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CMP Nomination Template of a Conservation Management Plan for Central America Humpback Whales population

**J. Urbán R., J. Casas, M. Iñiguez, L. Rojas-Bracho, L. Trejos, L. Vilorio-Gómora, and R.
L. Brownell Jr.**



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Central America Humpback Whales population**

**This nomination was prepared by governments of Costa Rica, Guatemala, El
Salvador, Mexico, Nicaragua, Panama, and the United States of America**

**Steering Committee for the proposal's submission: J. Urbán R., J. Casas, M. Iñiguez,
L. Rojas-Bracho, L. Trejos, L. Vilorio-Gómora, and R. L. Brownell Jr.**

**Annex 2 - CMP Nomination Template of a Conservation Management Plan for
Central America Humpback Whales population**

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2021

Scientific Rationale for a CMP

(a) Information on the cetacean population(s)

Humpback whales in the North Pacific Ocean present a complex migration structure suitable for comparing the relative strengths of fidelity to feeding and breeding grounds (Baker et al., 2013). This population was determined to be discrete based on re-sight data and significant genetic differentiation findings with other populations in the North Pacific. The population's genetic composition is also unique. It shares mitochondrial DNA (mtDNA) haplotypes with some Southern Hemisphere populations, suggesting it may serve as a conduit for gene flow between the North Pacific and Southern Hemisphere (Bettridge et al., 2015). Recent studies on photo-identification and mtDNA in southern Mexico demonstrate that this region's humpback whales belong to the Central American humpback whale's population (Martínez-Loustalot et al., 2019).

The Central America population, or Distinct Population Segment (DPS), according to NOAA, is humpback whales that breed in waters off Central America (Panama, Costa Rica, Nicaragua, El Salvador, Honduras, and Guatemala) and into southern Mexico (Bettridge et al. 2015, Calambokidis et al. 2017; Martínez-Loustalot et al. 2019); migrate along the coast of Mexico, and feed along the west coast of the United States and southern British Columbia. Whales from this population have been observed foraging grounds along California, Oregon, and Washington (Barlow et al., 2011).

The Central America population has a relatively small size (Calambokidis et al. 2008). The estimated number of mature individuals may be less than 250, and there is no data available to determine a population-level growth, which adds uncertainty to its current status. Considering historical records of whaling on the feeding grounds and neighboring feeding grounds, this population likely remains well below pre-exploitation size despite observed positive population trends in other populations over the past decades. Entanglement scarring rates indicate that a significant interaction with fishing gear and vessel collisions may be impacting this population growth to a small degree.

A preliminary estimate of the abundance of the Central American population is ~ 500 from the SPLASH project (Calambokidis et al. 2008), or ~ 600 from the reanalysis by Barlow et al. 2011 or 411 (CV = 0.30) individuals (Wade et al., 2016). The most current estimate is 783 whales (CV = 0.170, Wade 2017). This population's size is relatively small compared to most other breeding populations in the North Pacific (Calambokidis et al. 2008).

The California / Oregon feeding population is a mixture of the Central American population and the coastal population of Mexico, including the Baja California peninsula. The abundance estimated for off California - Oregon increased steadily at about 7% per year from 1990 through the 2000s when it appeared to plateau. (Calambokidis et al. 2017).

The Humpback Whale Biological Review Team (BRT) from NOAA (Bettridge et al. 2015), concluded that: "The potential for this population to be at high risk of extinction is considered largely reflecting uncertainty regarding population size and population trend; and that the

threats identified are likely to impact the population in its entirety"; The BRT, therefore, concluded that the population is at moderate-to-high risk throughout its range; and the Central America population is therefore considered to be at moderate risk of extinction over the next three generations. Entanglement in fishing gear and vessel collisions was identified as the most significant DPS threat in the 2016 final listing rule by NOAA (81 FR 62260, September 8, 2016).

However, given that the Central American population is estimated to be a small proportion of the whales in California/Oregon, this does not necessarily mean that the Central American population is growing. Therefore, the trend of the Central American population is unknown (Bettridge et al., 2015).

The Central American population's breeding ground occupies a unique ecological setting, and its primary feeding ground is in a different marine ecosystem from most other populations. The loss of this population would also result in a significant gap in the species' range (Bettridge et al., 2015).

(b) Information on known and suspected threats to the Central America Humpback Whales population

No known whaling operations are known from the waters off Central America. There are no records of the floating factory Olympic Challenger hunting north of Ecuador (Barthelmeß, 2010). However, there were catches of CAHWs in other areas near and outside their wintering ground. These areas of possible catches include the following going from the south to the north:

Off Baja California and the coast of mainland Mexico, Norwegian Floating Factories operated in 1914 and between 1924-1929. During these years, a total of 2,042 humpbacks were captured (Tonnessen 1967; IWC catch database). Most of the hunting occurred between December and July, and likely some of these whales were CAHWs. Some of these catches off mainland Mexico could have been CAHWs, and other CAHWs could have been taken as they migrated to their summer feeding grounds off California. More research is needed on these historical catches to understand better the possible numbers of CAHWs taken.

Over 4,600 humpbacks were killed off California and Washington in different months and years between 1911 and 1965 (Scheffer, V. B. and Slipp, J. W. 1948; Clapham et al. 1997; IWC catch database). This region comprises the principal feeding ground for the CAHW. More research is needed on these historical catches to understand better the possible numbers of CAHWs hunted.

This small population is particularly vulnerable to anthropogenic threats. These humpback whales are bycatch on their feeding ground off California. This bycatch occurs mainly in the Dungeness crab fishery and poses a significant threat to this depleted population's conservation. Vessel strikes also pose an additional threat on the US's west coast and to this population as it traverses some of the busiest ports on the west coast of the United States (Caretta et al., 2018). Off the west coast of Baja California, Mexico, and the mainland coast

of Mexico, there were 95 records of entanglement between 2004 and 2017 (Urbán et al., 2017).

In Central American waters, the main threats to these humpback whales are ship strikes, mainly off Panama. Guzmán et al. (2013) noted that Panamanian waters are among the 20 most transited regions globally. In the Gulf of Panama, humpback whales are at risk from ship strikes during winter due to the heavy maritime traffic. Other potential threats to these whales throughout their range include anthropogenic noise (acute and chronic), micro-and nano-plastics, physical disturbance, and climate change. Considering all the above human-related threats that this population is facing, a CMP could help better manage human activities that affect humpback whales throughout their range to maintain a favorable conservation status using the best available scientific knowledge.

Whale-watching tourism and scientific research occur, at relatively low levels, on both the feeding and breeding grounds of this population as well as along the migratory route. Whale watching is regulated in the US and Mexico. Many Central American countries also have whale watching guidelines and regulations in the breeding ground of this population.

We include the following summary table of the main threats of the Central American Humpback Whales population:

Actual/Potential Threat	Country	Cause or related activity	Evidence	Possible impact on populations (maybe an educated guess)	Priority for Action	Actual/Possible mitigation measures
Bycatch	USA	Intense fishing activity	Strong	Possible high Mortality / or severe injury	High	Disentanglement and train groups to disentanglement.
	Mexico		Strong			
	El Salvador		No evidence	Serious injury		Remove ghost nets.
	Guatemala		No evidence			
	Nicaragua		No evidence			
	Costa Rica		Low			
	Panama		Moderate			
Ship Strike	USA	Intense of the traffic of commercial vessels	Strong	Possible high Mortality / or severe injury	High	Review the routes of large commercial ships and propose virtual highways and avoid collisions
	Mexico		No evidence	Serious injury		
	El Salvador					
	Guatemala					

	Nicaragua		No evidence			
	Costa rica		No evidence			
	Panama		Moderate			
Whale Watching	USA		No evidence	Possible low injury	Medium	Develop self-regulation schemes in the regions where whale watching is practiced. Incentivize good practices
	Mexico	Increased whale watching activity	Moderate			
	El salvador	Low whale watching activity	No evidence			
	Guatemala		Low			
	Nicaragua		No evidence			
	Costa rica	The regulations of the activity are not followed	Moderate			
Panama	No whale watching from this population	Low	Low			
Marine debris	USA	An increased amount of marine litter	No evidence	Possible high Mortality / or severe injury	Medium	Limitation of the single-use plastic items, recycling, beach clean-ups, education campaigns with the local communities
	Mexico					
	El salvador					
	Guatemala					
	Nicaragua					
	Costa rica					
	Panama					

CMP Objectives and Outcomes

Main Objective:

Conserve the Central American humpback Whale population and its habitat through collaborative regional actions to reduce anthropogenic threats in its range of distribution.

Objective 1 – Reduce mortality and injuries of a humpback whale due to ship strikes and fishing activities.

- **Outcome 1.1** – By 2030, national and regional policies include and promote the ecosystem approach to fisheries, including transboundary issues.
- **Outcome 1.2** – By 2030, reduce conflicts between humpback whales, and fishing activities, ensuring whales conservation and human well-being.
- **Outcome 1.3** – 2030 reduces conflicts between humpback whales and ship strikes, ensuring whales conservation and human well-being.
- **Outcome 1.4** - By 2026, databases on HW entanglements related to fishery activities in critical areas within the species range distribution are developed. The potential impacts on migratory whale species are identified and mapped, including the quantification of bycatch events.
- **Outcome 1.5** - By 2030, the best available scientific evidence is used in support of the construction, update, and implementation of sound management and conservation plans.

Objective 2 – Improve habitat connectivity and conservation.

- **Outcome 2.1**–By 2026, critical humpback whale habitats are identified, and a network of stakeholders is established.
- **Outcome 2.2**– By 2030, implementation and establishment of new protected areas and other effective conservation measures.
- **Outcome 2.3**– By 2034, a network of well-managed conserved and protected areas in key reserved areas will protect the Central American humpback whale population.

Objective 3 – Improve knowledge on population size, trends, movement patterns, and habitat use of Central American humpback whales.

- **Outcome 3.1**– By 2030, distribution, population trend, movement patterns, habitat use, and health are documented and support policies and action plans for Central American humpback whale population, CMP countries.
- **Outcome 3.2**–By 2030, distribution maps are fully improved, and the population trend is modeled for critical areas within the species distribution range.

- **Outcome 3.3**– By 2026, regional cooperation supports scientific research and promotes knowledge through virtual platforms to support decisions and stakeholders.

Objective 4 – Range states should engage between governments, the private sector, commercial activities (especially fisheries and shipping), and civil society towards the conservation of the Central American humpback whale population.

- **Outcome 4.1**–By 2030, communities, governments, and businesses become custodians of the Central American humpback whale population.
- **Outcome 4.2**– By 2030, each CMP country has developed and implemented public policies and awareness campaigns to raise awareness towards the conservation of the Central American humpback whale population.
- **Outcome 4.3**–By 2030, CMP countries have developed public policies and awareness campaigns fostering the engagement of key decision-makers, researchers, and civil society. CMP countries have developed alternative income programs as needed for local communities, mainly focused on community-based sustainable tourism programs.

Agreed and anticipated delivery partners

The initiative has been supported by Mexico's governments, the United States of America, Guatemala, El Salvador, Nicaragua, Costa Rica, and Panama.

This initiative will be supported for a number of scientific organizations, universities, research institutions and experts from the in Central America humpback whale, including institutions from the species distribution range, such as Ministerio de Ambiente, PANACETACEA, (Panama), International Marine Resources, NOAA (USA), Comisión Nacional de Áreas NATurales Protegidas (CONANP) Universidad Autónoma de Baja California Sur, Ecología y conservación de ballenas and Red Atención a Ballenas Enmalladas (México), Consejo Nacional de Áreas Protegidas (Guatemala), Proyecto Megaptera, Ministerio de ambiente y Recursos Naturales (El Salvador), Cascadia Research, Fundación Kelp and Áreas de conservación y reservas biológicas (Costa Rica), Association ELI-Scientific Cetacean Conservation and Marine Coastal Conservation and Paso Pacífico (Nicaragua).

The process to be adopted when developing a CMP

- Nomination of candidates for the Steering Committee from each country.
- Nomination of candidates for a regional technical and scientific advisory group.
- Define priority actions for research and conservation.
- Nominate and define a coordination board.
- Develop a strategic approach including awareness, fundraising, and governance components.

- Promote meetings among country members, scientific advisory groups, and key stakeholders.
- Implement a fundraising plan.
- Define and implement a monitoring plan.
- Promote continuous adaptation process and share lessons learned at the regional scale.

Timeframe for CMP Development and Implementation

Activity	2020				2021				2022			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Develop the CMP												
Country meetings	X											
CMP review		X	X	X	X							
CMP finalized and approved by country						X						
CMP review by IWC committees							X					
CMP improvement								X	X			
CMP final version submission to IWC										X		

Resource Requirements for Development of a CMP

Budget	Year 1	Year 2

Nomination Submission Information

This nomination for a Conservation Management Plan for the Central America Humpback Whales population has been submitted to the IWC Secretariat at least 60 days before 68C IWC Commission Meeting in accordance with the Commission's document submission procedures.

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Annex 3 – CMP Template

CMP Nomination Template of a Conservation Management Plan for Central America Humpback Whales population

This nomination was prepared by the governments of [Costa Rica, Guatemala, El Salvador, Mexico, Nicaragua, Panama, and the United States of America].

Steering Committee for the proposal's submission J. Urbán R., J. Casas, M. Iñiguez, L. Rojas-Bracho, L. Trejos, L. Vilorio-Gómora, and R.L. Brownell Jr.

2021

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Executive Summary

The Central American humpback whale is considered endangered due to the small population size and the interactions with human activities like fishing, ship traffic, and whale-watching. The governments of Costa Rica, Guatemala, El Salvador, Mexico, Nicaragua, Panama, and the United States of America agree to develop a Conservation Management Plan (CMP) for the Central American humpback whales. The main objective is to conserve the humpback whale and its habitat through collaborative regional actions to reduce anthropogenic threats in its range of distribution. The CMP will define the main actions to evaluate the humpback whale population in their distribution range from Panama to the USA, identify the threats quantitatively and guarantee their conservation in the short, medium, and long term. The Central American humpback whale's CMP will allow articulating research and conservation actions among the different countries where these species live, defining national and other regional actions. Likewise, it will focus on generating mechanisms for joint work among researchers, organizations, and governments that will allow for influencing management policies in the distribution range. Public awareness of governance and environmental agencies depends directly on how fast and quality the scientific information is shared. A channel of communication and transparency, of planning/actions and results, is strongly advisable to potentially improve the efficiency of public awareness and conservation management. Much technical expertise is involved in designing, planning, fieldwork, and analysis, for getting data on biological and ecological aspects of the species. Capacity building is crucial to ensure the quality and reliability of the information produced and to standardize methods that allow robust comparison.

1. Introduction

The Central American population, or Distinct Population Segment (DPS), according to NOAA, is described as humpback whales that breed in waters off Central America (Panama, Costa Rica, Nicaragua, El Salvador, Honduras, and Guatemala), and possibly into southern Mexico (Bettridge et al. 2015, Calambokidis et al. 2017), in the North Pacific Ocean, migrate along the coast of Mexico, and feed along the west coast of the United States and southern British Columbia. Whales from this population have been observed foraging grounds along California, Oregon, and Washington (Barlow et al., 2011). This population or DPS is listed as endangered and has been most recently estimated to include a minimum estimate of 411 (CV=0.30) individuals (Wade et al., 2016).

The Central America population has a relatively small size (Calambokidis et al. 2008). The estimated number of mature individuals may be less than 250, and there is no data available to determine a population-level growth, which adds uncertainty to its current status. In light of historical records of whaling on the feeding grounds and neighboring feeding grounds, this population likely remains well below pre-exploitation size despite observed positive population trends in other populations over the past decades. Entanglement scarring rates indicate that a significant interaction with fishing gear and vessel collisions may be impacting this population growth to a small degree.

The Humpback Whale Biological Review Team (BRT) from NOAA (Bettridge et al. 2015), concluded that: "The potential for this population to be at high risk of extinction is considered largely reflecting uncertainty regarding population size and population trend; and that the threats identified are likely to impact the population in its entirety"; The BRT, therefore, concluded that the population is at moderate-to-high risk throughout its range; and the Central America population is therefore considered to be at moderate risk of extinction over the next three generations. Entanglement in fishing gear and vessel collisions was identified as the most significant DPS threat in the 2016 final listing rule by NOAA (81 FR 62260, September 8, 2016).

The breeding ground of this DPS occupies a unique ecological setting, and its primary feeding ground is in a different marine ecosystem from most other populations. The loss of this population would also result in a significant gap in the species' range (Bettridge et al., 2015).

This conservation plan's overall goal is to manage human activities that affect Central American humpback whales and maximize the population's chances for recovery, based on the best scientific evidence.

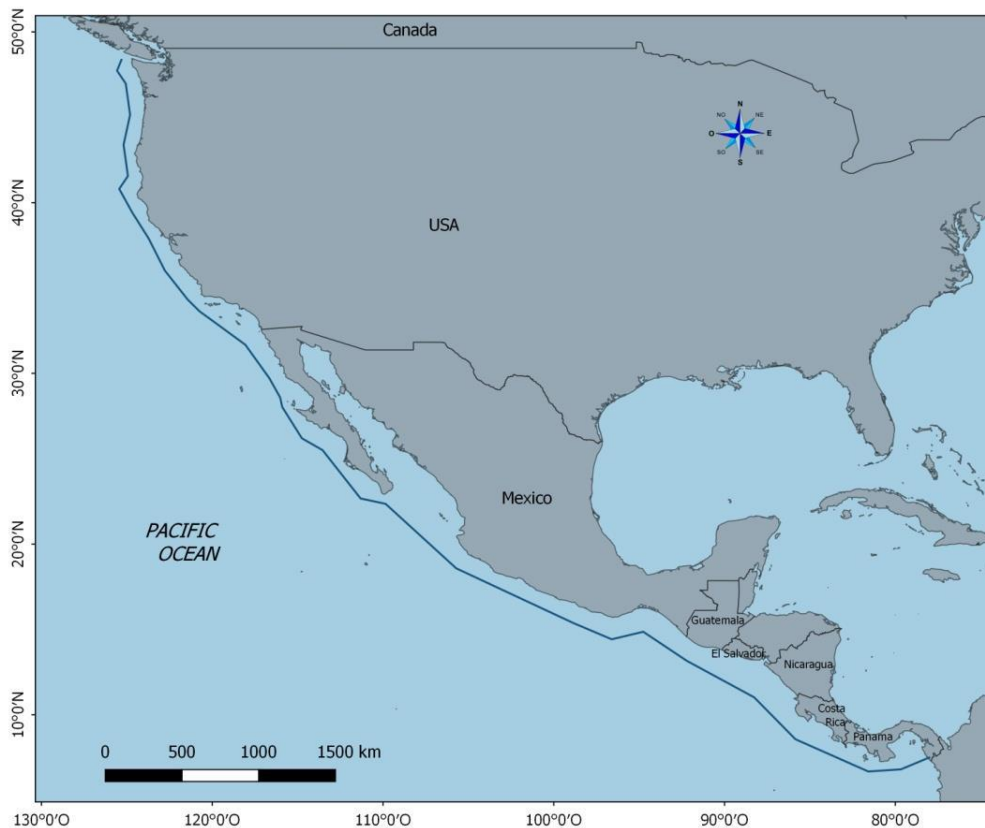


Figure 1. Distribution range of the CAHWP.

1.2 Overall Objectives of the CMP

Main Objective:

Conserve the Central American humpback Whale population and its habitat through collaborative regional actions to reduce anthropogenic threats in its range of distribution.

Objective 1 – Reduce mortality and injuries of a humpback whale due to ship strikes and fishing activities.

- **Outcome 1.1** – By 2030, national and regional policies include and promote the ecosystem approach to fisheries, including transboundary issues.
- **Outcome 1.2** – By 2030, reduce conflicts between humpback whales, and fishing activities, ensuring whales conservation and human well-being.
- **Outcome 1.3** – 2030 reduces conflicts between humpback whales and ship strikes, ensuring whales conservation and human well-being.
- **Outcome 1.4** - By 2026, databases on HW entanglements related to fishery activities in critical areas within the species range distribution are developed. The potential impacts on migratory whale species are identified and mapped, including the quantification of bycatch events.
- **Outcome 1.5** - By 2030, the best available scientific evidence is used in support of the construction, update, and implementation of sound management and conservation plans.

Objective 2 – Improve habitat connectivity and conservation.

- **Outcome 2.1**–By 2026, critical humpback whale habitats are identified, and a network of stakeholders is established.
- **Outcome 2.2**– By 2030, implementation and establishment of new protected areas and other effective conservation measures.
- **Outcome 2.3**– By 2034, a network of well-managed conserved and protected areas in key reserved areas will protect the Central American humpback whale population.

Objective 3 – Improve knowledge on population size, trends, movement patterns, and habitat use of Central American humpback whales.

- **Outcome 3.1**– By 2030, distribution, population trend, movement patterns, habitat use, and health are documented and support policies and action plans for Central American humpback whale population, CMP countries.
- **Outcome 3.2**–By 2030, distribution maps are fully improved, and the population trend is modeled for critical areas within the species distribution range.
- **Outcome 3.3**– By 2026, regional cooperation supports scientific research and promotes knowledge through virtual platforms to support decisions and stakeholders.

Objective 4 – Range states should engage between governments, the private sector, commercial activities (especially fisheries and shipping), and civil society towards the conservation of the Central American humpback whale population.

- **Outcome 4.1**–By 2030, communities, governments, and businesses become custodians of the Central American humpback whale population.
- **Outcome 4.2**– By 2030, each CMP country has developed and implemented public policies and awareness campaigns to raise awareness towards the conservation of the Central American humpback whale population.
- **Outcome 4.3**–By 2030, CMP countries have developed public policies and awareness campaigns fostering the engagement of key decision-makers, researchers, and civil society. CMP countries have developed alternative income programs as needed for local communities, mainly focused on community-based sustainable tourism programs.

2. Legal Framework

2.1 International Conventions and Agreements

2.2 National Legislation and Management Arrangements

2.2.1 Costa Rica

According to the Law of Fishing of year 2005, the hunting of cetaceans is prohibited in Exclusive Economic Zone of the country. In addition, the inner waters, territorial sea, and Exclusive Economic zone was declared like Sanctuary for whales and dolphins by means of Executive Decree N. 34327 of January of 2008. The objectives of the Sanctuary are the following ones:

- a) The maximization in the indices of populations of cetaceans so that their levels according to their natural capacity stay.
- b) To promote the conservation of the cetaceans throughout its service lives, being offered a particular emphasis to the young places, consistent mating, and raising, as well as migratory routes.
- c) To stimulate the coordinated way, the investigation in the region of the Pacific This Tropical one, so that in the future this initiative to other countries can extend by where these same species migrate.
- d) To persecute that the activities around the observation of marine mammals are made in a responsible and sustainable way, as well as in strict attachment to the environmental norm.

Finally, Costa Rica has Regulation for the operation of activities related to cetaceans in Costa Rica that was published in 2005 under Executive Decree N. 32495. The objective of this regulation is to establish the requirements that will have to fulfill those companies,

institutions or people who dedicate themselves to make any activity of observation, investigation and tourism related to cetaceans in territorial waters of Costa Rica.

2.2.2 Guatemala

1989 The Law of Protected Areas, conservation of biodiversity and marine fauna was signed.
2002 Decree 822002 on fishing and aquaculture is published, which indicates the prohibition of the capture of cetaceans.

2015 the regulation for the tourist sighting of marine fauna was published.

2017 starts the promotion so that the regulation has a legal hierarchy.

2.2.3 El Salvador

That of conformity to Article 117 of the Constitution of the Republic, it is to have of the State, to protect the natural resources, as well as the diversity and integrity of the environment, to guarantee the sustainable development, declaring of social interest the protection, conservation, rational advantage, restoration, or substitution of the natural resources.

That article 2 of the Environment Law, in its literal e) establishes; that in the management of protection of the environment, it will prevail the principle of prevention and precaution.

That Article 1 of the Law of Conservation of Wildlife, intends the protection restoration, handling, advantage, and conservation of wildlife, this includes the regulation of activities like hunting, harvesting, and commercialization, as well as the other forms of use and advantage of this resource;

That according to Article 5 of same legal body, Environment the Natural Ministry and Resources will be responsible for the application of the law, with regard to the protection, restoration, conservation, and the sustainable use of the wildlife;

That Article 6 of same legal body, establishes: It corresponds to the Ministry of Environment and Natural Resources of conformity to its agreement of creation:

b) To protect the wildlife like a natural patrimony of the Nation; to support and to advise other Institutions that have responsibility with these resources;

c) To make studies on new and better forms to use the wild species, emphasizing those areas that such satisfy basic the human necessities in the appropriate form with the circumstances with the country, transferring the technology obtained from to other institutions and other users when it assures a better and greater benefit to the population the country;

d) To publish the studies and to the same put them to the access of the public and the scientific community, as well as to make other activities that promote the resources of wildlife and their suitable use;

e) To elaborate and to maintain updated the official listing of species of wildlife threatened or in danger of extinction and velar by its protection and restoration;

That Article 8 of the Law of Conservation of Wildlife, arranges that: all use of the wildlife, including the hunting, the reproduction, commercialization, import, export, re-export, collects, and possession for any purpose, will be governed by the regulations corresponding and administered by the Environment Ministry and Natural Resources; in coordination with the organisms or institutions related to the matter.

On March 23, 2015, were emitted the Agreement number seventy and four, of the Executive agency in the Branch of Environment and Natural Resources, published in the Official Newspaper number one hundred eighty and one, volume four hundred nine, of date five of October of he himself year, by means of which the official Listing of species of threatened wildlife was approved or in danger of extinction in El Salvador; which includes all the species of cetaceans registered for the country;

That Article 1 of the Law of Protected Natural Areas, intends regular the establishment of the legal regime, administration, handling, and increase of the Protected Natural Areas, with the purpose of conserving the biological diversity, supporting the operation the essential ecological processes and to guarantee the perpetuity of the natural systems, through a sustainable handling for benefit of the inhabitants of the country;

That according to Article 5 of the same legal disposition, Environment the Natural Ministry and Resources, it is the competent authority to know and to solve on all activity related to the Natural Areas Protected and the resources that these contain, applying to the dispositions of this Law and its Regulation prevailing over other laws that oppose it;

That, by means of Decree number 22 of the Executive agency in the Branch of Environment and Natural Resources, published in the Official Newspaper, number twenty-nine, volume three hundred seventy and eight, of date twelve of February of two thousands eight, were declared officially, the Complex the Cóbano, like the first Marine Protected Natural Area, that includes marine area and of twenty thousand seven hundred thirty and six hectares, seventy and three areas, forty and seven point thirty and nine square meters (20, 736 are 73 to 47,39 ca) and another terrestrial of a superficial extension of five hundred seventy and six hectares seventeen nine areas ninety and point fifty and three square meters (576ha 17a 99.53ca);

On May 17, 2017, were emitted by means of Agreement number two hundred five, of the Executive agency in the Branch of Environment and Natural Resources, was approved the Plan of Handling of the Complex Natural Area Protected the Cóbano;

Only two documents have been prepared to generate guidelines to contribute to the conservation of cetaceans in the country: Proposal for the establishment of a route to observe cetaceans in the Los Cóbano Protected Natural Area, El Salvador (Rivera-Muñoz 2009); Manual for responsible whale watching in El Salvador (MARN 2019).

On November 24, 2017, were approved on the part of Environment and Natural Resources, the “Instructive one for the sighting responsible for cetaceans in El Salvador”, (RAM-GAN-IT-02), which has like object: “To apply good practices for the whale watching in the marine zone of El Salvador”;

That in agreement the regulated thing in Manual of Organization of the Ministry of Environment and the Natural Resources, in literal the d), determines the functions for the Management of Wildlife, which was authorized the twenty of January of year two thousand twenty, corresponds to him to the MARN to coordinate and to implement the National Program of Conservation of Cetaceans;

Applicable legislation and policies.

- The Constitution of the Republic of El Salvador.
- The Environment Law
- Law of Conservation of Wildlife
- Law of Protected Natural Areas
- General law Harbor Marítima
- General law of Arrangement and promotion of Fisheries and Aquaculture
- Environment National policy
- Policy of the sea and coast of El Salvador
- National strategy of Biodiversity
- International treaties (on the Biological Diversity, Challenges, RAMSAR)
- Penal code

In date 6 of October of 2020, it was published in the Official Newspaper N° 200, Volume N° 429, the Agreement N° 126 of date 3 of September of 2020, which contains the National Program of Conservation of Cetaceans, PNCC (MARN 2020).

Subprograms:

1. Scientific research and monitoring.
2. Attention to strandings, entanglements and rescue
3. Responsible tourism.
4. Education and environmental awareness.
5. Governance for the conservation of cetaceans.

2.2.4 Mexico

In Mexico, the protection of whales began in 1933 by adhering to the Geneva Convention for the Protection of Whales.

On July 16, 1938, the International Convention for the Regulation of Whaling was approved. In 1948 Mexico formalized its adherence to the International Convention and Protocol for the Regulation of Whaling.

At present, all marine mammals are protected by the Official Mexican Standard 059 (DOF, 2002a), which includes the risk category and promotes conservation actions for each species. In 2002, Mexico signed a decree that established a refuge for great whales in all the Mexican territory's marine areas and the waters where Mexico exercises its sovereignty and jurisdiction (DOF, 2002b). That same year, the General Wildlife Law prohibited the extractive use of any marine mammal. It began to promote non-extractive use to conserving marine mammals and favoring the sustainable development of the population and regional economies (LGVS, 2002).

The Official Mexican Standard 131 (DOF, 2010) establishes guidelines and specifications for developing whale Watching activities (mysticetes and sperm whales) to protect and conserve the whales and their habitat.

Depending on the species, vessels must respect the minimum distances established (between 60-100 m) and maintain speeds below 9 km / h when entering the whale or dolphin watching area and 4 km / h during the whale watching. Boats should also avoid sudden changes in direction and speed. A maximum of 4 ships can approach a single whale or group of whales at a time, among other specifications.

2.2.5 Nicaragua

Of adhesion to the international treaty for the regulation of the hunting of the whale). Decree No 108-2002, Approved the 21 of November of the 2002, Published in the Newspaper No 240 of the 18 of December of the 2002.

The President of the Republic of Nicaragua Considering I That day 2 of December of 1946, was signed in Washington, D.C., the United States of America the International treaty for the Regulation of Caza of the Whale.

II. The adhesion on the part of our Government to this International treaty, has individual importance inasmuch as the country will have experts in the overcoming of environmental barriers that in the future are elevated on the part of countries or markets under the influence of the environmentalist currents, will develop experience in the application of modern systems of fisheries management to improve the sustainable handling of our fishing resources under advantage and the increase of the bilateral cooperation with compatible problematic countries with that results in greater development of our fishing sector and institutions that guard by the sustainable use of marine resources.

Of adhesion to the international treaty for the regulation of the hunting of the whale:
Article 1. - To adhere to the International treaty for the Regulation of Caza of the Whale, signed in Washington, D.C., the United States of America the 2 of December of 1946.

Article 2. - To put under this Adhesion the approval of the Honorable National Assembly.

Article 3. - The present Decree will enter use from its publication in the Newspaper, Official Newspaper. Dice in the city of Managua, Presidential House, 21 of November of year two thousand two. Enrique Bolaños Geyer, President of the Republic of Nicaragua.

2.2.6 Panama

International agreements

Panama first joined the International Whaling Commission (IWC) in 1954, it retired in 1980 and came back in 2001; starting to form part of the countries of the Grupo de Buenos Aires (GBA), which promotes the non-lethal use and conservation of cetaceans around the world.

On November 19th 1956 Panama signed the International Convention and Protocol for the Regulation of Whaling in Washington (USA).

On August 17th 1978 Panama ratified its adherence to the Convention on International Trade of Endangered Species of Wild Fauna and Flora (CITES).

Action Plan for the protection of the marine environment and coastal areas of the Southeast Pacific, adopted in 1981.

1982 Convention on the Law of the Sea, ratified by Law 38 of June 4, 1996.

Convention on Biological Diversity. 1992, Summit of Rio de Janeiro, Brazil. (CBD) Cooperation and Synergy with the 1997 Convention on Biological Diversity.

Declaration of San José on the Eastern Pacific Marine Corridor of April 2, 2004.

National laws

The penal code of the Republic of Panama on its XIII title, criminally penalizes acts that violate environmental protection standards.

Law 13 of May 5, 2005, which creates the Marine Corridor of Panama for the protection and conservation of marine mammals in jurisdictional waters of the Republic of Panama. This also creates the directive committee of the marine corridor with defined functions.

ADM/ARAP January 1, 2007 Resolution, establishes normative for whale watching in jurisdictional waters of Panama.

Law 14 of May 22nd, 2007, in its 405 articles, prohibits capture and hunt of protected or endangered species, also traffic and commercialization of wildlife and endemic vulnerable endangered species.

Law 9 of March 20, 2006, which prohibits shark finning in jurisdictional waters of the Republic of Panama and the use of marine mammals as bait for shark fishing.

Executive decree 97-A of August 2010, whereby the Policies of the Aquatic Resources of Panama for Fishing and Aquaculture are adopted.

In 2015 the Smithsonian Tropical Research Institute (STRI) and the Panama Canal Authority (ACP) created a normative on traffic separation schemes for the Panama Canal during the whale season. The International Maritime Organization (IMO) adopted this norm in 2014 through circular SN 1/Cir.326. The IMO through the Maritime Safety Committee approved this traffic separation scheme on the Pacific coast of Panama since the 0000 hours UTC on December 1, 2014. To reduce the risk of lethal strikes with cetaceans, it is recommended that, as far as it's safe and practical to do so, ships proceed at a speed of no more than 10 knots, from August 1st to November 30th every year. This recommendation applies to both traffic

lanes of the traffic separation scheme in the Gulf of Panama. However, fishing, whale watching, tourism, sports fishing and private vessels do not follow the speed limits, which still results in potential accidents.

Resolution DM 0530 of the Ministry of Environment, January 13th, 2017, which establishes whale watching in jurisdictional waters of the Republic of Panama.

2007: the committee creates the first whale watching protocol in Panama.

2017: the first revision of the protocol is carried out, including aspects such as sanctions.

2021: the committee approves the new version of the protocol strengthening some aspects of the documents.

Executive decree 6-A of January 16, 2020, which dictates mandates to reduce the risk of fishery-related lesions and mortality to marine mammals. This decree establishes criteria to decrease fishing-cetacean interactions; avoid harassment, hunting, on board retention and/or death; and creates procedures in case of incidental capture or bycatch.

2.2.7 United States

3. Governance

3.1 Coordination of a CMP

The USA, México, Guatemala, El Salvador, Nicaragua, Costa Rica, and Panama will select a coordinator for the CMP of the Central American humpback whale population.

3.1.1. Steering Committee

Each country will nominate candidates for the Steering Committee, whose terms of reference are:

1. Constituted by government representatives from the range states (the USA, México, Guatemala, El Salvador, Nicaragua, Costa Rica, and Panama) and one representative from the IWC.
2. The Steering Committee can invite observers to attend its meetings.
3. The Coordinator is an ex-officio member of the Committee.
4. A Chair will be selected by the Countries for each meeting.
5. Members serve for the duration of the CMP unless replaced by the nominating parties.
6. Provide a focus and monitor the delivery of the CMP.
7. Guide to and encourage conservation actions by the range states.
8. Report and respond, as appropriate, to requests from range states, IWC, and other international fora regarding the CMP.
9. Facilitate the exchange and sharing of information.
10. Report to the IWC through the Conservation Committee.
11. Oversight of the work program of the Coordinator.
12. Manage any funding provided by the IWC to implement the CMP.

3.2 Timeline for a CMP

Activity	2020				2021				2022			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Develop the CMP												
Country meetings	X											
CMP review		X	X	X	X							
CMP finalized and approved by the country						X						
CMP review by IWC committees							X					
CMP improvement								X	X			
CMP final version submission to IWC										X		

4. Science

4.1 Biology, Status, and Environmental Parameters

Humpback whales have been distributed in all the world's oceans. It is a highly migratory species. It is distributed in its feeding areas during the spring-autumn, located in waters of middle or high latitudes. Later in winter, it goes to its delivery areas in the tropics (Clapham, 2018). Of the North Pacific population, an abundance of 21,808 (CV = 0.04) has been estimated (Barlow et al., 2011).

Although the structure of this population is not clear, some migratory connections have been established. The reproductive groups distributed in the coasts of Japan, Hawaii, and the north of the Mexican Pacific (Baja California-Nayarit) feed mainly on the Kamchatka Peninsula, the Bering Sea, and the Gulf of Alaska. In the winter nursery areas of southern Mexico and Central America, they feed on Canada and the United States (Calambokidis et al., 2008; Baker et al., 2013). In the Mexican Pacific, humpback whales aggregate at the southern tip of the Baja California peninsula, particularly between Cabo Pulmo and Cabo San Lucas, around the Tres Marías Islands and Isla Isabel, and off the mainland coast from Mazatlán to Chiapas (Central America) (Urbán et al., 2000).

4.2 Critical Habitats Associated with the Central American humpback whale population.

The humpback whale population in Central America has been little studied. Population estimates indicate a small size, particularly vulnerable to anthropogenic threats. The monitoring of this population should be oriented to know the population structure and the intensity of its threats.

4.3 Attributes of the Population to be Monitored.

According to NOAA, the Central America population, or Distinct Population Segment (DPS), is described as humpback whales that breed in Central America's waters (Panama, Costa Rica, Nicaragua, El Salvador, Honduras, and Guatemala). Southern Mexico in the North Pacific Ocean migrates along the coast of Mexico and feeds along the United States' west coast.

This population or DPS is listed as endangered, and the most recent estimation is 783 whales (CV = 0.170) (Wade, 2017). This small population is particularly vulnerable to anthropogenic threats. These humpback whales are bycatch on their feeding ground off California. This bycatch occurs mainly in the crab fishery and poses a significant threat to this depleted population's conservation. Off the west coast of Baja California, Mexico, and Mexico's mainland coast, there were 95 records of entanglement between 2004 and 2017. Vessel strikes also pose an additional threat on the US's west coast and to this population as it traverses some of the busiest ports on the west coast of the United States.

The Humpback Whale Biological Review Team (BRT) from NOAA concluded that: "The potential for this population to be at high risk of extinction is considered largely reflecting uncertainty regarding population size and population trend; and that the threats identified are likely to impact the population in its entirety"; "The breeding ground of this DPS occupies a unique ecological setting, and its primary feeding ground is in a different marine ecosystem from most other populations. The loss of this population would also result in a significant gap in the range of the species".

5. Threats, Mitigation Measures, and Monitoring

5.1 Identification of Threats

This small population is particularly vulnerable to anthropogenic threats. These humpback whales are bycatch on their feeding ground off California. This bycatch occurs mainly in the Dungeness Crab fishery and poses a significant threat to the conservation of this depleted population. Vessel strikes also pose an additional threat on the US's west coast and to this population as it traverses some of the busiest ports on the west coast of the United States (Caretta et al., 2018). Off the west coast of Baja California, Mexico, and the mainland coast of Mexico, there were 95 records of entanglement between 2004 and 2017 (Urbán et al., 2017).

In Central American waters, the main threats to these humpback whales are ship strikes, mainly off Panama. Guzman et al. (2013) noted that Panamanian waters are among the 20 most transited regions globally. In the Gulf of Panama, humpback whales are at risk from ship strikes during winter due to the heavy maritime traffic. Other potential threats to these whales throughout their range include anthropogenic noise (acute and chronic), micro-and nano-plastics, physical disturbance, and climate change. Considering all the above human-related threats that this population is facing, a CMP could help better manage human activities that affect humpback whales throughout their range to maintain a favorable conservation status using the best available scientific knowledge.

Whale-watching tourism and scientific research occur, at relatively low levels, on both the feeding and breeding grounds of this population as well as along the migratory route. Whale watching is highly regulated in the US and, to a lesser degree, in Mexico waters. Many Central American countries also have whale watching guidelines and regulations in the breeding ground of this population. Whale-watching is therefore not considered a threat to this population. Scientific research activities such as observing, collecting biopsies, photographing, and recording underwater vocalizations of whales occur at different levels throughout this population's range, though no adverse effects from these events have been recorded.

Table: Summary of actual and potential threats to the nominated population.

Actual/ Potential Threat	Country	Cause or related activity	Evidence	Possible Impact	Priority Actions	Relevant actions	Party Responsible
Directly lethal threats							
Bycatch	USA	Intense fishing activity	Strong	Mortality /or serious injury	High	RES-1.1 RES-1.2 RES-1.3 RES-1.8 MON-1.1 MON-1.3 MIT-1.1 MIT-1.2 PACB 1.1 PACB 1.2	Robert Brownell
	Mexico		Strong	Possible high Mortality / or serious injury	High		Lorenzo Rojas Jorge Urban Astrid Frisch Lorena Viloria
	El salvador		no evidence	serious injury	High		Luis Pineda
	Guatemala		no evidence	serious injury	High		Airam López
	Nicaragua		no evidence	serious injury	High		Joëlle De Weerd
	Costa rica		Low	serious injury	High		Catalina Mora Frank Garita
	Panama		Moderate	serious injury	High		Lisette Trejos /Karen Domínguez
	Ship Strike		USA	Intense of the traffic of commercial vessels	Strong		Possible high Mortality /

				or serious injury		MON-1.3 MON-1.5 MIT-1.3 PACB 1.1 PACB 1.2	
	Mexico	Intense of the traffic of commercial vessels	Strong	Possible high Mortality / or serious injury	High		Jorge Urban Lorena Viloria
	El salvador	Intense of the traffic of commercial vessels	no evidence	Possible serious injury	High		Luis Pineda
	Guatemala	Intense of the traffic of commercial vessels	no evidence	Possible serious injury	High		Airam López
	Nicaragua	Intense of the traffic of commercial vessels	no evidence	Possible serious injury	High		Joëlle De Weerd
	Costa rica	Intense of the traffic of commercial vessels	no evidence	Possible serious injury	High		Catalina Mora Frank Garita
	Panama	Intense of the traffic of commercial vessels	Moderate	Possible serious injury	High		Lisette Trejos /Karen Domínguez
Sub-lethal threats							
Whale Watching	USA		no evidence	Possible low injury	Medium		Robert Brownell
	Mexico	Increased whale watching activity	Moderate	Possible low injury	Medium		Jorge Urban Astrid Frisch Lorenzo Rojas
	El salvador		no evidence	Possible low injury		RES-1.1 RES-1.2 RES-1.5 MON-1.6 MON-1.7 MIT-1.4 MIT-1.5 PACB 1.1 PACB 1.2	Luis Pineda
	Guatemala		no evidence				Airam López
	Nicaragua	Low whale watching activity	no evidence				Joëlle De Weerd
	Costa rica	The regulations of the activity are not followed	Moderate	Possible moderate injury	Medium		Catalina Mora Frank Garita
	Panama	No whale watching from this population	Low				Lisette/Karen

Marine debris	All countries	An increased amount of marine litter	no evidence	Possible high Mortality / or severe injury		RES-1.1 RES-1.2 RES-1.7	Range states
Pollution anthropogenic	All countries	An increased amount of marine litter	no evidence	Possible high Mortality / or severe injury		RES-1.1 RES-1.2 RES-1.7	Range states
Noise impact	All countries	An increased amount of marine litter	no evidence	Possible high Mortality / or severe injury		RES-1.1 RES-1.2 RES-1.7	Range states

6. Actions

These form the critical component of any CMP. While there may be overlap, these can generally be incorporated under the following categories: RES = research, MON = monitoring, MIT = mitigation, PACB = public awareness campaigns and capacity building, and COORD = Coordination).

Actions	Countries	Tentative Timeline
RES-1. Continue to investigate Population Structure, abundance, and threats		
RES 1.1. Identify the population structure	All countries	2026
RES 1.2. Estimate population size and trends	All countries	2026
RES 1.3. Development of a database on locations of fishing gear in the range of Central American humpback whale population	All countries	2026
RES 1.4 Development of a database on ship traffic in the range of Central American humpback whale population	All countries	2026
RES 1.5 Development of a database on ship strikes in the range of Central American humpback whale population	All countries	2026
RES-1.6 Evaluate the potential impact of whale watching.	All countries	2026
RES-1.7 Evaluate the potential impact of microplastics, noise, and contaminants.	All countries	2026
RES-1.8 Evaluate the potential impact of lost fishing gear (ALDFG).	All countries	2026
MON-1. Monitor Abundance, Trends, and threats		
MON-1.1 Ensure long-term monitoring of abundance and trends of this population through photo identification	All countries	2026
MON-1.2 Conduct systematic monitoring of the body condition.	All countries	2026
MON-1.3 Document cases of entanglements.	All countries	2026
MON-1.4 Conduct systematic recording of cases of ship strikes	All countries	2026
MON-1.5 Assessment systematic recording of cases of ship strikes	All countries	2026
MON-1.6 Monitoring changes in the distribution of females with calf in the WW areas.	All countries	2026
MON 1.7 Document the size of the WW fleet and the WW areas.	All countries	2026
MIT-1. Mitigate Bycatch/habitat loss/pollution		
MIT-1.1 Capacity building to release entanglement humpback whales from fishing gear	All countries	2026
MIT-1.2 Reduction of entanglement of humpback whales in fishing gear	All countries	2030
MIT-1.3 Review the routes of large commercial ships and propose virtual highways and avoid collisions	All countries	2030
MIT-1.4 Promote self-regulation schemes Incentivizing good practices where whale watching is practiced.	All countries	2030
MIT-1.5 Development, update, and implement WW regulations in the range states	All countries	2030

PACB-1. Develop a Strategy to Increase Public Awareness of the Central American humpback whales population		
PACB 1.1. Design and implement a public awareness campaign for the community and ecosystem value of the Central American humpback whale population.	All countries	2025
PACB 1.2. Include educational programs, especially in schools related to ecology and conservation of the Central American humpback whale's population	All countries	2025

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8. Appendices

1. Listo of Participants

Airam López Roulet	Consejo Nacional de Áreas Protegidas	Guatemala
Eugenia Arguedas Montezuma	Sistema Nacional de Áreas de Conservación	Costa Rica
Catalina Mora Cordero	Áreas de conservación y reservas biológicas	Costa Rica
Luis Armando Pineda Peraza	Ministerio de ambiente y Recursos Naturales	El Salvador
Benito Bermudez	Comisión Nacional de Áreas Naturales Protegidas	México
Dulce María Ávila Martínez	Comisión Nacional de Áreas Naturales Protegidas	México
José Julio Casas	Ministerio de Ambiente	Panamá
Lisette Trejo	Ministerio de Ambiente	Panamá
Ryan Wulff	NOAA	USA
Robert Brownell	NOAA	USA
Astrid Frisch-Jordan	Ecología y conservación de ballenas	Invited Participant
Betzi Pérez	PANACETACEA	Invited Participant
Esther Quintana-Rizzo's	College of Marine Science	Invited Participant
Frank Garita	Fundación Kelp	Invited Participant
Joëlle de Weerd	Association ELI-S, Cetacean Conservation of Nicaragua	Invited Participant
John Calambokidis	Cascadia Research Program	Invited Participant
Jorge Urbán R.	Universidad Autónoma de Baja California Sur	Invited Participant
Lorena Viloria-Gómora	Universidad Autónoma de Baja California Sur	Invited Participant
Lorenzo Rojas-Bracho	Secretaría del Medio Ambiente y Recursos Naturales	Invited Participant
Melvin Castañeda	Proyecto Megaptera	Invited Participant
Miguel Iñíguez Bessega	Fundación Cethus	Invited Participant
Osmar Sandino	Pasopacífico.org	Invited Participant
Pamela Martínez-Loustalot	Universidad Autónoma de Baja California Sur	Invited Participant

