CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES
OF WILD FAUNA AND FLORA

Twenty-seventh meeting of the Animals Committee
Veracruz (Mexico), 28 April – 3 May 2014

Interpretation and implementation of the Convention

Periodic review of species included in Appendices I and II [Resolution Conf. 14.8 (Rev. CoP16)]

REVIEW OF *MONACHUS TROPICALIS*

1. This document has been submitted by the United States of America[1].

Review of *Monachus tropicalis (Gray, 1850)* in the Periodic Review of Species Included in Appendices I and II [Resolution Conf. 14.8 (Rev. CoP16)]

INTRODUCTION

2. After the 25th meeting of the Animals Committee (Geneva, Switzerland, July 2011) and in response to Notification No. 2011/038, the United States of America committed to the evaluation of *Monachus tropicalis* as part of the Periodic review of the species included in the CITES Appendices.

3. This species occurred throughout islands of the wider Caribbean Sea, and has been determined by some to be extinct. During our review, we consulted with national authorities for the countries within the former range of this species; however, previous research determined that the last confirmed sighting of this species occurred in 1952 at Seranilla Bank, an area between Jamaica and the Yucatan Peninsula.

4. Following our review of the status of this species, the United States recommends removal of the extinct Caribbean monk seal, *Monachus tropicalis,* from Appendix I in accordance with the Resolution Conf. 9.24 (Rev. CoP16).

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[1] *The geographical designations employed in this document do not imply the expression of any opinion whatsoever on the part of the CITES Secretariat or the United Nations Environment Programme concerning the legal status of any country, territory, or area, or concerning the delimitation of its frontiers or boundaries. The responsibility for the contents of the document rests exclusively with its author.*

DRAFT PROPOSAL TO AMEND THE APPENDICES

(in accordance with Annex 6 to Resolution Conf. 9.24 (Rev. CoP16), as amended)

Seventeenth meeting of the Conference of the Parties

Cape Town (South Africa), XX–XX --- 2016

---DRAFT---

CONSIDERATION OF PROPOSALS FOR AMENDMENT OF APPENDICES I AND II

A. Proposal

Remove the extinct Caribbean monk seal, *Monachus tropicalis,* from Appendix I in accordance with the Resolution Conf. 9.24 (Rev. CoP16). The species does not meet the biological criteria (Annex 1) and trade criteria (Annex 5) for inclusion in Appendix I.

The precautionary measures referred to in Annex 4 A1 and D are not considered to be required for this proposal. Paragraph 1A requires species listed on Appendix I to be first transferred to Appendix II so that the impact of any trade can be monitored. The United States considers that it is not necessary to first transfer the species to Appendix II as it is extinct, trade was not the cause of extinction and it is never likely to be in trade. Paragraph D states that species regarded as possibly extinct should not be deleted from Appendix I if they may be affected by trade in the event of their rediscovery. Retaining the species on Appendix I with the annotation of 'possibly extinct' is not warranted because in the unlikely event of its rediscovery it will not be affected by trade.

B. Proponent

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C. Supporting statement

1. Taxonomy

1.1	Class:	Mammalia	
1.2	Order:	Carnivora	
1.3	Family:	Phocidae	
1.4	Genus, species or subspecies, including author and year:	*Monachus tropicalis (Gray, 1850)*	
1.5	Scientific synonyms:	None	
1.6	Common names:	English:	Caribbean Monk Seal, West Indian Seal, West Indian Monk Seal
		French:	
		Spanish:	Foca Fraile Del Caribe
1.7	Code numbers:		None

2. Overview

As part of the ongoing periodic review of the Appendices, the Animals Committee recommended that the status of the Caribbean monk seal (*Monachus tropicalis*) be evaluated (AC 26 WG1 Doc. 2). The species was selected for Periodic Review between CoP15 and CoP17 by the Animals Committee at AC25 (Geneva, July 2011), in compliance with Resolution Conf. 14.8 on *Periodic Review of the Appendices*, paragraphs b), c) and d), in consultation with the UNEP World Conservation Monitoring Centre. In compliance with Resolution Conf. 14.8 (Rev. CoP16) on *Periodic Review of the Appendices* (paragraphs e), notification went to the Parties in Notification 2011/038; the United States expressed interest in undertaking this review.

This species was listed in CITES Appendix I at the generic level (along with the Mediterranean and Hawaiian monk seals) when the Convention went into effect in 1975. The listing was predicated on the possibility of there being living specimens, even though the last documented observation of a live specimen was in 1952 at Seranilla Bank, an area between Jamaica and the Yucatan Peninsula (Rice 1973).

The entire species was originally listed as Endangered in 1967 under the United States Endangered Species Preservation Act (ESA) of 1966 (Federal Register 32, 1967), and the listing was revised in 1979 (Federal Register 44, 1979), again as Endangered. The Caribbean monk seal status under the ESA was reviewed in 1984 and at that time the best available evidence indicated that the species was extinct (Federal Register 49, 1984). Surveys were done throughout its range to verify that there were no living specimens and while these surveys found no evidence of surviving populations, the species was not removed from the ESA list (Boyd and Stanfield 1998; Woods and Hermanson 1987). In 2006 the National Marine Fisheries Service initiated another review of the status of this species and in 2008, this species was determined to be extinct and was removed from the ESA list (NMFS 2008). In 1996, the IUCN Pinniped Specialist Group described the Caribbean monk seal as extinct in their Redlist, with additional information in a Species Survival Network document (CITES 2000).

One trade record is documented for this species and it occurred in 2009. The six scientific specimens in this record originated in Mexico and were re-exported from the United States to Germany. No other trade is recorded in the CITES database for this species.

The cause of the extinction of this species was overharvest. Since the species was first identified during the voyages of Columbus in the late 1400s the species was hunted for meat and its blubber which was processed for use as lamp oil and a lubricant. Due to the ease of capture when the species hauled out on land, the colonies were easily depleted. By the beginning of the 1900s there were few active Caribbean monk seal colonies left. While various seal species were occasionally seen, and still are observed in this region, it has been determined that these specimens are strays from their species' normal home ranges. The species has been deemed extinct throughout its historical range by the U.S. and by the IUCN Pinniped Specialist Group. It also qualifies as a Possibly Extinct Species by CITES under Conf. 9.24 (Rev. CoP16).

3. Species characteristics

3.1 Distribution

This species was endemic to the entire Caribbean region and found within the Caribbean Sea, Gulf of Mexico and the West Atlantic Ocean northward from the coasts of Guyana. They were known from Cuba, Jamaica and the Greater and lesser Antilles (Shirihai and Jarrett 2006), and there are records indicating that breeding grounds included the Bahamas and the Yucatan, Mexico. There are Colombian records indicating its presence in the southwestern region of the Caribbean (Rodríguez- Mahecha et al., 2006) The degree of movement between the different regions within the range is not known.

Map of historic range of *Monachus tropicalis* (NOAA, 2010)

3.2 Habitat

This was a terrestrial marine species which occupied coastal environments on both the mainland and islands within its range. It was non-migratory and rocky and sandy coastal habitats were both used for shelter and breeding areas (King 1983). The species' extinction was furthered by its lack of fear of man, along with its sluggishness on land, and its curiosity.

3.3 Biological characteristics

The Caribbean monk seal is one of three species within the genus *Monachus*. The two extant species include the Hawaiian monk seal (*Monachus schauinslandi*) and the Mediterranean monk seal (*Monachus monachus*). Due to similar functional dentition and osteological features, the Caribbean monk seal is believed to have consumed a variety of fish, cephalopods and crustaceans, as do the present day extant species (Marchessaux 1989, Goodman-Lowe 1998, Adam and Berta 2002).

Subadults were believed to forage nocturnally in near-shore waters to minimize competition with adults which foraged primarily at dawn and dusk (Adam and Garcia 2003).

The last confirmed sighting of this species was in 1952 and most of the basic biological knowledge of this species is from natural history observations in the late 1800's. Ward (1887) presented evidence indicating that pupping probably occurred early in December, when he collected a newborn suckling pup and five females with fetuses from the Triangle Keys off Mexico in early December. According to King (1983), the pups were born in early December and had a shaggy coat of clear black color, however that is all that is known and there is no information about the pairings or breastfeeding. While Rice (1973) hypothesized that this species rarely produced a pup yearly, based on research on the Hawaiian and Mediterranean monk seals, pupping in these species occurs regularly on a yearly basis (Johanos et al. 1994; Johnson et al. 2006). The exact lifespan of the animal is not known but, based on the other two species of monk seal, a maximum age of 20-30 years (Adam 2004).

3.4 Morphological characteristics

The species has a typical seal like smooth body contour, with a well-developed blubber layer, flippered limbs and a short tail. The head is large with large, prominent reddish-brown eyes. The pelage in the adult is dark dorsally, varying from brown to black, and grading into a light pale yellow to pale yellow-brown ventrally. The muzzle color is yellowish-white on the front and sides and along the edge of the lips.

The Caribbean monk seal is one of three species within the genus *Monachus*. The species is sexually dimorphic and fully grown adult sizes were known to reach between 2.0 and 2.5 meters in length, with males being somewhat larger than females (Allen 1887b). The two sexes were similar in appearance and size differences were too slight to be able to determine sex based on this trait. Females had two pair of mammae (Ward 1887).

3.5 Role of the species in its ecosystem

The role of this species in the ecosystem was not well studied but it is believed to have helped shape the species abundance and composition of the Caribbean reef populations. Early populations were found throughout the wider Caribbean and were locally numerous and so must have had a notable, but undocumented, effect on their local prey base.

4. Status and trends

4.1 Habitat trends

There is no information regarding changes in the habitat of this species as it has not been seen for over 60 years. Since extinction was brought about by overharvest, habitat issues were not believed to be a factor involved in the extinction of this species.

4.2 Population size

There was no specific information on the size of the populations of the Caribbean monk seal before it went extinct, however, it is estimated that there were between 233,000 and 338,000 individuals. The individuals were believed to be located in approximately 13 colonies throughout the species' range (McClenachan and Cooper 2008).

The National Information System on Biodiversity (SNIB) CONABIO database, in Mexico, has at least 66 historical records (1700-1984) of this species (Annex 1).

4.3 Population structure

There is no specific information available on the population structure of *Monachus tropicalis* however, McClenachan and Cooper (2008), using various population assumptions, mathematically predicted a possible structure for this species' population.

4.4 Population trends

There are reports of the species being abundant at the time Europeans first made contact, but due to continued overexploitation since it was first encountered the species became rare by the late 19th century. By the early 20th century the species abundance had been severely depleted and the last verifiable report of this species was in 1952 (NMFS 2008). Even in 1952 it was believed by some to have already become extinct (Kenyon 1977; Adam and Garcia, 2003).

According to McClenachan and Cooper (2008), the extinction of monk seal colonies followed a predictable pattern in space and occurred in two distinct phases. In the first wave of extinction in the 18th century, middle colonies (less than 1500 km from the center of distribution) had less than a 10% probability of extinction and those on the periphery (over 1500 km) had a 35% chance of extinction. In the second wave of extinction, the probability of extinction increased in all the colonies, and was enhanced in peripheral colonies (Figure 1).

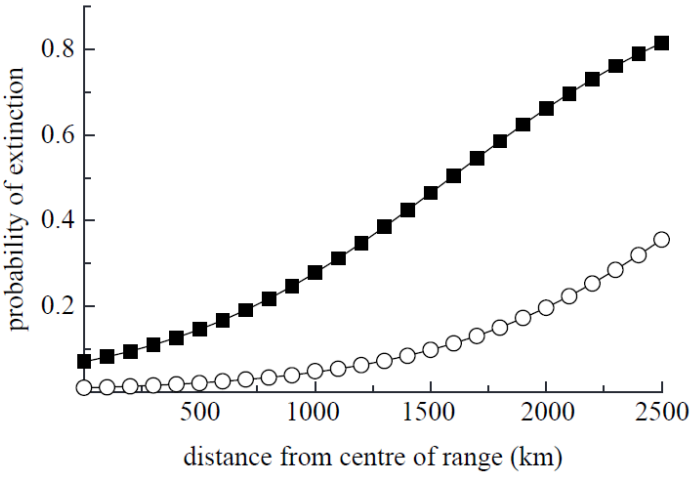

Figure 1. The extinction of colonies of Caribbean monk seals occurred in two distinct phases. The probability of extinction in each phase is a function of the distance from the center of its range, with colonies in the periphery having a higher probability of extinction in both phases. Phase 1, 18th century (circles), Phase 2, 20th (squares). (McClenachan and Cooper, 2008)

Scientific societies specialized in marine mammals or mammals, such as the Society for Marine Mammalogy, consider the species extinct. Generally, according to the available information, there is consensus in the scientific community that this species probably became extinct in the twentieth century (Rojas-Bracho, 2014).

4.5 Geographic trends

The Caribbean monk seal's range was restricted to the wider Caribbean. While the populations were apparently able to support the limited harvest by the native local populations, once the Europeans arrived the populations began to quickly decline. Populations which could be easily harvested were the first to disappear and those that remained the longest were located in more remote, harder to locate locations. Since this species needed to occasionally haul out onto beaches, whenever these beaches were identified the seals were easily targeted for harvest. By the mid-20th century the last of the species was gone.

5. Threats

The cause for the decline and extinction of the Caribbean monk seal was the unsustainable harvest which began with the arrival of the first European explorers. Overharvest primarily for oil and meat, along with meat consumption and collection of specimens for zoos and scientific study led to the extinction of this species.

In more recent years, the species was also persecuted by the fishing industry. Presumably seals were hunted in small quantities during the 1500s and 1600s, with heavy exploitation from late 1600's onward. A

chonology of major events that occurred with reference to the species, since its discovery until the present, can be found in Annex 2.

6. Utilization and trade

6.1 National utilization

None known presently since the species is considered extinct.

6.2 Legal trade

There is no trade in live Caribbean monk seals as the species is considered extinct; there is one CITES record of trade in specimens occurring in 2009; this was the transfer of six scientific specimens. There is no historical data indicating that the species was subject to trade, but since it was harvested for meat and conversion into oil for lubrication and use in oil lamps, there probably was some trade. As there is currently very limited trade in the other two extant, CITES Appendix I monk seals (UNEP-WCMC 2014), the Hawaiian monk seal and the Mediterranean monk seal, it is not believed that there would be any modern day trade in this species (NMFS 2008).

6.3 Parts and derivatives in trade

The one record of trade in this species was for specimens used for scientific purposes.

6.4 Illegal trade

There was, and is currently, no indication of illegal trade in the Caribbean monk seal. Illegal trade is not considered to have been a factor in this species extinction.

6.5 Actual or potential trade impacts

The Caribbean monk seal was not subject to trade before its extinction and should the species be rediscovered, it is unlikely that there would be any trade activity for this species.

7. Legal instruments

7.1 National

There is currently no national legislation pertaining to this species, however if it were found not to be extinct it would still be protected under the U.S. Marine Mammal Protection Act. After a review of the species status, in 2008 it was removed from the endangered species listing under the U.S. Endangered Species Act, due to the determination that the species was extinct.

In Colombia this species was officially recognized as extinct in 1986 by the National Institute of Renewable Natural Resources and the Environment (INDERENA) (Rodriguez et al. 2006)

According to Mexican law, this species is listed as probably extinct in the wild (E) from the 2001 version of the list of endangered species of Mexico (NOM-059-SEMARNAT-2010, Diario Oficial de la Federación (DOF), 2010).

7.2 International

The species is listed as Extinct under the International Union for Conservation of Nature (IUCN) Red List 2013 (IUCN 2013). *Monachus tropicalis*, and the two extant species of *Monachus*, are listed in Appendix I under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). Permits are required for the import and export of CITES Appendix I listed species, and no commercial trade is allowed.

8. Species management

8.1 Management measures

No management measures are currently taking place as the species has been determined to be extinct.

8.2 Population monitoring

The species is considered to be extinct. Numerous surveys were conducted to determine the presence of the species across the former range but no indication of its presence was found.

The interest in the monk seal in the middle of the nineteenth century led to an increasing number of observations, but few new discoveries. As shown in Figure 2, almost from the twentieth century there were no reports or sightings of this species. Leboeuf et al (1986) covered almost the entire area of distribution of this species and found no evidence (sightings, bones, etc.) that might give some hope for the survival of this species.

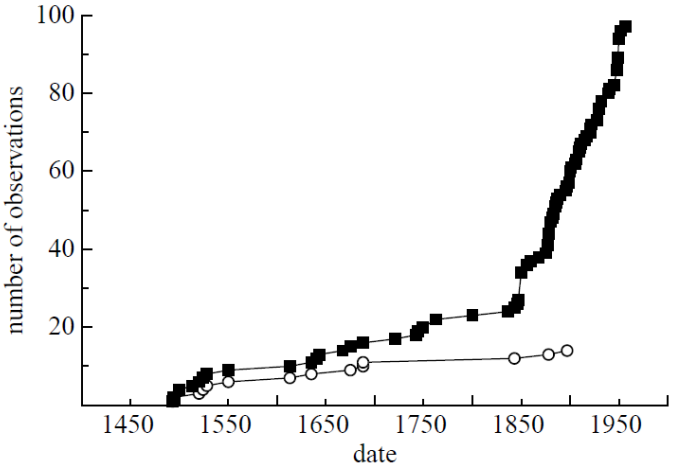

Figure 2. Number of observations (black circles) and discovery of new populations of monk seals (open circles) (McClenachan and Cooper 2008).

8.3 Control measures

8.3.1 International

Monachus tropicalis, and the two extant species of *Monachus,* are listed in Appendix I under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). Permits are required for the import and export of CITES Appendix I listed species.

8.3.2 Domestic

Should the Caribbean monk seal be rediscovered, any take from the wild would be strictly regulated by relevant legislation in Mexico and the United States.

8.4 Captive breeding and artificial propagation

There were no captive breeding programs for the species before the extinction of *Monachus tropicalis.*

8.5 Habitat conservation

Suitable habitat for the Caribbean monk seal still remains throughout its former range, however habitat has been drastically altered and reduced by urban and tourist developments and it is considered highly unlikely that individuals of this species would shift to other habitats like the seals of Hawaii and

the Mediterranean (Rojas-Bracho 2014). Generally, the habitat within the former range however is considerably reduced due to modification and curtailment (NMFS 2008).

8.6 Safeguards

If this species were rediscovered, in the United States it would immediately be protected under the Marine Mammal Protection Act.

According to Mexican national legislation, NOM-059-SEMARNAT-2010, paragraph 6.4 states that in the case of a rediscovery or re-population of a species originally considered as probably extinct in the wild, you will immediately proceed to change its category listing it as endangered. This would automatically fall within the regulation and protection of national legislation (DOF 2010).

9. Information on similar species

The Hawaiian monk seal, *Monachus schauinslandi*, is similar in overall appearance to the extinct Caribbean monk seal and females attain a length of approximately 2.4 meters while males reach approximately 2.1 meters in total length. This is approximately the size reached by the Caribbean monk seals. It is geographically restricted to the chain of Hawaiian island and the population is declining at approximately 4%/year (Lowry and Aguilar 2008). It is listed in CITES Appendix I and trade in this species has been intermittent and is solely for scientific and display purposes. The IUCN Red List for this species is Critically Endangered. The United States lists the species as Endangered under their Endangered Species Act.

The Mediterranean monk seal, *Monachus monachus,* is again similar in overall appearance to the Caribbean and Hawaiian monk seals but is slightly larger, attaining an overall length approaching 2.8 meters; females are slightly larger than males (Aguilar and Lowry 2013). This overall length then is slightly larger than the size reached by the Caribbean monk seals. This species is listed in CITES Appendix I and trade in this species has been intermittent and is solely for scientific and display purposes. The IUCN Red List for this species is Critically Endangered. Its total population size is estimated at 350-450 individuals (Aguilar and Lowry 2013). The United States lists the species as Endangered under their Endangered Species Act.

10. Consultations

The species was endemic to the wider Caribbean Sea prior to its extinction. Prior to its being removed from listing under the U.S. Endangered Species Act there were contacts made within the region with individuals expected to have encountered this species if it still occurred. No documented observations of this species were made after 1952.

Potential range states where this species was previously believed to exist were consulted for this review. Of the range countries responding, none expressed concern over the removal of this extinct species from Appendix I. Countries which responded to our consultation requests included: Aruba, the Caribbean Netherlands, the Cayman Islands, Colombia, the Dominican Republic, France and Mexico.

In consultation with the United States Fish and Wildlife Service's Office of Law Enforcement, no concerns were expressed in regard to look-alike issues in relation to international trade in the other two extant species of monk seal, the Mediterranean and Hawaiian monk seals.

11. Additional remarks

None

12. References

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(Annex supplied by Mexico)

Registros del Sistema Nacional sobre Información de la Biodiversidad, CONABIO, México (1700 –1984).
Records of the National Information System on Biodiversity Conabio, Mexico (1700 -1984).

CITA	Genus	Species	Collected			Country	State	Location	Longitude	Latitude
			Day	Month	Year					
1	Monachus	tropicalis	1	1	1700	MEXICO	YUCATAN	Triangle Banks	-	-
1	Monachus	tropicalis	1	1	1700	MEXICO	YUCATAN	East Triangle, Gulf of Campeche reef of several islets in Gulf of Mexico, 185 kilometers west of Celestún, Yucátan.	-	-
1	Monachus	tropicalis	1	10	1887	MEXICO	YUCATAN	East Triangle, Gulf of Campeche; reef of several islets in Gulf of Mexico, 185 km W of Celestún, Yucátan.	-	-
1	Monachus	tropicalis	11	4	1889	MEXICO	YUCATAN	East Triangle, Gulf of Campeche reef of several islets in Gulf of Mexico, 185 km W of Celestún, Yucátan	-	-
1	Monachus	tropicalis	18	6	1900	MEXICO	Unavailable	Triangle Keys	-	-
1	Monachus	tropicalis	18	6	1900	MEXICO	Unavailable	Triangle Keys	-	-
1	Monachus	tropicalis	18	6	1900	MEXICO	Unavailable	Triangle Keys	-	-
1	Monachus	tropicalis	18	6	1900	MEXICO	Unavailable	Triangle Keys	-	-
1	Monachus	tropicalis	18	6	1900	MEXICO	Unavailable	Triangle Keys	-	-
1	Monachus	tropicalis	18	6	1900	MEXICO	Unavailable	Triangle Keys	-	-
1	Monachus	tropicalis	21	6	1900	MEXICO	Unavailable	Triangle Keys	-	-
1	Monachus	tropicalis	18	6	1900	MEXICO	Unavailable	Triangle Keys	-	-
1	Monachus	tropicalis	21	6	1900	MEXICO	Unavailable	Triangle Keys	-	-
1	Monachus	tropicalis	23	6	1900	MEXICO	YUCATAN	Triangle Keys	-	-
1	Monachus	tropicalis	18	6	1900	MEXICO	Unavailable	Triangle Keys	-	-

1	Monachus	tropicalis	18	6	1900	MEXICO	Unavailable	Triangle Keys	-	-
1	Monachus	tropicalis	18	6	1900	MEXICO	Unavailable	Triangle Keys	-	-
1	Monachus	tropicalis	18	6	1900	MEXICO	Unavailable	Triangle Keys	-	-
1	Monachus	tropicalis	18	6	1900	MEXICO	Unavailable	Triangle Keys	-	-
1	Monachus	tropicalis	23	6	1900	MEXICO	Unavailable	Triangle Keys	-	-
1	Monachus	tropicalis	18	6	1900	MEXICO	Unavailable	Triangle Keys	-	-
1	Monachus	tropicalis	18	6	1900	MEXICO	Unavailable	Triangle Keys	-	-
1	Monachus	tropicalis	21	6	1900	MEXICO	Unavailable	Triangle Keys	-	-
1	Monachus	tropicalis	21	6	1900	MEXICO	Unavailable	Triangle Keys	-	-
1	Monachus	tropicalis	23	6	1900	MEXICO	Unavailable	Triangle Keys	-	-
1	Monachus	tropicalis	18	6	1900	MEXICO	Unavailable	Triangle Keys	-	-
1	Monachus	tropicalis	22	6	1900	MEXICO	Unavailable	Triangle Keys	-	-
1	Monachus	tropicalis	21	6	1900	MEXICO	Unavailable	Triangle Keys	-	-
1	Monachus	tropicalis	23	6	1900	MEXICO	Unavailable	Triangle Keys	-	-
1	Monachus	tropicalis	23	6	1900	MEXICO	Unavailable	Triangle Keys	-	-
1	Monachus	tropicalis	18	6	1900	MEXICO	Unavailable	Triangle Keys	-	-
1	Monachus	tropicalis	21	6	1900	MEXICO	Unavailable	Triangle Keys	-	-
1	Monachus	tropicalis	22	6	1900	MEXICO	Unavailable	Triangle Keys	-	-
1	Monachus	tropicalis	23	6	1900	MEXICO	Unavailable	Triangle Keys	-	-
1	Monachus	tropicalis	23	6	1900	MEXICO	Unavailable	Triangle Keys	-	-
1	Monachus	tropicalis	21	6	1900	MEXICO	Unavailable	Triangle Keys	-	-
1	Monachus	tropicalis	26	11	1923	MEXICO	CAMPECHE	unspecified	-	-
1	Monachus	tropicalis	18	8	1951	MEXICO	CAMPECHE	Campeche Banks, East Triangle Key	-92.2	20.9
1	Monachus	tropicalis	-	-	-	MEXICO	Unavailable	Yucatan Peninsula	-	-
1	Monachus	tropicalis	-	-	-	MEXICO	Unavailable	NO DISPONIBLE	-	-
1	Monachus	tropicalis	-	-	-	MEXICO	YUCATAN	NO DISPONIBLE	-	-
1	Monachus	tropicalis	-	-	-	MEXICO	YUCATAN	NO DISPONIBLE	-	-
1	Monachus	tropicalis	-	-	-	MEXICO	YUCATAN	The Triangles Reef	-	-
1	Monachus	tropicalis	-	-	-	MEXICO	Unavailable	NO DISPONIBLE	-	-

1	Monachus	tropicalis	-	-	-	MEXICO	Unavailable	Triangle Keys	-	-
1	Monachus	tropicalis	-	-	-	MEXICO	YUCATAN	NO DISPONIBLE	-	-
1	Monachus	tropicalis	-	-	-	MEXICO	CAMPECHE	NO DISPONIBLE	-	-
1	Monachus	tropicalis	-	-	-	MEXICO	Unavailable	Triangle Keys	-	-
1	Monachus	tropicalis	-	-	-	MEXICO	Unavailable	Triangle Keys	-	-
2	Monachus	tropicalis	99	12	1886	MEXICO	Unavailable	NO PRECISA	-	-
2	Monachus	tropicalis	99	12	1886	MEXICO	Unavailable	NO PRECISA	-	-
2	Monachus	tropicalis	23	6	1890	MEXICO	Unavailable	NO PRECISA	-	-
2	Monachus	tropicalis	18	6	1900	MEXICO	Unavailable	NO PRECISA	-	-
2	Monachus	tropicalis	20	6	1900	MEXICO	Unavailable	TRIANGLE KEYS	-	-
2	Monachus	tropicalis	21	6	1900	MEXICO	Unavailable	NO PRECISA	-	-
2	Monachus	tropicalis	22	6	1900	MEXICO	Unavailable	NO PRECISA	-	-
2	Monachus	tropicalis	23	6	1900	MEXICO	Unavailable	NO PRECISA	-	-
2	Monachus	tropicalis	23	6	1900	MEXICO	YUCATAN	NO PRECISA	-	-
2	Monachus	tropicalis	18	1	1900	MEXICO	Unavailable	NO PRECISA	-	-
2	Monachus	tropicalis	26	11	1923	MEXICO	CAMPECHE	GOLFO DE CAMPECHE. Isla Triangulo	-	-
2	Monachus	tropicalis	99	8	1951	MEXICO	CAMPECHE	BANCOS DE CAMPECHE. Este de Triangle Key	-	-
2	Monachus	tropicalis	-	-	-	MEXICO	Unavailable	NO PRECISA	-	-
2	Monachus	tropicalis	-	-	-	MEXICO	Unavailable	NO PRECISA	-	-
2	Monachus	tropicalis	-	-	-	MEXICO	CAMPECHE	GOLFO DE CAMPECHE. Triangulo este	-	-
2	Monachus	tropicalis	-	-	-	MEXICO	YUCATAN	COSTA DE YUCATAN. El Triángulo	-	-
3	Monachus	tropicalis	10	9	1984	MEXICO	CAMPECHE	E Cayo Triángulo	-	-

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(All information was compiled and assembled by Mexico. Translated by the U.S.)

Chronology of major events that occurred with reference to the Caribbean monk seal.

Year	Description	Reference
1492	The first piece of the Caribbean monk seal dates back to the second voyage of Columbus, in which 8 copies hunted for food ..	Kerr 1824
1600s-1900s	The Caribbean monk seals were exploited intensively for their blubber, and to a lesser extent for food, for scientific study and zoological collections after the European colonization	Allen 1880
1849	The Caribbean monk seal is described in the literature from a specimen from Jamaica.	Gray 1849
1886	It reports its presence in Triangle Keys in the Gulf of Campeche, where 49 individuals were killed during a scientific expedition.	Ward 1887
1897	The New York Aquarium acquired two specimens taken from Triangle Keys.	Townsend 1909
1906	On 25 February, fishermen killed a monk seal Caribbean five miles from Key West, Florida. This was the first sighting of the species in Florida in about 30 years.	Townsend 1906
1909	The New York Aquarium received four Caribbean monk seals live a dealer in Progreso, Yucatan. At that time, the last population of the Caribbean monk seal was confined to the islands and reefs of the Yucatan, Mexico.	Townsend 1909
1911	An expedition off the coast of Mexico killed 200 seals for collectors and scientific scholars.	Gaumer 1917
1922	A monk seal was killed by a fisherman near Key West, Florida, on March 15. This was the last confirmed sighting in the United States. Townsend said it was a small breeding colony still in Triangle Islands, the islands of the Bank of Mexico Campeche.	Townsend 1923
1932	After interviewing some people who had seen seals in the lower Laguna Madre region of Texas, Gordon Gunter concludes that some Caribbean monk seals are scattered along the Texas coast as late as 1932 (Gunter 1947). Later it was suggested that the alleged sightings of seals along the Texas coast were probably feral California sea lions.	Gunter 1968
1949	IUCN included Caribbean monk seal in a list of 14 mammals whose survival is considered a matter of international concern requiring immediate protection.	Westermann 1953
1952	CB Lewis made the appointment last reliable Caribbean monk seal in a small colony of seals, outside bank Seranilla (Colombia), between Jamaica and the Yucatan Peninsula.	Rice 1973
1973	The International Union for Conservation of Nature (IUCN) distributed leaflets in English and Spanish throughout the Caribbean, offering $ 500 for information about sightings of the species. We were unable to confirm the new sightings.	Boulva 1979

Year	Description	Reference
1973	The U.S. Fish and Wildlife U.S. undertook aerial surveys that were conducted in front of the Yucatan Peninsula, southern Nicaragua and eastern Jamaica, visiting all the sites proposed by Rice. The species was not sighted in the study area.	Kenyon 1977
1980	Arctic Biological Station, under the Department of Fisheries and Oceans Canada, supported the search for evidence of the presence of the Caribbean monk seal, in remote islands of the southeastern Bahamas by boat and conducting interviews with local fishermen. Search from the ship produced no sightings of seals. Interviews with fishermen a few new accounts of seals in the area during the 1960s and 1970s, but observations could not be confirmed as the Caribbean monk seal.	Sergeant et al. 1980
1984	In November 1984 osteological remains were collected in Cayo Triangle East, Campeche. These are deposited in the National Collection of Mammals of the Institute of Biology, UNAM, Mexico.	Villa *et al*. 1986, Cervantes Reza 2005
1984	From 5 to 15 September, a survey was conducted in the Gulf of Mexico to Campeche, Mexico, aboard Robert G. Sproul, a research vessel of the Scripps Institution of Oceanography. Interviewers visited three groups of islands off the north coast of the Yucatan Peninsula that were considered sites still used by monk seals: Triangles Islands, Cayo Arenas and Arrecife Alacran. Another island, Cayo Arcas, was visited by helicopter on September 7, 1984. There were no sightings or evidence of the presence of the species were obtained.	LeBoeuf et al. 1986
1985	The Marine Mammal Commission U.S. commissioned a survey of local fishermen, coastal residents, and sailors of northern Haiti. Two of the 77 people interviewed reported having seen a seal, one of the sightings in Île Rat, in the bay of l'Acul in 1981, it was considered reliable. In neither case, however, it was possible to confirm the sighting corresponded to a Caribbean monk seal.	Woods and Hermanson 1987
1996	The Group of Specialists on Seals IUCN includes the Caribbean monk seal as extinct on its Red List of threatened and endangered species.	Seal Specialist Group 1996
1997	Based on interviews with 93 fishermen in northern Haiti and Jamaica in 1997, concluded that there was some chance that the Caribbean monk seal may still survive in this region. Fishermen to select marine species known from a random set of images was asked: 22.6 percent (n = 21), selected monk seals. 78 percent of these (n = 16) had seen at least one in the last 1-2 years.	Boyd and Stanfield 1998
2001	An examination of the data of sightings and strandings of seals and marine mammals in the southeastern U.S. data and the Caribbean showed that it had been some identified as Arctic phocid seals between 1917 and 1996. These were animals that had strayed in tropical and subtropical waters of the western North Atlantic. Because of arctic species confirmed in the Caribbean region, most of them helmet Seals (Cystophora cristata) sightings, confirmed the observations and reliable California sea lions that had escaped from captivity, and the lack of reliable observations Caribbean monk seal since 1952, the authors concluded that the unidentified sightings since 1952, was highly unlikely to be of Caribbean monk seals.	Mignucci-Giannoni and Odell 2001
2007	Based on a review of stranding data from 1996 to 2008 were reported in southeastern U.S. over 22 sightings of Foca town and nine in tropical and subtropical waters of the western North Atlantic.	Southeast U.S. Marine Mammal varamiento

Year	Description	Reference
		Database data 2008
2008	The review of the status of the species in the U.S. concludes that pinnipeds have been recent sightings of other species, and not of Caribbean monk seals. We conclude that sufficient time has passed since the last reliable observation to infer the extinction of the species.	NMFS 2008