

MARINE MAMMAL COMMISSION
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29 January 2007

Mr. Kyle Baker
National Marine Fisheries Service
263 13th Avenue, South
St. Petersburg, FL 33701

Dear Mr. Baker:

The Marine Mammal Commission, in consultation with its Committee of Scientific Advisors on Marine Mammals, has reviewed the National Marine Fisheries Service's 29 November 2006 *Federal Register* notice announcing its intent to conduct a review of the Caribbean monk seal, *Monachus tropicalis*, under the Endangered Species Act and requesting information on the species' status. We have reviewed our files and, with great regret, we have concluded that the species is extinct and should be removed from the list of endangered and threatened species.

Fossil and archeological evidence, along with sighting records, indicate that the species once occurred from the southeastern United States through the Bahamas and the Caribbean Sea. A review of those records by Rice (1973) concluded that the last authoritative sighting was of a small colony of animals at Seranilla Banks between Jamaica and the Yucatan Peninsula in 1952. A few other unconfirmed sightings were reported from the 1950s into the 1970s, but at least some of those were reported to involve escaped California sea lions (Gunter 1968 cited in Rice 1973). Although the species may have been extinct when the Endangered Species Act was passed in 1973, the Marine Mammal Commission wrote to the National Marine Fisheries Service on 26 January 1977 recommending that the Caribbean monk seal be listed as "endangered" under the Endangered Species Act and "depleted" under the Marine Mammal Protection Act. The reason for that recommendation was that such listings would allow the implementation of available protection measures in the event that new evidence was discovered indicating its survival. The species was so listed in April 1979.

Since passage of the Endangered Species Act, several efforts have been made to investigate unconfirmed reports of the species in or near the western Caribbean Sea, Gulf of Mexico, the southern Bahamas, and Atlantic coast of the Greater Antilles. In 1973 Kenyon (1975, 1977) conducted an aerial survey of all the areas where Rice suggested that the species might still exist, including the central and western Caribbean Sea between Jamaica, the Yucatan Peninsula, Nicaragua, and the western Gulf of Mexico. He found no evidence of seals. At Seranilla Banks—thought to be the most promising location for seals—he reported several fishing boats and evidence of past fishing camps on the banks' largest island. He also noted that fishermen were likely to view seals as competitors for fish and to kill them, as has occurred with Mediterranean monk seals. Considering the "ubiquitous human presence" in even the most remote areas where seals had formerly been reported, he concluded that the species had probably been extinct since the early 1950s.

In 1980 David E. Sergeant of Canada's Department of Fisheries and Oceans, Arctic Biological Station, searched some of the remote islands in the southeastern Bahamas by vessel and

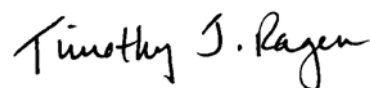
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interviewed local fishermen. His results produced a few new but unconfirmed reports of seals in the area from the 1960s and 1970s but he did not observe any seals. The Marine Mammal Commission contracted for a survey of local fishermen, sailors, and coastal residents along the north coast of Haiti, including Île de la Tortue, in 1985. The survey report (Woods and Hermanson 1987) (attached) found that two of the 77 people interviewed reported having seen a seal, including one considered to have been a reliable sighting at Île Rat in the Baie de l'Acul on Haiti's north coast. However, it was not possible to confirm whether the sightings involved a monk seal or some other seal species. In 1997 Boyd and Stanfield (1998) interviewed 93 fishermen in northern Haiti, 21 of whom indicated that they had seen a monk seal. Here again, the authors were unable to confirm that any of the reported sightings involved Caribbean monk seals. With regard to seal sightings in this area, the Commission received a copy of a photograph of a seal taken in November 1991 at a Marine Research Station at Holguin, Cuba, on the island's northeast shore. The station, about 75 miles south of the area surveyed by Sergeant and 150 miles east of Haiti, borders the area where many reported seal sightings have occurred. That seal, reportedly captured two years before the photograph was taken, was clearly an otariid, and probably a California sea lion.

Although both Boyd and Stanfield (1998) and Woods and Hermanson (1987) concluded that it was possible that Caribbean monk seals still exist, we believe that a sufficient amount of time has passed since the last reliable account of this species to conclude that the species is extinct. Caribbean monk seals must haul out on land to rear their pups. Given the growth of human populations in the Caribbean region since the 1950s and the lack of secluded habitat, stronger evidence of their survival almost certainly would have been forthcoming over the past 50 years if, in fact, they still survived. Also, given that all sightings of seals in the Caribbean region that have been documented authoritatively over the past 50 years have involved California sea lions or seals from northern North Atlantic waters (e.g., hooded seals), the Commission believes it is likely that recent unconfirmed seal sightings, such as those reported from northern Haiti, have involved species other than Caribbean monk seals. Accordingly, we believe it is reasonable and appropriate, albeit deeply regrettable, to now recognize the Caribbean monk seal as extinct.

If you have any questions regarding the comments or information referenced in this letter, please call.

Sincerely,



Timothy J. Ragen, Ph.D.
Executive Director

Enclosure

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16. Abstract (Limit: 200 words) In late 1984 and early 1985 a number of unconfirmed reports suggested that fishermen and other local residents along the north coast of Haiti may have observed one or more Caribbean monk seals, <u>Monachus tropicalis</u> . Some scientists consider the species to be extinct and, to assess the accuracy of these recent sighting reports, a series of interviews were conducted in November of 1985 with fishermen, seamen, and other coastal residents of northern Haiti, including the Ile de la Tortue. Seventy-seven individuals were queried about observations of manatees (<u>Trichechus manatus</u>) and nurse sharks, as well as seals. Two individuals reported having sighted a seal, one of whom was a reliable observer who reported that the sighting occurred in 1981 near Ile Rat in the Baie de l'Acul along the northeast coast of Haiti. It cannot be confirmed whether the animal involved was a monk seal or some other species of pinniped. Fifty-one individuals reported seeing or knowing of manatees in the coastal waters of northern Haiti. Results of the interviews are reported.			13. Type of Report & Period Covered Final Report
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INTRODUCTION

In late 1984 and early 1985, a series of unconfirmed reports suggested the possibility that one or more West Indian or Caribbean monk seals, (Monachus tropicalis), may have been sighted off the north coast of Haiti. Because the reported sightings came at a time when Federal officials were considering actions to declare the species extinct, an effort was undertaken to check the source of these reports, and to survey the region surrounding the area where the reported sighting(s) occurred in order to provide a better basis for determining their reliability.

METHODS

Between 9-16 November 1985 we conducted a series of interviews along the north coast of Haiti between Fort Liberte in the east (five kilometers from the frontier with the Dominican Republic) westward to the city of Port-de-Paix 115 kilometers from Fort Liberte. Interviews were also conducted along the south coast of the Ile de la Tortue as well as at several locations on the wind swept north coast of this small island located eight kilometers north of the main island of Hispaniola in the area of Port-de-Paix (see Figure 1). The technique employed was to find fishermen in the major fishing ports in the study area and to ask a predetermined series of questions of each individual. These questions were:

- 1) do you know the "lamatin" (manatee);
- 2) do you know the "vache de mer" (nurse shark);
- 3) do you know another animal like either of these two creatures;
- 4) do you recognize the animals in these photographs (photo of a Hawaiian monk seal and a California Sea lion);
- 5) do you recognize either of these two creatures (photo of the head and front flipper of a Hawaiian monk seal on land and of a Hawaiian monk seal under water);
- 6) do you recognize any of these creatures (photo of a female California sea lion on the beach with pups).

All interviews were conducted in Haitian Creole as the second observer filled in the results on a form and made notes of any special reactions. Following the formal phase of each interview general questions were asked to extract as much information from

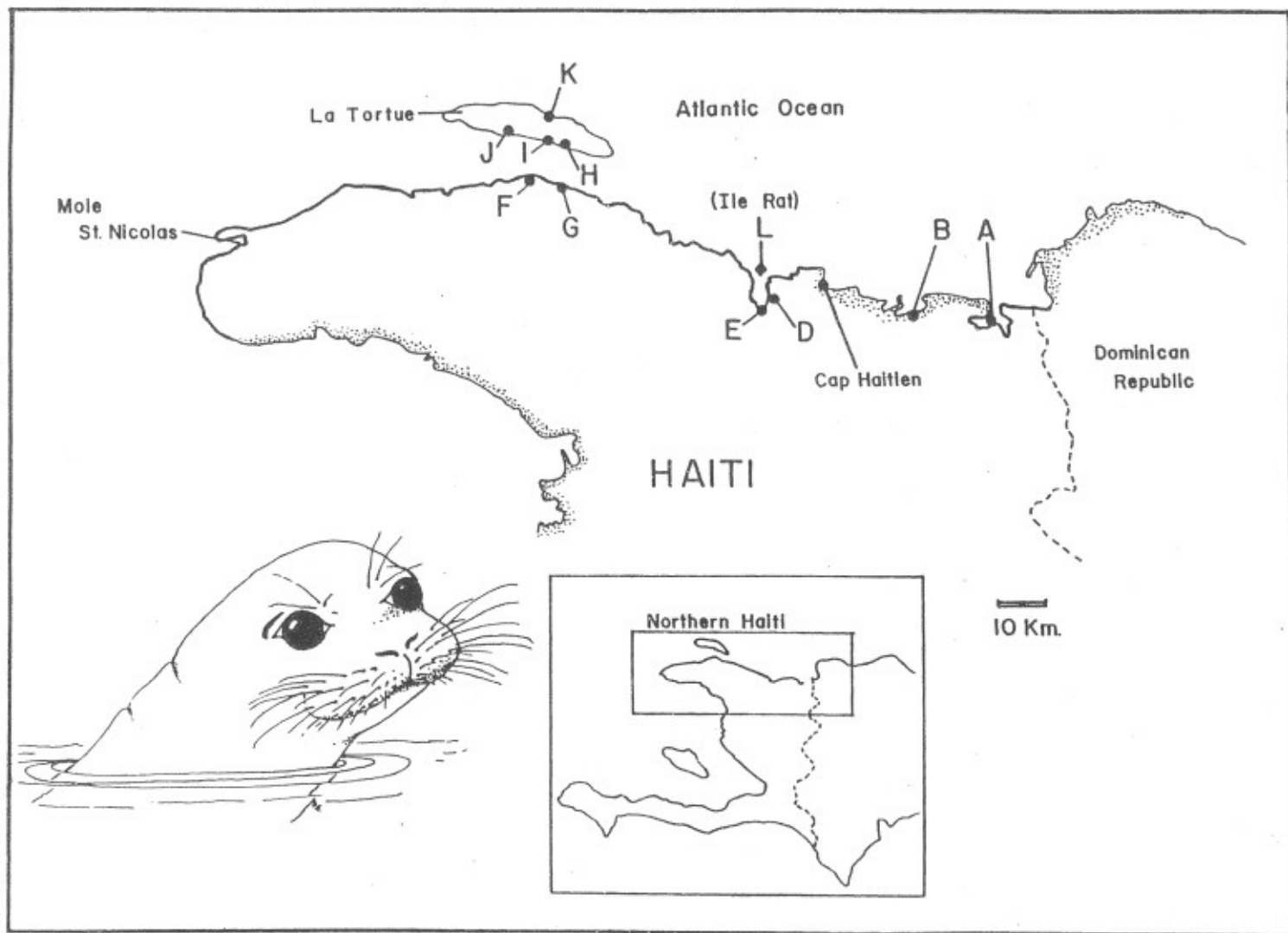


Figure 1. The location of Haitien cities and villages mentioned in the text at which interviews were conducted. (A = Fort Liberte; B = Caracol; C = Cap Haitien; D = Cagnette; E = Paite; F = Port-de-Paix; G = Saint Louis du Nord; H = Port Vicent; I = Pointe aux Oiseaux; J = La Vallee; K = Rochelle)

the individual as possible, and to establish how experienced and qualified he or she was.

A special effort was made to visit a local center of fishing at each of the locations where interviews were conducted. These locations were identified by consultation with Dr. William Hodges, a medical missionary in charge of the Hopital le Bon Semaritain in Limbe near the Baie de l'Acul. Dr. Hodges has lived in this section of northern Haiti for over three decades and he is a close observer of Haitian history. In the course of his medical practice he interviews people from a wide region surrounding Limbe. The following locations (see Figure 1) were selected as the most probable centers where it would be worthwhile to interview fishermen.

- A) Fort Liberte, a small but strategic (and historically important) city on the west shore of the large Baie de Fort Liberte.
- B) Caracol, a small isolated city at the end of a long muddy road that is an important local fishing center because it offers excellent shelter for small fishing boats in tidal creeks.
- C) Cap Haitien, the second largest city in Haiti with a large natural port and a large regional market.
- D) Cagnette, a small site where boats are beached in the Baie de l'Acul.
- E) Piate, a settlement at the end of a well maintained road where local fishermen congregate.
- F) Port-de-Paix, the major city of northwest Haiti at the mouth of Riviere les Trois Rivieres and the port from which many large boats travel in route to Ile Tortue, the Bahamas, and Florida.
- G) Saint Louis du Nord, a major local town along the unpaved road east of Port-de-Paix and a significant port from which many boats journey forth to Ile de Tortue.
- H) Port Vicent, (usually called Cayenne locally), a small but major local port on the Ile de la Tortue where boats from Saint Louis du Nord land and elsewhere seek safe anchorage.
- I) Pointe aux Oiseaux, a small town on the south coast of Ile de la Tortue where many boats are constructed and where boats frequently anchor.
- J) La Vallee, the largest town on Ile de la Tortue and the center of fishing and commerce for the western region of

the island; also a major departure and arrival site for boats from the Bahamas and Florida.

- K) Rochelle, a tiny "bay" at the mouth of the Ravine Rochelle on the north coast of Ile de Tortue where rafts made of lashed together bamboo are pulled ashore on top of the cliffs formed by the raised terrace of an ancient coral reef. Because the shoreline along the north coast of Ile de Tortue is precipitous and the rough sea breaking against the cliffs makes fishing dangerous, this is one of the few north coast fishing locations.

RESULTS

The interviews conducted during the course of this survey are summarized in Table 1. The original report of a possible West Indian monk seal was obtained from Mr. Jean Claude Dicquemare who is a French national serving as the manager of Cormier Plage resort on the north coast of Haiti a short distance west of the city of Cap Haitien. Mr. Dicquemare reported seeing marine mammals at the mouth of the Baie de l'Acul (L on Figure 1). He frequently takes guests from the resort to the area of Ile Rat, a small islet 2.5 kilometers off the narrow entrance to the Bay, to scuba dive. The area is filled with shallow coral reefs. He reported in an interview that he sees manatees about once a year in the area of Ile Rat. He seemed a close and accurate observer of marine life, indicating that manatees are usually observed singly, but occasionally in pairs, and that almost all observations occur in March and April. Fishermen found a dead manatee on Ile Rat in 1981 according to Mr. Dicquemare. At about the same time he observed another kind of marine mammal near Ile Rat which he referred to as a "phoque" or seal. He described the animal as being 1.5 meters in length with a dark back and a grey belly. It floated on the surface of the water, and looked like a dog or cat with big eyes and a long moustache. He saw the animal only once. The careful interview with Mr. Dicquemare suggested that his report is reliable, that he is able to distinguish a manatee from a seal, and that he saw a seal or sea lion at the mouth of the Baie de l'Acul in 1981.

Interviews were conducted with seven fishermen at Fort Liberte (A on Figure 1). All appeared to be experienced fishermen and reliable observers of marine life. Each fisherman reported encounters with manatees and nurse sharks, but none reported sightings of seals. The interviews indicated that none of the fishermen had ever seen or heard of a marine animal that resembled a seal. They all expressed great concern about the poor fishing in the Bay as well as offshore areas, which they blamed on overfishing by non-residents (of Fort Liberte) who congregated in the Bay area because fishing in other nearby areas was even worse. The mayor of the city stopped us as we were leaving the area and pleaded with us to tell "Damien" (the Ministre de l'Agriculture

Table 1. Summary Results of Reported Sightings of Manatees, Nurse Sharks, and Seals Based on Interviews with Fishermen, Seamen, and Other Coastal Residents of the North Coast of Haiti in November 1985.

LOCATION	MAP SYMBOL ON FIG. 1	NO. OF PEOPLE INTERVIEWED	No. of People Reporting Sightings			COMMENTS
			MANATEE	VACHE (NURSE SHARK)	SEALS	
Fort Liberte	A	7	7	7	0	Local Area
Caracol	B	13	13	13	0	Local Area
Cap Haitien	C	3	0	0	0	Urban Area
Cagnette	D	3	2	2	0	Local Area
Piate	E	3	3	0	0	Local Area
Port-de-Paix	F	4	2	2	0	International
Saint Louis	G	10	3	3	0	Urban/Local
Port Vicent	H	14	7	7	0	Regional
Pt. Oiseaux	I	12	8	11	0	Regional
La Vallee	J	7	5	7	1*	International
Rochelle	K	0	0	0	0	Local Area
Ile Rat	L	1	1	1	1+	Local Area
Totals	-	77	51	53	2	-

* The Report of a seal from La Vallee is from an elderly fisherman who spends time in Bahamian waters and who knew about the seal. He described seeing one from a memory span that may go back several decades.

+ The one seal reported from Ile Rat is a reliable observation from a Frenchmen living in the area.

des Ressources Naturelles et du Developpement Rural) to regulate the number of fishermen in the area and put a limit on the size of the catch to keep too many or too small fish from being taken. He had lived in the city all of his life, and he had never heard of a seal.

At Caracol (B on Figure 1), interviews were conducted with thirteen fishermen who were mending nets and fish traps beside their small boats. Clearly these were local fishermen who did not venture far out to sea in their rowboat-sized sailboats. The area looked very depressed, and fishing appeared to be the main occupation of the residents. All of the fishermen knew of the manatee and nurse shark, but none had heard of or seen any animal resembling a seal. The fishermen in this isolated city seemed to be much less aware of matters of concern beyond their day-by-day activities. They reported that fishing was poor, but they did not know why.

The situation in Cap Haitien (C on Figure 1) was difficult to evaluate because the city is so large, and there is no local center for boats or for fishermen. The fishermen live at diverse locations throughout the city. Interviews were conducted with several women who were cleaning fish, and people near the area where some fishing boats dock. All of the boats were greater than six meters in length suggesting that they fished some distance from the city. No one interviewed knew anything about a seal although a few people knew about manatees. There were large fish for sale in the market, and nobody reported a shortage of fish or that fishing was poor. The results of the interviews suggested that the people contacted were not close enough to the actual fishermen. The size of the fishing fleet and group of fishermen in Cap Haitien was smaller than expected.

Only three fishermen were interviewed in Cagnette on the Baie de l'Acul (D on Figure 1). These fishermen used rowboat-sized fishing boats pulled up on the beach, and seemed to be concentrating their efforts to the Bay itself. Two of the individuals knew of manatees and nurse sharks; none of the individuals knew of any seals.

At Piate, which is located at the base of the Baie de l'Acul (E on Figure 1), three fishermen were interviewed, all of whom knew of both the manatee and nurse shark. All three fishermen appeared to be reliable, experienced individuals who fished beyond the bay itself. Their boats were larger than the small boats at Cagnette. None of these individuals had ever heard of an animal like a seal.

At Port-de-Paix (F on Figure 1), an effort was made to locate fishermen in the local fishing market at the main dock of the city. Neither fishermen nor the local market was found, however, interviews were conducted with the captain and crew of a transport boat that went back and forth between Miami, the Turks and Caicos Islands, and the Bahamas. None of these individuals

knew of the seal, although two of them knew of the manatee. They reported that fishing in the region was very poor, and that few fish were caught. Few fishermen bother to fish any longer. Several individuals indicated that the waters were fished out by foreign fishermen. One man blamed the Japanese. Although the entire market section of the city was searched, there was no evidence of fish for sale.

At Saint Louis du Nord (G on Figure 1) interviews were conducted with fishermen and sailors on the beach, as well as passengers and crew members on the boat we took from the city to the town of Cayenne on Ile de la Tortue. As with the individuals interviewed in Cap Haitien, many of the people on the boat did not recognize the manatee and they appeared to be too urban to be reliable as observers of marine life. Few of these individuals recognized any of the marine creatures. Of the fishermen on the beach, none recognized the seal. The interview process in this location was complicated by efforts to negotiate for a boat to take the authors to Ile de la Tortue, and so no reliable data are available concerning the status of the manatee and nurse shark in Saint Louis.

At Port Vicent, known locally as Cayenne (H on Figure 1), interviews were conducted with the crew of one boat (four individuals) as well as ten local "boat people". There were about thirty boats of various sizes in the local harbor at the time of the interviews, but none of them appeared to be a fishing boat. Most of the boating activity in this port is transportation of supplies and people to and from the mainland (called "la Gran Te") as well as between various parts of the Ile de la Tortue. None of the fourteen individuals interviewed knew anything of a seal. Only seven of the individuals knew of the manatee and nurse shark.

A trip was taken by a local boat along the south coast of Ile de la Tortue with a stop at the ship building village of Pointe aux Oiseaux (I on Figure 1). In this village, twelve people were interviewed, all of whom were on boats anchored in the harbor. Some of these individuals appeared to be fishermen, and all appeared to be experienced seamen. Of the twelve individuals interviewed, eleven knew of the nurse shark but only eight knew of the manatee. None knew of the seal. The captain of one of the boats knew of the sea lion, which he said he had seen on visits to Miami. Most of the seamen interviewed had traveled to the Bahamas.

The major town of southwestern Ile de Tortue is La Vallee (J on Figure 1). Seven individuals were interviewed in this town which was inhabited by fishermen and boat people. All seven knew of the nurse shark, and five knew of the manatee. Two of the individuals interviewed knew of three manatees that showed up at Mole St. Nicolas on the mainland of Haiti three years ago (confirmed in Rathbun, Woods and Ottenwalder, 1985). Another individual knew of the sea lion, which she said she saw in Nassau

two and a half years ago (but she became suspicious and would not confirm exactly where). The most reliable man interviewed knew of all of the above mentioned animals and he also described whales. He was quite sure he had seen a seal (not a sea lion), in the Bahamas. He was an old man (about seventy) and he was drawing from his memory. Although it is difficult to reliably conclude that he knew of the monk seal, there is a good chance that at sometime during the past forty years he did see a seal in the region just north of Ile de la Tortue. He described the animal accurately from memory.

The last place at which interviews were conducted was at a site on the north coast of Ile de la Tortue where fishermen pull their bamboo rafts ashore and depart to fish in the heavy seas north of the island. The dominant method of fishing there is via fish traps, which could be seen scattered about the landing of the boats at the base of the Ravine Rochelle. The population on this windswept, remote north coast is very sparse, and in spite of several attempts, no fishermen could be found in the area. Interviews with peasants living in the area, some of whom seemed somewhat knowledgeable about the local fauna in the region, failed to turn up anybody who knew of the seal. Because none of those interviewed knew of the manatee, the quality of this information may not be high. The sea off the north coast of Haiti is very rough. The surf is driven by a near constant northeast trade wind and the water is deep. There are few possible places there for seals to come ashore, and the area is unsuitable for manatees. These cliffs have sea caves and occasional patches of beach where monk seals could haul out, so it is possible for seals to occur here, as they do in similar habitats in the Mediterranean.

DISCUSSION

The above information, as summarized in Table 1, indicates that it is likely that at least one West Indian monk seal or other species of seal occurred in Haitian waters within the past four years. However, based on our interviews with 77 fishermen, seamen and coastal residents in the region it is apparent that, at best, seals are very rare. It is highly unlikely that a breeding population could remain along the north coast of Haiti. The interviews indicate that the manatee is well known, and based on recent survey data (Rathbun, Woods, and Ottenwalder, 1985), it can be concluded that the manatee is now rare in Haitian waters. A comparison of interview results concerning manatees and seals suggests that the lack of reports of seals in the region we analyzed is significant, and that seals have not occurred in the region in numbers for many years. Only one sighting of a seal at the mouth of the Baie de l'Acul in 1981 can be confirmed reliably. In addition, almost all of the individuals interviewed who knew of the manatee also knew that it was good to eat, indicating that they had or would like to have eaten one. It would be dangerous for a monk seal to venture into these waters given the

predisposition of fishermen to kill an animal of this size and shape thinking that it might be good to eat. In spite of the f manatees that are left in northern Haiti, the strong impression that the animal is a prized food item was surprising.

CONCLUSIONS

We conclude that a seal was present at the mouth of the Baie de l'Acul in 1981 in the region of Ile Rat. Based on the study results, however, it is not possible to determine if the seal was a West Indian monk seal or some other species of seal or sea lion. The area is well sheltered from the usually rough seas present along the north coast of Haiti, and the area is apparently part of the natural range of the monk seal. The supposition that monk seals once occurred in the region of Hispaniola is supported by the account of Christopher Columbus who, in 1492 on his second voyage, reported that his sailors killed eight "sea wolves" on the islet of Alta Vela off the southwest coast of the Dominican Republic (Rice, 1973). The conclusion by Rice (1973) that the last breeding colony of the monk seal was a record of a small colony on the Serranilla bank off the Yucatan Peninsula of Mexico may be questioned in view of a number of post 1952 reports of seals from elsewhere in the Caribbean and Gulf of Mexico (Thornback and Jenkins, 1982), and most particularly the report by Luis Varona (1976, In litt.) that at least two seals were sighted by fishermen in international waters near Cay Verde and Cay Burro in the southern Bahamas (22N, 75W) in 1974 (Anon., 1977). This area is 300 kilometers northwest of Haiti and 50 kilometers east of Ragged Island on the edge of the Great Bahamian Bank.

Based on the data compiled and synthesized from northwestern Hispaniola during this study, we conclude that no breeding populations of seals are present in the region between Mole St. Nicolas at the northwestern tip of Haiti, and the frontier with the Dominican Republic. If the reported seal at the mouth of the Baie de l'Acul which appears to be reliable was actually a West Indian monk seal, it appears likely that any breeding population of which it may have been a part would exist to the east or west of the region surveyed. The most likely area is the southern Bahamas between Ragged Island, Mayaguana Island and Great Inagua Island, an area also recommended for investigation by Nichols, et al. 1980. Although other researchers have expressed opinions to the contrary (see for example LeBoeuf, et al., 1986), I believe that it is premature and unwise to declare the West Indian monk seal extinct as of this date. Until more information is known about the species involved in recent seal sightings, such as the one reported above, a remote possibility continues to exist that the Caribbean monk seal is not extinct.

ACKNOWLEDGEMENTS

We thank Paul Paryski of the Institut National Haitien de la Culture et des Arts (INAHCA) for his constant support and valuable assistance. We also thank Florence Sergile for the Direction des Ressources Naturelles of the Ministers de l'Agriculture des Ressources Naturelles et du Developpement Rural (MARNDR). We would also like to thank the Director of INAHCA, Gaston Hermantin, as well as the Director of DRN, Raoul Pierre-Louis. We especially appreciate the assistance of David Laist of the Marine Mammal Commission who made photographs and literature on the monk seal available to us that were invaluable to the survey.

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