C.F.R. § 216.24(h)(6)(iii)(C).

g. Specific fisheries

Below, we discuss several specific export fisheries and bycatch concerns therein.

Snappers *(Lutjanidae spp.)*

There are several apparent inaccuracies in NMFS's 2020 LOFF. For example, deep-water red snapper *Etelis carbunculus* is listed as both an exempt and export fishery for Mexico; however, the species does not inhabit Mexico. Its distribution is in Indo-Pacific: East Africa to the Hawaiian Islands, north to southern Japan, and south to Australia.[137]

More importantly, no other species of snapper is included either in the "exempt" or "export" fisheries on NMFS's LOFF, despite evidence that snapper is exported to the United States. For example, according to NMFS's seafood trade database, the U.S. imported 5,943,418 kg of "SNAPPER (LUTJANIDAE SPP.) FRESH (HTS code 302895058)" from Mexico in 2020, valued at $44,569,473,[138] and from this, at least 35,920 kg entered through land from Mexico to Nogales, Arizona,[139] which suggests that those fish are being caught in the Gulf of California.

Indeed, the spotted rose snapper (*Lutjanus guttatus*) is an important resource for fisheries of the Gulf of California. Approximately, 136 tons are captured annually in the area, representing an economic value of MX$4 million. The coastal fishery employs 300-m long gillnets with 102 mm mesh size; nets are left approximately 10 hours in the water, from sunset to sunrise,[140] which presents a significant marine mammal bycatch risk. Off the Mexican Pacific coast, fisheries capture snapper using gillnets.[141] In the Pacific coast state of Guerrero, the dominant pelagic–coastal species captured with gillnets is *Lutjanus guttatus*.[142] In catch surveys using gillnets in Bahía Navidad, on the central Pacific coast of México, *Lutjanus guttatus* was the second most dominant species.[143]

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[137] Etelis carbunculus, Deep-water red snapper : fisheries, gamefish (fishbase.se) https://www.fishbase.se/summary/Etelis-carbunculus

[138] NOAA. Foreign Fishery Trade Data

[139] *Id.*

[140] Szedlmayer, S. T., Mudrak, P. A., & Jaxion-Harm, J. (2019). A comparison of two fishery-independent surveys of Red Snapper, *Lutjanus campechanus*, from 1999–2004 and 2011–2015. In *Red Snapper biology in a changing world* (pp. 249-274). CRC Press; Valle-Lopez, F. L., Moreno-Sánchez, X. G., Irigoyen-Arredondo, M. S., Abitia-Cárdenas, L. A., Marín-Enríquez, E., & Ramírez-Pérez, J. S. (2021). Feeding habits of the spotted rose snapper, *Lutjanus guttatus*,(Actinopterygii, Perciformes, Lutjanidae), in the central Gulf of California, BCS, Mexico. *Acta Ichthyologica et Piscatoria*, *51*, 95.

[141] González-Ochoa, O. A., López-Martínez, J., & Hernández-Saavedra, N. Y. (2009). Características poblacionales del pargo lunarejo *Lutjanus guttatus* capturado con la fauna de acompañamiento del camarón en el golfo de california. Interciencia, 34(11), 808-813.

[142] Palacios-Salgado, D. S., Ramírez-Valdez, A., Rojas-Herrera, A. A., Amores, J. G., & Melo-García, M. A. (2014). Marine fishes of Acapulco, Mexico (Eastern Pacific Ocean). *Marine Biodiversity*, *44*(4), 471-490.

[143] Rojo Vázquez, J.A. & M. Ramírez Rodríguez. 1997. Composición específica de la captura con redes de enmalle en bahía de Navidad, Jalisco, México. Oceánides, 12(2): 121-126

In the southwestern Gulf of California, yellow snapper (*Lutjanus argentiventris*) is also usually fished with gillnets, hook and line, spear fishing and trawl nets.[144] In the southeastern area of the Gulf of California, 8.9 cm mesh size gillnets are typically used. Gillnets are more frequently used in families Carangidae and Lutjanidae.[145]

In Mexico, snapper (Lutjanidae) are economic and ecologically important fishery species and can be highly abundant throughout their range, yet there is a lack of information on the fisheries' management. The fisheries have not been classified as overexploited or subjected to overexploitation, thus no closed season or other limitation have been established.[146] In general, oceanic snapper lack Fishery Management Plans (FMP). There is only one FMP for *L. argentiventris, L. colorado* and *L. novemfasciatus* that inhabit the coastal lagoons of Marismas Nacionales, in Nayarit and Sinaloa states where hooks and gillnets are used.[147]

The Mexican National Fisheries Charter does not identify Pacific snapper as a target fishery. It identifies *L. griseus, L. analis, L. campechanus, L. cyanopterus, L. griseus, L. jocu* and *L. synagris* as gillnet-caught bycatch of the jacks *Caranx latus, Caranx hippos* and *Caranx crysos*.[148]

Accordingly, the gillnet capture of all Pacific oceanic snapper is not considered a target fishery in Mexican regulations. Fishing permits are given for "fish" in general, consequently there is a lack of: a) stock assessments of marine mammals that are bycaught in the fishery, b) a register of the number of vessels in the fishery, plus the season, area, gear type and target species, c) legally required measures to reduce bycatch, d) monitoring to estimate injury and mortality of marine mammals; and e) bycatch in the fishery is below PBR or a "comparable scientific metric" or standard in an applicable regional fisheries management organization.

For the Gulf of Mexico, red snapper (*L. campechanus*)*, silk snapper* (*L. vivanus*) and black fin snapper (*L. bucanella*) have no FMP and the fishing effort is unknown. In Tabasco the fishery is at its maximum sustainable yield and in Tamaulipas, Veracruz, Campeche and Yucatán yield is

[144] Piñón, A., Amezcua, F., & Duncan, N. (2009). Reproductive cycle of female yellow snapper *Lutjanus argentiventris* (Pisces, Actinopterygii, Lutjanidae) in the SW Gulf of California: gonadic stages, spawning seasonality and length at sexual maturity. *Journal of Applied Ichthyology*, *25*(1), 18-25.
[145] Torrescano-Castro, C. G., Lara-Mendoza, R. E., Torres-Covarrubias, L. A., & Cortes-Hernandez, M. (2016). Ichthyofauna catch composition in a small-scale fishery from Isabel Island (southeastern Gulf of California), Mexico. *Latin American Journal of Aquatic Research*, *44*(4), 792-799.
[146] Reguera-Rouzaud, N., Díaz-Viloria, N., Pérez-Enríquez, R., Espino-Barr, E., Rivera-Lucero, M. I., & Munguía-Vega, A. (2020). Drivers for genetic structure at different geographic scales for Pacific red snapper (*Lutjanus peru*) and yellow snapper (*Lutjanus argentiventris*) in the tropical Eastern Pacific. *Journal of Fish Biology*.
[147] ACUERDO por el que se expide el Plan de Manejo Pesquero de robalo garabato (*Centropomus viridis*), pargo colorado (*Lutjanus colorado*) y curvinas en marismas nacionales, Nayarit y Sur de Sinaloa. April 12, 2021. Avaliable at: http://www.dof.gob.mx/nota_detalle.php?codigo=5615590&fecha=12/04/2021
[148] Acuerdo por el que se da a conocer la actualización de la Carta Nacional Pesquera. June 11, 2018. Available at: http://www.dof.gob.mx/nota_detalle.php?codigo=5525712&fecha=11/06/2018

deteriorating.[149] These 3 snapper species are fished with bottom vertical line and long line.[150] There are recorded interactions (death and permanent injuries) with these gears.[151]

L. campechanus is classified as vulnerable in the Gulf of Mexico by the International Union for Conservation of Nature (IUCN Red List) because it has a decreasing population trend due to heavy exploitation by recreational and commercial fisheries[152]

Groupers nei (*Epinephelus* spp)

Grouper species are listed as an "exempt fishery;" however, in Mexico, *Epinephelus striatus*, which is commonly found off the eastern Yucatan Peninsula in the northern part of the Mesoamerican Barrier Reef System, is fished during its spawning aggregations, and fishers have exploited them for more than 70 years using gears including hook and line, spear gun and gillnets.[153, 154] If grouper is caught with gillnets, bycatch is likely to happen, thus grouper should be deemed an export fishery, not exempt. The US has imported this species from Mexico since 2014 (HTS codes 302895061 for fresh and 303890070 for frozen grouper). In 2021 imports of fresh grouper were 3,253,189 kg, worth $32,192,372. In 2020, another 124,450 kg of frozen grouper were imported to the US (HTS code 303890070).[155]

Tuna

Bigeye tuna (*Thunnus obesus*), Pacific bluefin tuna (*Thunnus orientalis*), and yellowfin tuna (*Thunnus albacares*) are listed as exempt fisheries under LOFF because the fisheries are considered to use aquaculture production. However, this aquaculture practice is known as tuna "ranching"[156] where farmers capture tuna juveniles in the wild and raise them to maturity before shipping them to market. This practice should be considered a wild-capture fishery, not an aquaculture facility.

In Mexico there are at least 12 concessions for tuna ranching: Acuacultura de Baja California, S. A. de C. V., Administradora Pesquera del Noroeste, S. A, de C. V., Baja Aqua Farms, SA de CV Bajamachi, SA de CV, Darcuicola, SA de CV, Intermarketing de México, SA de CV, Maricultura del Norte, SRL de CV, Mexican Bluefin, SA de CV, Operadora Pesquera de

[149] *Id.*
[150] *Id*
[151] Valle-Esquivel, M., Adlerstein-González, S., & Chávez-Villegas, J. F. (2019). Pre-Assessment of the Red Snapper (Lutjanus campechanus) Fishery in the Campeche Bank, Gulf of Mexico, Mexico, using Bottom and Vertical Longlines.
[152] Anderson, W., Claro, R., Cowan, J., Lindeman, K., Padovani-Ferreira, B. & Rocha, L.A. 2015. Lutjanus campechanus (errata version published in 2017). The IUCN Red List of Threatened Species 2015: e.T194365A115334224. https://dx.doi.org/10.2305/IUCN.UK.2015-4.RLTS.T194365A2322724.en. Accessed on 14 April 2022.
[153] Aguilar-Perera, A. L. F. O. N. S. O., González-Salas, C. A. R. L. O. S., & Villegas-Hernandez, H. A. R. O. L. D. (2009). Fishing, management, and conservation of the Nassau Grouper, *Epinephelus striatus*, in the Mexican Caribbean.
[154] Aguilar-Perera, A. (2006). Disappearance of a Nassau grouper spawning aggregation off the southern Mexican Caribbean coast. *Marine Ecology Progress Series*, *327*, 289-296.
[155] NOAA. Foreign Fishery Trade Data
[156] See: https://bajaaquafarms.com/about-us/

Oriente, SACV, Rancho Marino Guadalupe, SA de CV, Tunamax, SA de CV, Servax Bleu, S. de R. L. de CV. These farms fatten wild organisms that are captured in the natural environment for a period of approximately five months.[157] The most recent National Aquaculture Charter references sea lion interactions with the pens.

VIII. Conclusion and Recommendation

In summary, Mexico has a substantial fishing industry, and the United States is Mexico's largest seafood export market.[158] Mexico exported over 90 million kilograms of edible seafood to the U.S. in 2020, worth over $615 million,[159] with tuna, shrimp, sardines and snapper among largest U.S. exports. With its high diversity of marine mammal species, bycatch almost certainly occurs within Mexican export fisheries, though little bycatch is documented because bycatch is not reported or monitored.

As described in this report and based on publicly available information, Mexico will be unable to demonstrate that it meets the U.S. MMPA Imports Rule, and thus Mexico should face a ban for most of its export fisheries.[160] It is unlikely that Mexico will be able to demonstrate numerous components of the Rule: Mexico does not conduct marine mammal surveys for all stocks affected by export fisheries; does not maintain regulatory requirements for bycatch, including requiring reporting, mitigation measures, or bycatch monitoring in almost any export fisheries; and has not published a bycatch limit for its export fisheries. Even if Mexico's regulatory program was adequate on paper, illegal fishing is rampant within the nation. As such, Mexico will be unable to demonstrate that marine mammal serious injury and mortality from its export fisheries does not exceed a scientifically supportable bycatch limit and a ban on most Mexican seafood exports is appropriate.

[157] Moreno Neri, J. D. J., Obregón Angulo, M. D. M., & Arellano Zepeda, S. A. (2018). Proceso De Valoración De Riesgos Para Ranchos Marinos De Engorda De Atún Aleta Azul: Evidencia De Baja California (Valuation of Risks Processes for Marine Ranches of Fattening Bluefin Tuna: Evidence from Baja California). Revista Global de Negocios, 6(1), 55-66.

[158] The data is provided by Causa Natura A.C. through the National Platform for Transparency (PNT) of the National Institute for Transparency, Access to Information and Protection of Personal Data (INAI).

[159] NOAA Fisheries, Trade Statistics: Mexico Exports for 2020. Available at: https://www.fisheries.noaa.gov/foss/f?p=215:2:12466706978785::NO:::.

[160] NMFS has already deemed Mexico's regulatory program governing gillnet fisheries operating the Upper Gulf of California as not comparable and has banned seafood imports from those fisheries. 85 Fed. Reg. 13,626 (Mar. 9, 2020). As described throughout this assessment and our previous submissions to NMFS, we urge NMFS to maintain this ban.