Submission filed with the Commission for Environmental Cooperation pursuant to the provisions of Chapter 24 of the United States-Mexico-Canada Agreement

Failure to effectively enforce environmental law for the protection and conservation of the Loggerhead Turtle (*Caretta caretta*), a species listed as endangered

#### Submitters

The Mexican Center for Environmental Law

The Center for Biological Diversity

# Centro Mexicano de Derecho Ambiental, A.C.

Address: Atlixco número 138, colonia Condesa, delegación Cuauhtémoc, en la Ciudad de México, C.P.

06140.

Ph.: 55 52 86 33 23

Email: sanchezm@cemda.org.mx

# **Center for Biological Diversity**

Address: 2400 NW 80th Street, #146, Seattle, WA 98117

Ph:+1 (206) 327-2344

Email: suhlemann@biologicaldiversity.org

#### **INDEX**

Introduction	1
I. Statement of the problem	2
II. The facts	3
III. Applicable laws	9
IV. Failure to effectively enforce environmental law	11
V. Compliance with the requirements of USMCA Chapter 24 and the case factual record	e for the preparation of a 14
VI. Bibliography	16

#### INTRODUCTION

This submission has been filed under Article 24 of the United States-Mexico-Canada Agreement by the Mexican Center for Environmental Law (*Centro Mexicano de Derecho Ambiental A.C.*—CEMDA) and the Center for Biological Diversity ("the Submitters") with the purpose of petitioning the Commission for Environmental Cooperation (CEC) to prepare a factual record documenting the systematic failure to comply with and effectively enforce environmental law, on the part of the Ministry of the Environment and Natural Resources (*Secretaría del Medio Ambiente y Recursos Naturales*—Semarnat), acting in coordination with the Federal Attorney for Environmental Protection (*Procuraduría Federal de Protección al Ambiente*—Profepa), the National Commission for Protected Natural Areas (*Comisión Nacional de Áreas Naturales Protegidas*—Conap) and the National Commission for the Knowledge and Use of Biodiversity (*Comisión Nacional para el Conocimiento y Uso de la Biodiversidad*—Conabio), in relation to the due protection and conservation of the loggerhead turtle (*Caretta caretta*), an endangered species.

We, the Submitters, have an interest in effective compliance with environmental law in relation to the protection and conservation of the loggerhead turtle (*Caretta caretta*) by virtue of the societal purpose, which we share, of promoting the preservation and conservation of ecosystems and biodiversity, and the preservation and restoration of ecological balance. In effect, ours is a collective, qualified, current, real and legally relevant interest in that we seek compliance with the law and the protection of the loggerhead turtle, cognizant that failure to do so will negatively impact biodiversity and ecological balance, thereby jeopardizing the right to a healthy environment, which is essential to the fulfillment of other human rights.

Specifically, Mexican authorities have failed to effectively enforce environmental law for the protection and conservation of the loggerhead turtle (*Caretta caretta*), an endangered species, which is a priority for conservation. In effect, from 2017 to 2019, 889 loggerhead turtle specimens were caught in the Gulf of Ulloa, Baja California Sur. Said fact demonstrates that there exists no effective compliance with the following provisions of environmental law: Article 4 of the Political Constitution of the United Mexican States (*Constitución Política de los Estados Unidos Mexicanos*—"the Constitution"); Articles 5 paragraph XIX, 161, 171, 182 and 202 of the General Ecological Balance and Environmental Protection Act (*Ley General de Equilibrio Ecológico y la Protección al Ambiente*—LGEEPA); Articles 5 paragraphs I, II, III and IX, 9 paragraphs I, VII, X, XV, XXI, 60, 60 bis 1, 61, 62 and 104 of the General Wildlife Act (*Ley General de Vida Silvestre*—LGVS); Articles 2 paragraph III and 10 of the Federal Environmental Liability Act (*Ley Federal de Responsabilidad Ambiental*—LFRA); Articles 5, 45 and 70 of the Internal Regulation of the Ministry of the Environment and Natural Resources (*Reglamento Interior de la Secretaría de Medio Ambiente y Recursos Naturales*—RI-Semarnat); Articles II and IV of the Inter-American Convention for the Protection and Conservation of Sea Turtles; Articles 7, 8 and 14 of the

Convention on Biological Diversity; Article 11 of the Additional Protocol to the American Convention on Human Rights in the Area of Economic, Social and Cultural Rights (Protocol of San Salvador); the Order establishing a closed season on sea turtle species and subspecies in waters under federal jurisdiction in the Gulf of Mexico and the Caribbean, as well as in the Pacific Ocean, including the Gulf of California (Acuerdo por el que se establece veda para las especies y subespecies de tortuga marina en aguas de jurisdicción Federal del Golfo de México y Mar Caribe, así como en las del Océano Pacífico, incluyendo el Golfo de California—"the Closed Season Order"); the Order on publicizing the list of priority species and populations for conservation (Acuerdo por el que se da a conocer la lista de especies y poblaciones prioritarias para la conservación—"the Priority Species Order); Official Mexican Standard NOM-059-Semarnat-2010, Environmental Protection - Native wildlife species of Mexico - Risk categories and specifications for the inclusion, exclusion or change in category of species – List of threatened species; and the Action Program for the Conservation of the Loggerhead Turtle Species (Programa de Acción para la Conservación de la Especie Tortuga Caguama).

#### Statement of the problem

In the North Pacific, loggerhead turtles emerge from nesting beaches in Japan and travel to juvenile habitats in the waters of the north central Pacific. An unknown proportion then travels to the eastern Pacific, where there exists a feeding "hotspot" off the Pacific coast of the Baja California Peninsula. This area is characterized by an abundance of marine species that are exploited using different fishing methods and equipment, which sometimes affect sea turtle populations. As attests recorded cases of thousands of stranded or dead specimens, a phenomenon associated with bycatch and fishing for human consumption. <sup>2</sup>

In fact, the location with the highest incidence of mortality in Mexico is the Gulf of Ulloa, where hundreds of turtles and other animals are found dead every year.<sup>3</sup> According to Profepa's official data, there were 789 loggerhead turtle deaths from 2017 to 2019. More specifically, 331 loggerhead turtles were found dead in 2019, along with specimens of other species, including 10 dolphins, 15 sea lions, 131 black sea turtles (*Chelonia agassizii*), 18 olive ridley sea turtles (*Lepidochelys olivacea*) and 6 whales. In 2018, 459 loggerhead turtle and 97 black sea turtle deaths were recorded. Finally, in 2020, yet another 351 loggerhead turtle deaths were recorded between January and June.<sup>4</sup>

Other causal factors of sea turtle mortality exist, including, notably, natural predators, vessel collisions,<sup>5</sup> ingestion of anthropogenic marine litter and toxic contaminants,<sup>6</sup> environmental factors, nutritional conditions

<sup>&</sup>lt;sup>1</sup> Heather Welch, E.L. Hazen, D.K. Briscoe, S.J. Bograd, M.G. Jacox, T. Eguchi, ... & H. Bailey, "Environmental indicators to reduce loggerhead turtle bycatch offshore of Southern California," *Ecological Indicators* 98, 9 (2019): 657-664.

<sup>&</sup>lt;sup>2</sup> Eduardo Reséndiz and María Lara-Uc, "Analysis of post mortem changes in sea turtles from the Pacific Coast of Baja California Sur using forensic techniques," *Revista Bio Ciencias* 4, 4 (2017): 1-14.

Reséndiz, "Analysis of post mortem..."; S. H. Peckham, D. Maldonado-Diaz, V. Koch, A. Mancini, A. Gaos, M.T. Tinker, & W.J. Nichols, "High mortality of loggerhead turtles due to bycatch, human consumption and strandings at Baja California Sur, Mexico, 2003 to 2007," *Endangered Species Research* 5, 2 (2018):171-183.

<sup>&</sup>lt;sup>4</sup> Profepa's response to information request 1613100053220, which included a species mortality report from Playa San Lázaro, Gulf of Ulloa, for the years 2017 to 2020 https://bit.ly/32stEp0

<sup>&</sup>lt;sup>5</sup> Thierry M. Work, G.H. Balazs, M. Wolcott and R. Morris, 2003. "Bacteraemia in free-ranging Hawaiian green turtles *Chelonia mydas* with fibropapillomatosis," *Diseases of Aquatic Organisms* 53, 1 (2003): 41-46.

<sup>&</sup>lt;sup>6</sup> Jennifer M. Keller, J.R. Kucklick, A. Stamper, C. Harms and P.D. McClellan-Green, "Associations between organochlorine contaminant concentrations and clinical health parameters in Loggerhead Sea turtles from North Carolina, USA," *Environmental Health Perspective* 112, 10 (2004): 1074–1079.

<sup>&</sup>lt;sup>7</sup> Thierry M. Work and G. H. Balazs, "Pathology and distribution of sea turtles landed as bycatch in the Hawaii-based North Pacific pelagic long line fishery," *Journal of Wildlife Diseases* 46, 2 (2010): 422-432.

and metabolic and infectious diseases, 7 as well as others which have not been documented in the region.

In a 2017 study<sup>8</sup> on the causes of sea turtle mortality in the Gulf of Ulloa region, the cause of death for 28% of the specimens analyzed was attributed to bycatch. Another 22% was attributed to fishing for human consumption. In the remaining 50%, it was not possible to determine<sup>9</sup> the cause of death due to the specimens' advanced states of decomposition.

The Government of Mexico has recognized that the loggerhead turtle population in the north Pacific "is experiencing a significant reduction in its numbers in recent years" and that it is considered "endangered" by the IUCN. The Mexican government has determined that: "the death of over 92 subadults [among loggerhead turtles] per year, in the Pacific Ocean as a whole, seriously increases this population's risk of extinction." Recent deaths widely exceed this death rate.

In light of these issues, it is evident that **Mexico is not in compliance with environmental law in relation to the protection and conservation of the loggerhead turtle (***Caretta caretta***), a species listed as threatened with extinction.** In effect, Semarnat, Profepa, Conanp and Conabio **have failed to demand efficient and effective compliance with national and international environmental law.** More specifically, they are putting at risk the loggerhead turtle's biological viability by permitting the destruction or drastic modification of its habitat and its non-sustainable exploitation (through bycatch and fishing for human consumption), among other impacts, which thereby result in irreparable harm.

Semarnat, in coordination with Conanp, is the authority responsible for carrying out the administrative measures necessary to ensure sea turtles conservation, through the implementation of environmental law, along with the National Sea Turtles Conservation Program (*Programa Nacional de Conservación de Tortugas Marinas*) and other instruments for the conservation and protection of this species.

In addition, Conanp, in collaboration with Conabio, manages Action Programs for Species Conservation, which define particular activities that may contribute to the conservation and recovery of selected priority species. To this end, these programs also compile and integrate the relevant information. An Action Program for Loggerhead Turtle Conservation was instituted in 2011 and subsequently updated in 2018.<sup>10</sup>

Profepa is a decentralized Semarnat agency charged with the monitoring, inspection and verification of compliance with environmental law. Its principal task is to increase the observance of environmental regulations and thereby contribute to sustainable development and enforcement of compliance with environmental laws. Moreover, one of its functions is to initiate actions when apprised of violations of environmental law and, if need be, levy the appropriate fines or penalties. Unfortunately, Profepa has not complied with its monitoring role. Nor has it exercised the powers vested in it to enforce compliance with environmental law.

Reséndiz, "Analysis of post mortem changes..."

<sup>&</sup>lt;sup>9</sup> Eduardo Reséndiz and María Lara-Uc, "Analysis of post-mortem changes in sea turtles from the Pacific Coast of Baja California Sur using forensic techniques," *Revista Bio Ciencias* 4 (2017), 22 pages, ID 04.04.06. <a href="http://editorial.uan.edu.mx/BIOCIENCIAS/article/view/267/293">http://editorial.uan.edu.mx/BIOCIENCIAS/article/view/267/293</a>

<sup>&</sup>lt;sup>10</sup> To review the Action Program, see: <a href="https://www.gob.mx/conanp/documentos/programa-de-accion-para-la-conservacion-de-la-especie-tortuga-caguama-caretta-caretta">https://www.gob.mx/conanp/documentos/programa-de-accion-para-la-conservacion-de-la-especie-tortuga-caguama-caretta-caretta</a>

<sup>&</sup>lt;sup>11</sup> For Profepa's mission statement, see: https://www.gob.mx/profepa/que-hacemos

Specifically, the Mexican authorities have failed to fulfill their responsibilities in the protection and conservation of the loggerhead turtle, and have not required effective compliance with the following provisions: Article 4 of the Constitution; LGEEPA Articles 5 paragraph XIX, 161, 171, 182 and 202; LGVS Articles 5 paragraphs I, II, III and IX, 9 paragraphs I, VII, X, XV, XXI, 60 and 104; LFRA Articles 2 paragraph III and 10; Articles II and IV of the Inter-American Convention for the Protection and Conservation of Sea Turtles; Articles 7, 8 and 14 of the Convention on Biological Diversity; Article 11 of the Additional Protocol to the American Convention on Human Rights in the Area of Economic, Social and Cultural Rights (Protocol of San Salvador).

The Submitters are filing this submission pursuant to Article [24.27] of Chapter 24 the United States-Mexico-Canada Agreement and hereby respectfully request that the CEC prepare a factual record in order to examine Mexico's systematic non-compliance with environmental law and related international treaties.

We, the Submitters have an interest in effective compliance with environmental law in relation to the protection and conservation of the loggerhead turtle (*Caretta caretta*) by virtue of the social purpose, which we share, of promoting the preservation and conservation of ecosystems and biodiversity, and the preservation and restoration of ecological balance. In effect, ours is a collective, qualified, current, real and legally relevant interest in that we seek compliance with the law and the protection of the loggerhead turtle, cognizant that failure to do so will negatively impact biodiversity and ecological balance, thereby jeopardizing the right to a healthy environment, which is essential to the fulfillment of other human rights.

#### II. THE FACTS

As mentioned above, Mexican territorial waters are one of the locations where practically all known sea turtles gather. This is the case for the waters off the west coast of Baja California Sur, especially in the Gulf of Ulloa, where marine species are abundant and abundantly exploited. This has affected the loggerhead turtle population, as attests the hundreds of dead turtles found every year. Moreover, this situation obtains despite the various instruments listed below which attach importance to the conservation and protection of this species:

- 1. The Protocol of San Salvador, signed on 17 November 1988 and ratified on 16 April 1996. Article 11 of this protocol establishes that everyone shall have the right to live in a healthy environment. To that end, the States Party shall promote the protection, preservation and improvement of the environment.
- 2. The Closed Season Order,<sup>12</sup> which establishes a total and indefinite closed season for the species of sea turtles present in waters under federal jurisdiction. Under this order, it is strictly prohibited to "extract, capture, chase and disturb or harm in any form any species or subspecies of sea turtle." Furthermore, this instrument requires that an assessment be done of the magnitude and effects of sea turtle bycatch and decrees the reduction of said phenomenon. In short, the objective of the Closed Season Order is the protection, conservation, propagation and recovery of sea turtles populations.

Published in *Diario Oficial de la Federación* on 31 May 1990. To review the Closed Season Order, see: <a href="https://www.dof.gob.mx/nota\_to\_imagen\_fs.php?codnota=4658226&fecha=31/05/1990&cod\_diario=200570">https://www.dof.gob.mx/nota\_to\_imagen\_fs.php?codnota=4658226&fecha=31/05/1990&cod\_diario=200570</a>

- 3. Order creating a standing Inter-ministerial Commission for the Protection and Conservation of Sea Turtles (Acuerdo por el que se crea con carácter permanente la Comisión Intersecretarial para la Protección y Conservación de las Tortugas Marinas)<sup>13</sup> in order to coordinate the actions of the different agencies in the Federal Public Administration, in relation to sea turtle research, protection, conservation and rescue activities.
- **4.** On 28 June 1999, a new paragraph was added to Article 4 of the Constitution, which recognized the right to a healthy environment. On 8 February 2012, this paragraph took its current form: "Every person has the right to a healthy environment for his or her development and wellbeing. The State shall ensure the observance of this right. Environmental damage and deterioration shall generate liability on the part of whomever causes it in the terms of the provisions of the law."
- 5. Ratification of the *Inter-American Convention for the Protection and Conservation of Sea Turtles.*<sup>14</sup> In accordance with the importance of protecting these species in the habitats where the different periods of their lives unfold, this instrument enshrines a binding prohibition on the [incidental] capture, retention or killing of sea turtles, and a restriction of human activities that could affect sea turtles during the periods of reproduction, nesting and migration.

Furthermore, this Convention establishes the obligation to protect, conserve and restore the habitat and sites established and designated as protected areas and minimize as far as possible the incidental capture, retention, harm or mortality of sea turtles in the course of fishing activities.

**6.** The General Wildlife Act (LGVS), <sup>15</sup> which has as its objective the conservation of wildlife and wildlife habitat, through protection measures and the requiring of optimal levels of sustainable exploitation, while maintaining and promoting the restoration of the diversity and integrity thereof. To these ends, the authorities shall, pursuant to Article 5, make provisions for: the conservation of genetic diversity, as well as the protection, restoration and comprehensive management of natural habitats, as principal factors for the conservation and recovery of wildlife species; measures conducive to the evolution, viability and continuity of ecosystems, habitats and populations in their natural surroundings; and the application of scientific, technical and traditional knowledge to develop activities in relation to conservation and sustainable wildlife exploitation.

In effect, to achieve the objective of comprehensive conservation management, it is essential to have at one's disposal the studies and scientific and technical information required to make appropriate decisions on wildlife ecosystems, habitats and populations to ensure their protection, restoration, management, conservation and recovery.

<sup>&</sup>lt;sup>13</sup> Published in *Diario Oficial de la Federación* on 12 December 1993. To review the Order, see: <a href="http://dof.gob.mx/nota\_detalle.php?codigo=4808955&fecha=02/12/1993">http://dof.gob.mx/nota\_detalle.php?codigo=4808955&fecha=02/12/1993</a>

<sup>&</sup>lt;sup>14</sup> Published in *Diario Oficial de la Federación* on 10 July 2001. To review the Convention, see: https://aplicaciones.sre.gob.mx/tratados/ARCHIVOS/TORTUGAS\_MARINAS.pdf

<sup>&</sup>lt;sup>15</sup> Published in *Diario Oficial de la Federación* on 3 July 2000. To review the LGVS, see: http://www.diputados.gob.mx/LevesBiblio/ref/lgvs.htm

- a. Decree ordering the addition of Article 60 to the General Wildlife Act, <sup>16</sup> which establishes that Semarnat shall promote and encourage the conservation and protection of threatened species and populations through the development of conservation and recovery projects, the establishment of special management and conservation measures for critical habitats and refuges to protect aquatic species, the coordination of sampling and permanent monitoring programs, and the certification of sustainable use activities, with the participation, where appropriate, of the persons who manage said species or populations and other stakeholders.
- b. Pursuant to LGVS Article 61 Semarnat shall make and publish a list of priority conservation species to promote the development of projects for the conservation and recovery thereof, along with that of their ecosystems, habitats and associated species. This is not a list of threatened species (as per NOM-059-Semarnat-2010). Rather, it is a list of species conducive to further broadening conservation efforts.

The loggerhead turtle (Caretta caretta) is listed in the Priority Species Order. 17

- c. Under LGVS Article 56, Semarnat is charged with making lists to identify threatened species or populations, pursuant to the provisions of the corresponding Official Mexican Standard. Said lists shall be reviewed and, if need be, updated every three years, if not before, should sufficient new information require the inclusion, exclusion or change of category of any species or population.
- **d.** Likewise, under LGVS Title VI Wildlife Conservation, Chapter I Threatened Species and Populations Designated as Conservation Priorities, shall be included among threatened species and populations those identified as: a) in danger of extinction, b) threatened, c) subject to special protection, and d) probably extinct in the wild.

In addition, pursuant to the same provision, *Mexican Official Standard NOM-059-Semarnat-2010, Environmental protection – Native wildlife species of Mexico - Risk categories and specifications for their inclusion, exclusion or change of risk category - List of threatened species,<sup>18</sup> identifies threatened wildlife species or populations in Mexico, makes lists accordingly and establishes the criteria for the inclusion, exclusion or change of risk category of species and populations through a methodology for the evaluation of risk of extinction.* 

The loggerhead turtle (*Caretta caretta*) is listed as a species threatened with extinction, which implies that the size of its population in Mexico has fallen drastically, i.e., to such an extent that its biological viability has been put at risk throughout its natural habitat, due to factors such as the destruction or drastic modification of habitat, non-sustainable exploitation,

<sup>&</sup>lt;sup>16</sup> Published in *Diario Oficial de la Federación* on 10 January 2002. To review the decree, see: http://www.diputados.gob.mx/LevesBiblio/ref/lgvs.htm

<sup>&</sup>lt;sup>17</sup> Published in *Diario Oficial de la Federación* on 5 March 2014. To review the Priority Species Order, see: <a href="http://dof.gob.mx/nota\_detalle.php?codigo=5334865&fecha=05/03/2014">http://dof.gob.mx/nota\_detalle.php?codigo=5334865&fecha=05/03/2014</a>

<sup>&</sup>lt;sup>18</sup> Published in *Diario Oficial de la Federación* on 30 December 2010. To review the Official Standard, see:

diseases or natural predators, etc. This determination was made in accordance with LGVS Article 58(a).

- d. Similarly, the Threatened Species Conservation Program (*Programa de Conservación de Especies en Riesgo*—Procer) was instituted, pursuant to the LGVS, as an instrument focusing solely on species threatened with extinction in Mexico, in the interests of their recovery, as well as that of populations of associated species in the same habitat. "Umbrella species" are selected with the aim of ensuring that proposed actions enable the recovery of said species along with others which perform important functions in the ecosystem. Specifically, Action Programs for Species Conservation (PACE) identify specific activities that contribute to the conservation and recovery of particular species. Thus, the Action Program for the Conservation of the Loggerhead Turtle Species (*Programa de Acción para la Conservación de la Especie Tortuga*), updated in 2018, <sup>19</sup> is an example within the Procer/PACE framework in the specific form of project no. *00092169: "Strengthening the System of Protected Areas to enhance the conservation of threatened species and their habitats."*
- 7. The Fish Refuge Order,<sup>20</sup> which was published in Diario Oficial de la Federación (Annex I) and extended for five more years through another order published on 25 June 2018.<sup>21</sup> It covers a refuge zone in located in the Gulf of Ulloa (Annex II):
- **8.** Under LGVS Articles 65 and 67, Semarnat may establish refuges to protect native wildlife species in aquatic environments located in waters under federal jurisdiction, the Federal Maritime Terrestrial Zone and floodplains. The purpose of such refuges is to conserve native wildlife species and contribute to their development through management and conservation measures, as well as to conserve and protect their habitats. To achieve these ends, Semarnat shall elaborate the appropriate protection programs.

Thus, "the Order establishing a loggerhead turtle refuge in the Gulf of Ulloa, in Baja California Sur" (Acuerdo por el que se establece el área de refugio para la tortuga amarilla, Caretta caretta, en el Golfo de Ulloa, en Baja California Sur—"the Loggerhead Turtle Refuge Order")<sup>22</sup> was published to institute a refuge specifically for this species in said location.

9. A number of factors led to the decision to launch a process to elaborate the Marine Ecological and North Pacific Regional Management Program (*Programa de Ordenamiento Ecológico Marino y Regional Pacífico Norte*—POEM), including: the high environmental, economic and social value of the north Pacific region and its coastal strip; the numerous large bays on the coast of the Baja California Peninsula; the islands in the north Pacific; the presence of breeding areas of sea birds, sea turtles and the grey whale, among others; the region's considerable relevance in terms natural heritage conservation; and the risks and negative consequences associated with growth and the

<sup>&</sup>lt;sup>19</sup> To review the program, see: <a href="https://www.gob.mx/conanp/documentos/programa-de-accion-para-la-conservacion-de-la-especie-tortuga-caguama-caretta-caretta">https://www.gob.mx/conanp/documentos/programa-de-accion-para-la-conservacion-de-la-especie-tortuga-caguama-caretta-caretta</a>

<sup>&</sup>lt;sup>20</sup> Published in *Diario Oficial de la Federación* on 23 June 2016. To review the Fish Refuge Order, see: <a href="https://www.dof.gob.mx/nota\_detalle.php?codigo=5442227&fecha=23/06/2016">https://www.dof.gob.mx/nota\_detalle.php?codigo=5442227&fecha=23/06/2016</a>

To review this order, see: <a href="https://dof.gob.mx/nota\_detalle.php?codigo=5528971&fecha=25/06/2018">https://dof.gob.mx/nota\_detalle.php?codigo=5528971&fecha=25/06/2018</a>

Published in *Diario Oficial de la Federación* on 5 June 2018. The Loggerhead Turtle Refuge Order, see: <a href="https://www.dof.gob.mx/nota\_detalle.php?codigo=5525056&fecha=05/06/2018">https://www.dof.gob.mx/nota\_detalle.php?codigo=5525056&fecha=05/06/2018</a>

negative impact of overexploitation of natural resources and climate change.<sup>23</sup> POEM led to the to establishment of various Environmental Management Units (*Unidades de Gestión Ambiental*—UGA), each operating in accordance with its own respective ecological criteria and general or specific guidelines for the regulation of different types of land use. Thus, with respect to biodiversity in the Gulf of Ulloa region, the relevant ecological criteria for the protection and conservation of the loggerhead turtle were: CB25, CB25BIS, CB26, CB27 and CB28.

10. Nevertheless, despite the various instruments for its protection and conservation, provided for under the LGVS and LGEEPA, and which reflect its ecosystemic importance and its status as a species threatened with extinction, dramatically high numbers of loggerhead turtles are still dying.

In response to information request no. 1613100008820 (<u>Annex III</u>), Profepa indicated in its communication PFPA/1.7/12C.6/0273/2020, dated 18 February 2020, that from **2017 to 2019, 889 specimens of the loggerhead turtle were captured**.

That is to say, even according to official information, the recorded number of individuals captured as bycatch exceeded the limits specified in POEM criteria CB25 and C25bis. Thus, the number of recorded turtle deaths were as follows: 99 in 2017, 459 in 2018, and 331 in 2019.

- 11. Subsequently, Profepa indicated in communication PFPA/1.7/12C.6/0719/2020, dated 10 August 2020 and issued in response to information request no. 1613100058420 (<u>Annex IV</u>), that its Department of Federal Crimes against the Environment (*Dirección General de Delitos Federales contra el Ambiente y Litigio*) had no records whatsoever of complaints filed with the Federal Prosecutor's Office (*Ministerio Público Federal*), which involved the probable commission of crimes against the environment in relation to the loggerhead turtle. And yet this agency is vested with authority to pursue such cases under LGEEPA Article 182 and RI-Semarnat Article 45 paragraph XII.<sup>24</sup>
- 12. Similarly, in communication PFPA/1.7/12C.6/0722/2020, dated 14 August 2020 and issued in response to information request no. 1613100058320 (Annex V), Profepa stated that, during the period between 2010 and July 2020, neither its Assistant Attorney for Natural Resources nor its regional office in Baja California Sur had made any recommendations or requests or issued any requirements to any authority regarding the revoking or suspension of authorizations, permits, licenses or concessions or the implementation of any measure in relation to the protection and conservation of the loggerhead turtle (*Caretta caretta*). And yet these agencies are empowered to conduct such actions under LGEEPA Article 202 and RI-Semarnat Article 45 paragraph XII, subparagraph c).

Published in *Diario Oficial de la Federación* on 9 August 2018. To review this decree, see: http://dof.gob.mx/nota\_detalle.php?codigo=5534289&fecha=09/08/2018

<sup>&</sup>lt;sup>24</sup> Published in *Diario Oficial de la Federación* on 26 November 2012. To consult this document, see: http://www.diputados.gob.mx/LeyesBiblio/regla/n25.pdf

- 13. Communication PFPA/1.7/12C.6/0723/2020, dated 14 August 2020 and issued in response to information request no. 1613100058820 (<u>Annex VI</u>), indicated that Profepa's Assistant Attorney for Natural Resources conducted no monitoring and inspection visits concerning the loggerhead turtle (*Caretta caretta*) in the period between 2010 and July 2020. As for the Profepa's Baja California Sur regional office, it only conducted 14 visits during the same period, i.e., fewer than two visits per year, notwithstanding its obligations pursuant to LGEEPA Article 161.
- **14.** Further to the preceding points, it is worth mentioning that according to communication PFPA/1.7/12C.6/0724/2020, dated 14 August 2020 and issued in response to information request no. 1613100058920 by the head of Profepa's Transparency Unit (Annex VII), neither the Assistant Attorney for Natural Resources nor Profepa's office in Baja California Sur have levied any fines or penalties related to the loggerhead turtle (*Caretta caretta*) during the period between 2010 and July 2020.
- **15.** This is so despite the fact that according to communication PFPA/1.7/12C.6/0739/2020, dated 18 August 2020 and given in response to information request no. 1613100058220 (Annex VIII), during the period from 2010 to July 2020:
  - a. The Department of Environmental Complaints and Civic Participation of Profepa's Legal Ombudsman (*Dirección General de Denuncias Ambientales*, *Quejas y Participación social de la Subprocuraduría Jurídica de la Profepa*) received three loggerhead turtle related complaints. In two cases, the files were concluded without any fines or penalties. In the remaining case, the investigation process is ongoing. These cases were in addition to the 41 complaints filed nationwide, 38 of which have been resolved.
  - **b.** In relation to this issue, the Profepa office in Baja California Sur took receipt of 33 citizen complaints and instituted 14 administrative procedures, 12 of which have been resolved without any penalties or fines while two are currently pending.

It should be pointed out that citizen complaints may not be treated as pending appeals for the purposes of this submission inasmuch as they solely constitute exercises in civic participation intended to inform the environmental authority of facts, acts or omissions which cause or may cause ecological imbalances or damages to the environment or natural resources, or which may contravene provisions of environmental law. Therefore, as such citizen complaints do not have the character of an appeal per se, should a violation of the law be substantiated, the citizen or party who made said complaint shall not participate in any manner whatsoever in the resulting administrative proceeding.

Furthermore, it should be noted that from 2010 to the present date, not a single fine or penalty has been levied in relation to issues of loggerhead turtle conservation or protection.

In light of the foregoing points, it is evident that Semarnat, Profepa, Conanp and Conabio have failed to carry out the actions required to comply with or enforce the nation's laws for the protection and conservation of the loggerhead turtle (*Caretta caretta*). In effect, as already mentioned, between 2017 and 2019, **889 specimens of this species were captured**.

# III. APPLICABLE LAWS

On 29 June 2020, the following two instruments were published in *Diario Oficial de la Federación: The Decree Promulgating the Protocol replacing the North American Trade Agreement with the Agreement between the United States of America, the United Mexican States and Canada, concluded in Buenos Aires, on 30 November 2018;* and *The Protocol of Amendment to the Agreement between the United States of America, the United Mexican States and Canada,* concluded in Mexico City on 10 December 2019.<sup>25</sup>

Pursuant to Chapter 24 of the United States-Mexico-Canada Agreement (USMCA), in order for compliance with a law or regulation to be binding on the Mexican State, said instrument must be an Act of Congress and/or regulation promulgated pursuant to an Act of Congress that is enforceable by the federal level of government; and/or any instrument that implements the Party's obligations under a multilateral environmental agreement. Moreover, it must have as its primary purpose the protection of the environment, or the prevention of a danger to human life or health, through the protection or conservation of wild flora or fauna or biological diversity, including endangered species, their habitat, and specially protected natural areas.

In the present case, it is clear that the Inter-American Convention for the Protection and Conservation of Sea Turtles and the Convention on Biological Diversity have the status of binding laws requiring the Mexican state's compliance, as, in addition to the fact that the former was signed on 29 December 1988 and ratified by the Mexican Congress on 29 April 1999 and the latter signed on 29 December 1988 and ratified by the Mexican Congress on 29 April 1999, said international instruments are applicable at the federal level and include amongst their respective objectives: promoting the protection, conservation and recovery of sea turtle populations and the habitats on which they depend; pursuing the conservation of biological diversity, the sustainable utilization of the components thereof, and fair and equitable participation in the benefits deriving from the utilization of genetic resources; and promoting the protection, preservation and improvement of the environment.

In effect, it is the obligation of the Mexican authorities to carry out the necessary administrative actions to safeguard the environment and biodiversity in compliance with, and observance of, the national laws and international norms which defend and consolidate the human right to a healthy environment. Thus, if the right to a healthy environment is to be effective, as provided for in Article 4 of the Constitution, there is clearly an obligation to carry out actions tending to protect the environment, and protect and conserve ecosystems and biodiversity, as attested by various case decisions of the Mexican Supreme Court (Annex IX).

Moreover, the Political Constitution of the United Mexican States, the General Ecological Balance and Environmental Protection Act (LGEEPA), the General Wildlife Act (LGVS) and the Federal Environmental Liability Act (LFRA) all qualify as environmental law, as they were enacted by the Congress of the United Mexican States on 5 February 1917, 22 December 1987, 27 April 2000, and 25 April 2013, respectively, and published in *Diario Oficial de la Federación* on 5 February 1917, 28 January 1988, 3 July 2000, and 7 June 2013, respectively; moreover, said instruments are binding laws at the

9

<sup>&</sup>lt;sup>25</sup> El Decreto que puede consultarse en: http://dof.gob.mx/2020/SRE/T\_MEC\_290620.pdf

federal level and regulate the provisions of the Constitution in respect of the preservation, conservation and restoration of ecological balance and environmental protection, nationwide and in all areas where the nation exercises its sovereignty and jurisdiction.<sup>26</sup>

Similarly, under LGVS Articles 9 paragraph VII, and 71, the following responsibilities fall to the federal government: "the regulation and enforcement of measures in relation to critical habitat and refuges for the protection of aquatic species"; "establishing limitations to the exploitation of wildlife populations, including closed season orders and the modification or lifting thereof, in accordance with the provisions of LGEEPA Article 81, when it is not possible to achieve the conservation or recovery of populations through other measures." As a consequence, both the Sea Turtle Closed Season Order and the Loggerhead Turtle Refuge Order, which were published in Diario Oficial de la Federación, on 31 May 1990 and 5 June 2018 respectively, should be considered environmental law in the terms of the USMCA, as they consist of regulatory provisions promulgated pursuant to the LGVS, which was enacted by the Congress of the United Mexican States and is applicable at the federal level, and as such are instruments for the protection and conservation of the loggerhead or yellow turtle (Caretta caretta).

In the same order of ideas, under LGVS Article 62, it is the federal government's responsibility to "implement programs for the conservation, recovery, reproduction and reintroduction into their habitat of priority conservation species and populations, with the participation, where appropriate, of the persons who manage said species or populations and other stakeholders." Consequently, the following programs must also be considered environmental laws in the terms of the USMCA: the **National Sea Turtles Conservation Program**, implemented annually by Semarnat; the **Action Program for the Conservation of the Loggerhead Turtle Species**, which in turn is part of the Procer program, in the framework of project 00092169

Strengthening the management of the System of Protected Areas to enhance the conservation of threatened species and their habitats; and, finally, the POEM program. In effect, as with aforementioned decrees and orders, these programs consist of regulatory provisions promulgated pursuant to the LGVS, which itself was enacted by the Congress of the United Mexican States and is the law of the land nationwide, with the purpose of enforcing the LGVS and thereby ensure the protection and conservation of the loggerhead or yellow turtle (Caretta caretta).

Finally, LGEEPA Articles 5 paragraph V and 36 paragraph I, along with LGVS Article 9 paragraph V, clearly establish that the federal government is responsible for "the issuing of Official Mexican Standards and the monitoring of compliance with the latter in respect of the matters provided for under the Law" with the object of "establishing the requirements, specifications, conditions, procedures, targets, parameters and permissible limits which shall be observed in regions, zones, basins or ecosystems, as well as in the exploitation of natural resources, during economic activities, in production, in the use and end use of goods, in inputs and processes." Moreover, under the provisions of LGVS Articles 56 and 61, Semarnat "shall make lists to identify threatened species or populations, in accordance with the specifications of the relevant Official Mexican Standard."

<sup>&</sup>lt;sup>26</sup> As is clear from LGEEPA Article 1 and LGVS Article 1.

Therefore, Official Mexican Standard NOM-059-Semarnat-2010 and the Priority Species Order, which were published in *Diario Oficial de la Federación*, on 30 December 2010 and 5 March 2014, respectively, should both be considered environmental law in the terms of the USMCA, as both were issued by Semarnat pursuant to LGEEPA and the LGVS (both of which were enacted by the Congress of the United Mexican States) and are applicable nationwide.

#### IV. FAILURE TO EFFECTIVELY ENFORCE ENVIRONMENTAL LAW

Under Article 1 of the Protocol of San Salvador, the States Parties undertake to adopt the necessary measures, both domestically and through international cooperation, for the purpose of achieving progressively the full observance of the rights recognized in this Protocol, including, the right of everyone to live in a healthy environment. Consequently, in Article 11 of the Protocol, the States Parties undertake to promote the protection, preservation and improvement of the environment.

As mentioned above, Semarnat indicated via a Profepa communication that in the 2017 to 2019 period, **889 specimens of loggerhead turtles were captured**. Recorded turtle deaths were as follows: 99 in 2017, 459 in 2018 and 331 in 2019. This situation clearly reveals the Mexican authorities' failure to comply with environmental law. In effect, notwithstanding the establishment of legal provisions on environmental protection and on the protection or conservation of wildlife, biological diversity and species threatened with extinction, along with their habitats and protected natural areas, the enforcement of said provisions has not resulted in the protection of the loggerhead turtle.

Furthermore, pursuant to the *Inter-American Convention for the Protection and Conservation of Sea Turtles*, the Mexican state must promote the protection, conservation and recovery of sea turtle populations and their habitats, on the basis of the necessary scientific data and in accordance with the appropriate measures to achieve these ends.

In the same vein, the *Convention on Biological Diversity* establishes that each Contracting Party shall identify the components of biological diversity, through sampling and other techniques, and that said information shall be utilized to establish protected areas to conserve diverse species, through the protection of ecosystems and natural habitats and the maintenance of populations in natural surroundings. In addition, each Contracting Party shall promulgate the necessary legislation and other provisions for the protection of threatened species and populations.

At the national level, LGVS Article 60 Bis 1 stipulates that "No specimen of sea turtle, including the parts and derivatives thereof, of any species, may be subject to extractive exploitation, be it for subsistence or commercial purposes." Consequently, no extraction whatsoever is permissible, not even as a result of bycatch.

As for the Closed Season Order, which includes the loggerhead turtle as a listed species, its objective is the protection, conservation, propagation and recovery of sea turtle populations and thereby establishes a total and indefinite closed season for the species of sea turtles that exist in waters under federal jurisdiction. Consequently, it is strictly prohibited to extract, capture, chase and disturb or harm in any manner all species and subspecies of sea turtles. Furthermore, the Order establishes that the authority must evaluate the magnitude and effects of sea turtles bycatch, as well as reduce said phenomenon.

The National Sea Turtles Conservation Program is a direct result of the Closed Season Order. It is implemented every year by Semarnat, in coordination with Profepa and Conanp, in the framework of the Threatened Species Recovery Program (Procer) and the Action Programs for Species Conservation (PACE). This instrument complements the Loggerhead Turtle Refuge Order, a measure decreed in response to the strong anthropogenic pressures affecting the species, within the framework of Article IV paragraph 2, subparagraph b) of the Inter-American Convention for the Protection and Conservation of Sea Turtles.

Official Mexican Standard NOM-059-Semarnat-2010 identifies threatened wildlife species or populations. In addition, it establishes the criteria for the inclusion, exclusion or change in risk category of wildlife species. The loggerhead turtle (*Caretta caretta*) is included in this list as a species **threatened with extinction**, which implies that the size of its populations in Mexico have fallen drastically, i.e. to such an extent that its biological viability is at risk throughout its entire natural habitat, due to factors such as the destruction or drastic modification of habitat, unsustainable exploitation, illnesses or natural predators, etc.

Likewise, in March 2014, the Priority Species Order was published in Diario Oficial de la Federación. This document lists the loggerhead turtle (Caretta caretta) as a priority species, a status which led to the development of an Action Program for Loggerhead Turtle Conservation, in force since 2011 with the following main objectives: facilitating the implementation of comprehensive conservation strategies; encouraging the utilization of the best loggerhead turtle protection measures; ensuring monitoring of its population and reproductive parameters; and protection of its breeding habitat.

Meanwhile, the technical supporting study for the proposal to declare a loggerhead turtle refuge in the Gulf of Ulloa, Baja California Sur determined that "a constant fall in the number of turtles nesting in Japanese coastal areas has been documented even as bycatch has remained constant in the Gulf of Ulloa, a priority loggerhead turtle feeding area."

This study also indicated that the population in the North Pacific "has been experiencing a significant reduction in population numbers in recent years [...] due to this reduction, the result of several threats, the population is classified as "endangered" on the International Union for the Conservation of Nature (IUCN) Red List [...] According to Demographic modeling, the death of over 92 subadults per year throughout the Pacific Ocean severely increases this population's risk of extinction."

However, as mentioned in the background information above (points 17 to 22), in the period from 2017 to 2019, 889 loggerhead turtle specimens were captured, i.e., an average of 296 turtles per year or triple the permissible limit of 92 specimens. This situation severely increases this population's risk of extinction even as it underlines the Mexican environmental authorities' lack of action to ensure effective loggerhead turtle protection and conservation despite having at their disposal the appropriate instruments to do so.

Furthermore, as attest communications PFPA/1.7/12C.6/0719/2020, PFPA/1.7/12C.6/0722/2020, PFPA/1.7/12C.6/0723/2020, PFPA/1.7/12C.6/0724/2020 and PFPA/1.7/12C.6/0739/2020, during the period from 2010 to July 2020, the Mexican authorities lodged no complaints with the Federal Public Prosecutor's Office (the deprivation of life of a specimen turtle is considered a crime, punishable by a sentence of 9 years); did not once request the revoking or suspension of authorizations, permits, licenses or concessions in response to high loggerhead turtle mortality; carried out less than 2 monitoring and inspection visits per year, which is clearly insufficient; and did not levy a single fine or penalty in relation to the loggerhead turtle, despite having received 41 complaints nationwide, including the 33 filed with the Profepa office in Baja California Sur.

As the foregoing makes clear, the Mexican authorities are failing to comply with environmental laws in relation to the protection and conservation of the loggerhead turtle (*Caretta caretta*), a species listed as threatened with extinction, and failing to fulfill their conservation and protection responsibilities in relation to this species. In effect, in addition to lacking the scientific and technical information required to design protection and conservation strategies and instruments, they are not fulfilling their monitoring and inspection obligations and they are not levying fines or penalties to ensure that not a single loggerhead turtle is impacted by bycatch.

This record of failure is manifest. In effect, according to the supporting technical study conducted prior to the establishment of the turtle refuge, mortality among loggerhead turtles may not exceed 92 individuals per year in the ENTIRE PACIFIC OCEAN if their viability as a species is to be ensured, in keeping with the provisions of the Inter-American Convention for the Protection and Conservation of Sea Turtles.

The high number of individuals captured as bycatch from 2017 to 2019 reflects the grave lack of effective measures for sea turtle protection and conservation due to the absence of a program to ensure the monitoring of, *and* effective compliance with, such protection and conservation measures.

The reason for this situation is two-fold: 1) there exist no recent studies on the size of the population (i.e., catch quotas are determined without any scientific basis whatsoever, which is risky and irresponsible); and 2) there exists no assessment by the Mexican authorities of the effectiveness of its current instruments in reducing mortality due to bycatch.

As all of the foregoing makes clear, the Mexican authorities have not been ensuring the loggerhead turtle's survival. In effect, the Mexican authorities are undermining biological diversity as they are lacking in technical and scientific information, in mechanisms for reviewing the effectiveness of existing measures, as well as an efficient inspection and monitoring system, which would ensure the levying of fines or penalties. For these reasons, it is essential to require the Mexican authorities' compliance with their obligations, without delay, in order to ensure the loggerhead turtle's survival.

#### V. COMPLIANCE WITH THE REQUIREMENTS OF USMCA ARTICLE 24 AND THE CASE FOR THE

#### PREPARATION OF A FACTUAL RECORD.

Chapter 24 of the USMCA, which concerns the environment, obliges Parties to ensure the conservation of marine species, which includes the long term conservation of sea turtles, through the implementation of, and effective compliance with, conservation and management measures such as studies and evaluations of the impact of fishing activities on non-target species and their marine habitats. In effect, such studies entail the gathering of specific data on non-target species and estimates of their bycatch in order to avoid, mitigate or reduce this phenomenon in fisheries.

Based on the foregoing, it is evident that the death rates of the loggerhead turtle (Caretta caretta) described in this submission contravene USMCA Article 24.19. Consequently, it is appropriate to turn to this international body to request that a factual record be prepared to address the failure on the part of the Mexican authorities to effectively enforce environmental law, pursuant to the following instruments thereof: the Additional Protocol to the American Convention on Human Rights in the Area of Economic, Social and Cultural Rights (Protocol of San Salvador); the Inter-American Convention for the Protection and Conservation of Sea Turtles, the Political Constitution of the United Mexican States; the General Ecological Balance and Environmental Protection Act (LGEEPA); the General Wildlife Act (LGVS); the Order establishing a closed season on sea turtle species and subspecies in waters under federal jurisdiction in the Gulf of Mexico and the Caribbean, as well as in the Pacific Ocean, including the Gulf of California; the Order establishing a sea turtle (Caretta caretta) refuge in the Gulf of Ulloa, Baja California Sur; the National Sea Turtles Conservation Program; the Action Program for the Conservation of the Loggerhead Turtle; Official Mexican Standard NOM-059-Semarnat-2010, Environmental Protection - Native wildlife species of Mexico -Risk categories and specifications for the inclusion, exclusion or change in category of species - List of threatened species; and the Order declaring the list of priority species and populations for conservation. Let it be further noted that the relevant ends of environmental law are as follow:

- To promote the protection, conservation and recovery of sea turtle populations and of the habitats on which they depend, based on the most reliable scientific and technical data and the best available science.
- 2. To prohibit the extraction, capture, chasing and retention of all species and subspecies of sea turtles, as well as any other act which may disturb, prejudice or cause the death of same. Shall also be prohibited the domestic trade in same, including in their eggs, parts or products to thereby ensure compliance with the total and definitive closed season order on the species.
- 3. To minimize as far as possible the incidental capture, retention, harm or death of sea turtles in the course of fishing activities and/or any other human activity, through appropriate regulation of such activities, as well as through the development, improvement and use of appropriate fishing gear, equipment or techniques, including turtle excluder devices (TEDs).
- 4. To restrict the human activities which may seriously affect sea turtles, particularly during the periods of reproduction, nesting and migration.
- 5. To reinforce monitoring and inspection operations which may lead to actions for the protection of the species' populations and habitats.

- 6. To restore sea turtle habitats and spawning grounds, as well as establish whatever restrictions may be necessary regarding the utilization of these areas through, inter alia, the designation of protected areas and/or any other protection classification recognized by Mexican law.
- 7. To ensure monitoring of sea turtle populations and their reproductive parameters.
- 8. To conduct scientific research on sea turtles, their habitats and other relevant aspects, which may generate reliable and useful information for the adoption of measures that may ensure the protection, conservation and recovery of sea turtle populations and that of the habitats on which they depend, in strict compliance with the guidelines stipulated in the Convention on Biological Diversity.
- 9. To ensure strict compliance with the instruments of national and international legislation regulating the protection, conservation and recovery of sea turtle populations and that of the habitats on which they depend.
- 10. To ensure inter-institutional, logistical and financial coordination to facilitate the implementation of comprehensive strategies for the species' conservation.

Best regards,

Mario Alberto Sánchez Castro Northwest Regional Director

Centro Mexicano de Derecho Ambiental, A.C.

Atlixco número 138, colonia Condesa, delegación Cuauhtémoc, en la Ciudad de México, C.P. 06140. sanchezm@cemda.org.mx

Sarah Uhlemann

Sarah lehm

Senior Attorney and International Program Director

Alejandro Olivera

Senior Scientist and Mexico Representative

Center for Biological Diversity

2400 NW 80th Street, NW #146

Seattle, WA 98117

suhlemann@biologicaldiversity.org

### VI. Bibliography

Keller, J.M., J.R. Kucklick, M.A. Stamper, C.A. Harms and P.D. McClellan-Green. "Associations between Organochlorine Contaminant Concentrations and Clinical Health Parameters in Loggerhead Sea Turtles from North Carolina, USA." *Environmental Health Perspective* 112, no. 10 (2004): 1074–1079.

Peckham, S. H., D. Maldonado-Diaz, V. Koch, A. Mancini, A., Gaos, A., Tinker, M. T., & Nichols, W. J. (2008). "High mortality of loggerhead turtles due to bycatch, human consumption and strandings at Baja California Sur, Mexico, 2003 to 2007." *Endangered Species Research* 5, no. 2 (2008) 171-183.

Reséndiz, Eduardo and María Lara Uc. "Analysis of post mortem changes in sea turtles from the Pacific Coast of Baja California Sur using forensic techniques." *Revista Bio Ciencias* 4, no. 4 (2017): 1-22.

Welch, H., E.L. Hazen, D.K. Briscoe, S. Bograd, M. Jacox, T. Eguchi, S. Benson, C.C. Fahy, T. Garfield, D.H. Robinson, J.A. Seminoff and H. Bailey. "Environmental indicators to reduce loggerhead turtle bycatch offshore of Southern California." *Ecological Indicators* 98, no. 9 (2019): 657–664, doi: 10.1016/j.ecolind.2018.11.001

Work, T.M., G.H. Balazs, M. Wolcott and R. Morris. "Bacteraemia in free-ranging Hawaiian green turtles Chelonia mydas with fibropapillomatosis." *Diseases of Aquatic Organisms* 53, no. 1 (2003): 41-46.

Work, T.M. and G.H. Balazs. "Pathology and distribution of sea turtles landed as bycatch in the Hawaii-based North Pacific pelagic long line fishery." *Journal of Wildlife Diseases* 46, no. 3 (2010): 422-432.