



Observations of Hawaiian Monk Seals on Necker Island, Northwestern Hawaiian Islands

by Sheila Conant

The Hawaiian Monk Seal (*Monachus schauinslandi*) is an endangered species, endemic to the Hawaiian archipelago and limited in its breeding distribution to the Northwestern Hawaiian Islands (Kenyon and Rice 1959). Studies of the species in recent decades have reported major breeding populations or colonies on the six outermost islands: Kure, Midway, Pearl and Hermes Reef, Lisianski, Laysan, and French Frigate Shoals, and a small number of records of pups from Nihoa Island (Kenyon and Rice 1959, Kenyon 1972, Clapp, Kridler and Fleet 1977, Gilmartin 1983, Conant unpubl. data). Pups had not been reported from Necker Island until 1978 (DeLong 1978), although Clapp and Kridler (1977: 80) speculated "that the seal might breed there." This paper documents recent records of Hawaiian Monk Seals pupping on Necker Island.

In June of 1982 I spent 20 to 25 June on Necker Island sampling vegetation and censusing seabirds. I was accompanied by Patrick Conant who collected terrestrial arthropods. Our objectives on the trip were to conduct studies of terrestrial plants and animals and to make incidental observations of monk seals and Green Sea Turtles (*Chelonia mydas*).

Numbers and Locations of Seals

Although we did not conduct systematic seal censuses, I took notes on the numbers and locations of seals hauled out on the island's rocky beaches. Figure 1 shows place names and indicates the locations at which I recorded seals. Table 1 shows the largest number of seals recorded at each of the locations monitored, on each of 4 different days. Because I was a relatively inexperienced observer, I did not distinguish between adults, subadults and juveniles on most counts. However, I did keep counts of nursing pups separate from adults.

Clearly, site 3 accommodated the largest numbers of seals, including females with pups. The largest number of animals recorded at site 3 was 20, and the largest number of animals observed at all sites combined was 32. Site 3 is an extensive basalt ledge about 10 m by 25 m, which received relatively little wave action beyond its shoreward edge during our visit. This site had the greatest density and numbers of animals even though other haulout sites (e.g., sites 1, 2, 4) appeared suitable for higher densities of animals than I observed in those areas. Site 3 always had some animals present. In contrast, the other sites sometimes had no animals present, except site 5, where there was always a mother and pup. Like site 3, sites 1 and 5 are also rocky benches with at least some area out of reach of major wave action all the time. Sites 2 and 4 are "beaches" of large, loose rocks. Site 2 had a small area above major wave action all the time we were present and site 4 was generally awash at high tide or during high wind or swell

Table 1. Monk Seal Observations on Necker Island, June 1983. (P = nursing pup, I = immature, A = adult.)

Date	Site Number					Total
	1	2	3	4	5	
20 June 1983	1 I	1 A/1	14 A+I	—	—	16
21 June 1983	—	4 A+I	17 A+I 3 P	—	7 A 1 P	32
22 June 1983	—	3 A+I	8 A 3 P	—	7 A 1 P	22
23 June 1983	—	2 A	7 A 3 P	2 A 1 I	2 A 1 P	18

conditions. Morrow and Buelna (1985) identified 43 individual seals during a two-week survey in 1983, and they also found the largest numbers of seals and pups at site 3.

Pup Numbers and Locations

When we went ashore at 1100 hrs. on 20 June 1982, we found two females with small, black-coated, nursing pups at site 3. At that time I also noted a female animal with a large fresh wound on her back at this site. The following day we saw the wounded animal again at 1700 hrs., this time nursing a newborn pup (Figure 2). On 21 June I observed a fourth pup with its mother at site 5. This pup was much larger than the pups at site 3, and appeared to be close to weaning. Its coat was the silver color of a weaned or close-to-weaning pup, rather than the glossy black of younger pups.

In 1983 Morrow and Buelna (1985) observed two nursing pups at site 3 and one weaned pup at site 5, and reported a sighting of one dead black pup on 20 April 1983. Estimated dates of birth for the nursing pups observed by Morrow and Buelna were 4 and 9 July. They also found a dead, pregnant female at site 5 on 28 July



Figure 1. Map of Necker Island (After Judd in Palmer 1927), showing locations at which monk seals were sighted and censused.

1983. In late June of 1984 Morrow and I spent from 20 to 28 June at Necker. At that time there was one female with a young, black pup at site 3. Another pup was born at site 3 on 2 July 1984 (S. Fefer pers. comm.).

Conclusion

Although Hawaiian Monk Seals have been regularly observed at Necker Island (Gilmartin 1983), pups were reported only once before our 1982 visit. Whereas Necker Island had previously been reported primarily as a haulout site for small numbers of non-breeding seals, records of four pups in 1982, five pups in 1983 (including one dead pup and one dead fetus), and two pups in 1984, as well as increased numbers of seals recorded in censuses by National Marine Fisheries Service researchers, now clearly indicate that this small, high island is a more important seal habitat than formerly believed. It is probable that the limiting factors for the seal population at Necker are haulout space and pupping areas.



Figure 2. Monk seal mother and pup. Note large, fresh wound on the adult's back.

ACKNOWLEDGEMENTS

I particularly thank William G. Gilmartin of National Marine Fisheries Service for encouraging me to record and publish these observations, and for sharing information collected during research conducted under his direction. Patrick Conant assisted with observations and logistics. I thank the crews of the *Feresia* and the NOAA Ship *Townsend Cromwell* for their assistance with logistics and field support. Observations were made during a study conducted under contract with the U.S. Fish and Wildlife Service, which also provided research support.

LITERATURE CITED

- Clapp, R.B. and E. Kridler. 1977. The natural history of Necker Island, Northwestern Hawaiian Islands. Atoll Res. Bull. No. 206.
- Clapp, R.B., E. Kridler and R.R. Fleet. 1977. The natural history of Nihoa Island, Northwestern Hawaiian Islands. Atoll Res. Bull. No. 207.
- DeLong, R.L. 1978. Investigation of Hawaiian Monk Seal mortality at Laysan, Lisianski, French Frigate Shoals and Necker Island, May 1978. Interim Rept., Marine Mammal Division, Northwest and Alaska Fisheries Center, Natl. Marine Fish. Serv., Seattle.

- Gilmartin, W.G. 1983. Recovery plan for the Hawaiian Monk Seal, *Monachus schauinslandi*. National Marine Fisheries Service, Southwest Region. Terminal Island, California.
- Kenyon, K.W. 1972. Man versus the monk seal. *J. Mammal.* 53: 687-696.
- Kenyon, K.W. and D.W. Rice. 1959. Life history of the Hawaiian Monk Seal. *Pacific Sci.* 13: 215-252.
- Morrow, R.J. and E.K. Buelna. 1985. The Hawaiian Monk Seal and Green Sea Turtle on Necker Island, 1983. Draft NOAA Technical Memorandum, Southwest Fisheries Center, Honolulu Laboratory, National Marine Fisheries Service, Hawaii.
- Palmer, H.S. 1927. Geology of Kaula, Nihoa, Necker and Gardner Islands and French Frigate Shoals. B.P. Bishop Mus., Bull. 35.

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FUNDING APPROVED FOR UPPER HAKALAU FOREST

The House Appropriations Committee rejected the Administration's proposal for a three year moratorium for land acquisition and included \$6.0 million for the Upper Hakalau Forest Preserve.

In approving this funding, the Committee has balanced land acquisition needs with fiscal restraint. The proposed three year moratorium in acquisition would likely result in the loss of critical habitats which would further endanger threatened species and slow down the momentum that has been established.

Having testified in April on the need for the acquisition of the Upper Hakalau Forest, Congressman Daniel Akaka was pleased with the Committee's action. Said Akaka, "The Upper Hakalau Forest, on the slopes of Mauna Kea, is one of the most richly diverse and unique tropical forests in the world" At least five of Hawaii Island's seven federally-listed endangered forest bird species and the endangered Hawaiian Hoary Bat, Hawaii's only terrestrial mammal, are found in this forest. According to the U.S. Fish and wildlife Service Recovery Plan, the area is considered to be essential habitat for four of the endangered forest birds of Hawaii.

Last year, Congress appropriated \$4.41 million, which allowed for the first phase of land acquisition for this project.

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CALENDAR OF EVENTS

- Aug. 11 (Sun.)Field trip to Makiki Environmental Education Center on Makiki Heights Dr., Honolulu. See page 16. Ray Tabata, trip leader (988-2958).
- Aug. 12 (Mon.)7:00 pm HAS Board meeting at the home of Dr. Conant, 3663 Alani Dr., Oahu. Call Dr. Conant for information.
- Aug. 17 (Sat.)Paste-up of the 'Elepaio beginning at noon. Call 533-7530 for information.
- Aug. 19 (Mon.) 7:30 pm general meeting at McCully-Moiliili Library, 2211 S. King St. with Dr. Fern Duvall on "The Endangered Alala."
- Sept. 8 (Sun.)"Behind-the-Scenes" trip to Sea Life Park. See page 16.

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