

## CARIBBEAN MONK SEAL EXTINCT

The first large mammal discovered by Columbus on his second voyage to the New World in 1494 was a seal (Kerr, 1811). Not until 1850, however, was the Caribbean or West Indian monk seal, *Monachus tropicalis*, described and named by Gray and by 1887 it had become so scarce that J. A. Allen mentioned it as an "almost mythical species." Gilmore (1959) could find no seals or reports of them on a survey in 1951. V. B. Scheffer (personal communication) spent several months on Grand Cayman Island in 1970–1971. He questioned fishermen and turtle hunters about seals but could find no one who knew of seals in living memory. Rice (1973) reviewed published and unpublished information pertaining to this seal. Beginning in 1956 he corresponded with biologists who had worked within the former range of the species and concluded that: "Although the Caribbean monk seal may already be extinct, this is by no means certain." His studies delineated certain remote islands and atolls in the Gulf of Mexico and Caribbean where the seal might still exist.

At a meeting of the Seal Group of the Survival Service Commission (Rice, 1973), it was decided that an aerial survey of all areas mentioned by Rice should be undertaken. In preparation for this survey I carried on further correspondence with biologists familiar with the Gulf of Mexico and the Caribbean. None of them was optimistic that the monk seal was extant, although some suggested areas where there was hope of finding it. The last authentic record was an observation by C. B. Lewis (Rice, 1973) in 1952 of a small colony on Seranilla Bank. Lewis (1948) presented previous

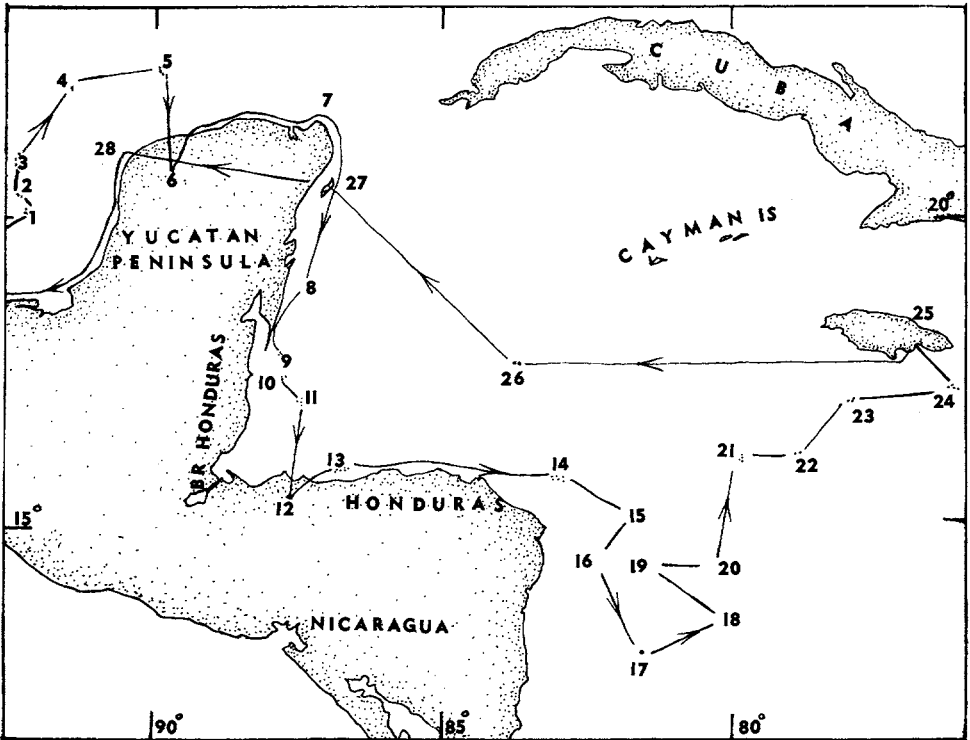


FIG. 1.—Track of aerial survey of the known former range of the Caribbean monk seal. Key: 1) Arcas Cays; 2) Obispo Norte and Obispo Sur; 3) Triángulos Este, Sur, and Oeste; 4) Cayo Arenas; 5) Arrecife Alacrán; 6) Merida, Yucatan, Mexico; 7) Cabo Catoche, Blanca Island, Isla Mujeres, Cancun Island, and Cozumel Island; 8) Banco Chinchorro; 9) Ambergris Cay; 10) Mauger Cay, Crawl Cay, and Three Corner Cay; 11) Lighthouse Reef; 12) San Pedro Sula, Honduras; 13) Cayos Cochinos; 14) Cayos Caratasca, Vivorillo, Becerro, and Pichones; 15) Arrecife de la Media Luna and Alagardo; 16) Morrison Dennis Cays, Cayos Miskitos, and Nasa Cays; 17) San Andres Island, Colombia; 18) Roncador Cay; 19) Quita Sueño Bank; 20) Serrana Bank; 21) Seranilla Bank; 22) Bajo Nuevo; 23) Pedro Bank; 24) Morant Cays; 25) Kingston, Jamaica; 26) Swan Island; 27) San Miguel, Cozumel Island, Mexico; 28) Mangrove Swamps of Yucatan and Campeche, Mexico.

notes on this species. Other reports of seals have included escaped California sea lions, *Zalophus californianus*, and none can "be accepted as evidence of the occurrence of *Monachus*" (Rice, 1973).

From 19 to 25 March 1973, the islands and atolls off Campeche, Yucatan, Quintana Roo (Mexico), British Honduras, Honduras, Nicaragua, and the central Caribbean to Jamaica were surveyed using a specially designed and modified long-range Grumman "Super Goose" amphibian aircraft (Fig. 1). Flight speed varied from 130 to 150 knots (240 to 280 kilometers (km)/hour) and altitude from 150 to 200 feet (45 to 60 meters, m). All areas recommended by Rice (1973) and by our correspondents were carefully examined, and approximately 3960 statute miles (6377 km) were covered in the survey.

At every island group visited, either fishing vessels or shrimp trawlers at anchor, or fishermen and their shacks on shore, or the remains of abandoned fishermen's camps were observed. However, there was no indication of the existence of monk seals. At Seranilla Bank, where this seal was last authentically reported and the hope of finding seals was greatest, three fishing boats (about 18 m long) were observed at anchor with a total of 13 canoes tied to their sterns. On shore at Beacon Cay the remains of a fisherman's camp was found. Beacon Cay is the largest island on Seranilla Bank and offers the most suitable beaches for monk seals.

The remotest habitats of the Caribbean monk seal have now been invaded by fishermen. Ronald and Healey (1974) report that a similar situation exists in the habitat of the Mediterranean monk seal (*Monachus monachus*). Fishermen are prone to kill seals as competitors. Because the monk seals evolved in island environments where there were no natural enemies on shore, they became genetically tame and were thus easy victims.

My conclusion from the 1973 survey is that the Caribbean monk seal has been extinct since the early 1950's. The fact that I saw no monk seals was not as important as the fact of ubiquitous human presence. It is well documented that the nearest relative of the Caribbean monk seal, the Hawaiian monk seal (*Monachus schauinslandi*), is uniquely sensitive to human disturbance during the nursing period (Rice, 1960; Wirtz, 1968; Kenyon, 1972). Even if a few old Caribbean monk seals had survived to the 1970's, all available evidence leads me to believe that there is no hope that the species can recover. Man has now dominated its environment.

Financial support for the aerial surveys was provided by the Office of Rare and Endangered Species and the Division of Wildlife Research of the U. S. Fish and Wildlife Service (FWS). A more comprehensive report on the March 1973 aerial survey was prepared and is in the files of the FWS in Washington, D.C., and Anchorage, Alaska.

#### LITERATURE CITED

- ALLEN, J. A. 1887. The West Indian seal (*Monachus tropicalis* Gray). Bull. Amer. Mus. Nat. Hist., 2:1-34.
- GILMORE, R. M. 1959. Is the West Indian monk seal extinct? Sea Frontiers, 5:225-236.
- GRAY, J. E. 1850. Catalogue of the specimens of Mammalia in the collection of the British Museum. Pts. 2, Seals. British Mus. (Nat. Hist.), London, 48 pp.
- KENYON, K. W. 1972. Man versus the monk seal. J. Mamm., 53:606-615.
- KERR, R. 1811. A general history and collection of voyages and travels. . . . Vol. 3. Edinburgh, 503 pp.
- LEWIS, C. B. 1948. The West Indian seal. Nat. Hist. Notes, Nat. Hist. Soc., Jamaica, 43:169-172.
- RICE, D. W. 1960. Population dynamics of the Hawaiian monk seal. J. Mamm., 41:376-385.
- . 1973. Caribbean monk seal (*Monachus tropicalis*). Pp. 98-112, in Seals, Proceedings of a working meeting of seal specialists on threatened and depleted seals of the world, held under the auspices of the Survival Service Commission of the IUCN, 18-19 August 1972 at the Univ. Guelph, Ontario, Canada, IUCN publ. New Series, Supp. Paper, Morges, Switzerland, 39:1-176.
- RONALD, K., AND P. HEALEY. 1974. Present status of the Mediterranean monk seal (*Monachus monachus*). Univ. Guelph, Ontario, Canada, Migration Series, 100:1-36.
- WIRTZ, W. O., II. 1968. Reproduction, growth and development and juvenile mortality in the Hawaiian monk seal. J. Mamm., 49:229-238.