



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/I	14 A+I	—	—	16
21 June 1983	—	4 A+I	17 A+I	—	7 A	32
			3 P	—	1 P	
22 June 1983	—	3 A+I	8 A	—	7 A	22
			3 P		1 P	
23 June 1983	—	2 A	7 A	2 A	2 A	18
			3 P	1 I	1 P	

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

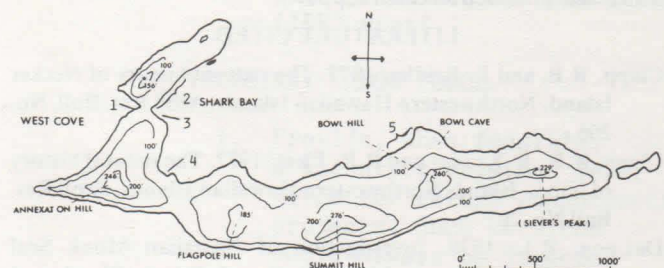


Figure 1. Map of Necker Island (After Judd in Palmer 1927), showing locations at which monk seals were sighted and censused.

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.

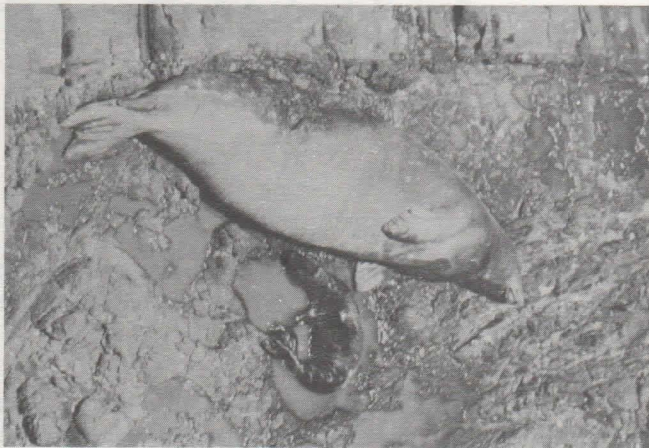


Figure 2. Monk seal mother and pup. Note large, fresh wound on the adult's back.

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 *Feresa* 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.

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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.

Excerpted from News Release

UPDATE

"ADOPT-A-REFUGE"

The following agreement was signed by Hawaii Audubon Society and the U.S. Fish and Wildlife Service in April of this year:

PROPOSAL: It is hereby proposed that the Hawai'i Chapter of the National Audubon Society formally adopt the James Campbell National Wildlife Refuge located at Kahuku, O'ahu - and offer to the refuge the following services:

A. EDUCATIONAL ADVISEMENT

1. Provide leaders for public tours of the refuge. These tours would be held either monthly or bimonthly as deemed appropriate by the refuge management. Commencement of this service would be possible as soon as this adoption proposal becomes formally agreed to by all parties.
2. Refuge staff will provide instructions and training for the leaders on the topics to be stressed during the "tours". Such topics might include but are not limited to:
 - a. Purpose and goals of National Wildlife Refuges in general and JCNWR in particular.
 - b. The role of the Estate of James Campbell in the historical perspective of the property. (Kahuku Sugar Plantation settling ponds).
 - c. Specific programs designed to manage endangered species located on the refuge and limited discussion regarding the causes behind the endangerment of Hawai'i water-

birds.

- d. Importance of the refuge to migratory waterfowl and shore-birds.
- e. Interaction of introduced and native wildlife at the refuge and the potential problems this area presents for management.
- f. Future goals and programs of the refuge and ways the general public may help.

3. Work with the refuge staff to develop and construct educational signs to be installed at the refuge. Such signs would depict the birds that one would commonly see on the refuge and something about their natural history. All such signs would conform to FWS national and regional public use requirements.
4. Work with the refuge staff to design and produce brochures, posters or other visual materials to aid in describing the activities of the refuge. Such materials should be made available at each "tour" of the refuge. These materials would conform to FWS national and regional public use requirements and would be reviewed and approved by FWS regional interpretation and education (I&R) staff.

B. VOLUNTARY LABOR FORCE

1. Provide, when feasible, a voluntary physical labor force for refuge enhancement projects. Such services would always be directed by refuge management personnel and would also include adequate safety precautions.

C. PUBLICITY

1. Appropriate media coverage of all activities would be coordinated with refuge staff.

D. DURATION OF ADOPTION AGREEMENT

1. The ADOPT A REFUGE program involving the Hawai'i Audubon Society and the JCNWR would be subject to review on an annual basis. Input from refuge personnel as to the effectiveness of the program and areas of new emphasis would be sought.

Signed by: President Hawaii Audubon Society; Chairman H.A.S. Adopt-A-Refuge Program; Hawaiian/Pacific Islands National Wildlife Refuge Complex Project Leader; and Acting Regional Director, U.S. Fish and Wildlife Service Region One, Portland, Oregon.

(Editors' Note: Any persons interested in participating in any way should contact the Adopt-A-Refuge Chairman Phil Bruner at 293-3820.)

FIELD TRIP LEADERS TRAINING

Sierra Club (Honolulu Group) is conducting an Outing Leaders Training seminar during Admissions Day weekend, August 16, 17, and 18, 1985. It will be a three day weekend camp out at Ho'omaluhia Park in Kaneohe. Hawaii Audubon Society field trip leaders or others who aspire to lead outings are welcome to attend.

The seminar will consist of sessions on various aspects of Hawaii's unique natural history; safety; equipment; outings policies and procedures; planning and conducting hikes, field trips, camp outs, backpacking trips, and outer island trips; and the legal aspects of outings.

The enrollment fee is \$35.00 and covers 7 meals and training materials. Contact Annette Kaohelaui at 247-4113 or Phil Deters at 261-4711 for more information, or call the Sierra Club office and ask to have an Outing Leaders Training Seminar application mailed to you. Leave name, mailing address, and your phone number.

HOUSE COMMITTEE SAYS "NO"
TO MALATHION SPRAY PLAN

At the request of Congressman Daniel K. Akaka, the House Appropriations Subcommittee on Agriculture has directed the Animal and Plant Health Inspection Service (APHIS) not to proceed with the controversial aerial-spray plan to eradicate Hawaii's tri-fly infestation. Instead, the Subcommittee has approved a new research initiative to develop eradication methods that are safer and more effective than those proposed by APHIS.

The Committee accepted Representative Akaka's recommendation to prohibit APHIS from proceeding with its tri-fly eradication proposal. The action was in response to the strong concerns voiced by the public in Hawaii and the scientific community about the environmental effects of an eradication plan that included aerial spraying of pesticides. The fact that the Environmental Protection Agency determined that the Draft Environmental Impact Assessment on the eradication of the tri-fly complex was "inadequate and environmentally unsatisfactory" and that the eradication program proposed by APHIS would violate federal pesticide law also influenced the Committee's decision.

In lieu of proceeding with the APHIS eradication plan, the Committee approved a long-term research program to develop new, environmentally sound methods of fruit fly eradication, control, and suppression. This research will be undertaken by the University of Hawaii. First year funding was set at \$340,000.

Said Akaka, "Like many concerned people in Hawaii, I am opposed to aerial spraying of pesticides as a means of controlling the tri-fly complex. Hawaii's ecology is extremely fragile and the spraying proposed by APHIS would be an environmental nightmare. The Committee's action is a firm stand in support of an environmentally sound approach to the tri-fly problem."

Akaka continued, "I am convinced that the University of Hawaii's research program which the Committee approved is the best way to address this problem. When you consider the scope and complexity of the tri-fly problem, it is clear that research to develop a safe means of controlling fruit flies has not been given the priority it deserves. Before APHIS proceeds with an expensive eradication program which has no guarantee of success, our scientists at the University of Hawaii should be given an opportunity to develop a better and safer method for addressing the tri-fly problem."

News Release

JUNE MEETING REPORT

Hawaii's own Audrey Newman presented the 17 June 1985 program on The Nature Conservancy (TNC), where she is coordinator for the Hawaiian Heritage Program and on the staff of its field office. She is a former Univ. of Hawaii student and presently is finishing a master's degree there. Her position entails identification of endangered species of plants, birds, animals, invertebrates, and ecosystems.

First, Audrey began with a little background and history of TNC, which began on the mainland in the 1950s, but is international in scope. Its one goal is to protect the best remaining and unique areas and ecosystems of the world; 500,000 acres are in Conservancy hands for the protection of rare and endangered plants, mammals, birds, and invertebrates.

The Conservancy in Hawaii began in 1980. There are five preserves on the Islands: one on Kauai, two on Maui, one each on Molokai and the Big Island. Fascinating and informative slides were presented on Kaluahonu on Kauai, Kipahulu Valley and Waikamoi on Maui, Kamakou on Molokai, and Hakalau on the windward slope of Mauna Kea on the Big Island. In addition, there were beautiful slides of the native birds in each preserve: Newell Shearwaters ('A'o in Hawaiian) on Kauai; Crested Honeycreepers, Maui Parrotbills, and the rare and recently discovered Po'ouli on Maui; 219 endemic plants and two scarce birds not yet photographed on Molokai; and the Mauna Kea windward slopes which embrace open lands and dense rain forests on Hawaii. There were lovely slides of Hawaii's native birds like the 'Akiapola'au (one of the endangered species in the Hakalau Preserve), 'I'iwi, Hawaii Creeper, 'Amakihi, Hawaii Audubon's own emblem the 'Elepaio, 'Apapane, the famous colorful tree snails, and "happy faced" spiders.

The question arises as how to protect the areas where rare birds and other animals exist. There are four steps: (1) collect all information, map, and computerize it; (2) go out and actively confirm this data; (3) use data to decide what to protect; and (4) enlist support of private land owners in land use planning. A current TNC project is to map rare plants on native coastal communities, as coastal communities in themselves are rare.

One of the most frequently asked questions is: When will this be completed? The answer: NEVER. The process is ongoing to protect ecosystems and endangered species

forever. Another question is: How can I help? There are several ways, first and foremost being to join the Conservancy for a modest \$10 annual fee, which entitles one to their national magazine and local newsletter. Also, volunteers are always needed and welcome to participate in various activities, most requiring little or no expertise, such as building fences, killing noxious weeds, hunting and eradicating destructive animals, and, finally, to talk to friends about the work of The Conservancy. The Conservancy in Hawaii offers monthly trips (illustrated brochures available on dates, places, activities involved), and combination work-play trips, as well as hikes. One can even organize one's own group for a work-play session.

Last, but not least, comes the matter of funding. The Conservancy in Hawaii is working on an endowment program for their preserves. They have raised \$1 million already, but still need an additional \$4 million. For the acreage protected in Hawaii this amounts to \$70 per acre.

In conclusion, questions were entertained and the back table held an assortment of papers, membership applications, brochures, magazines, and other appropriate material on the work of The Conservancy.

Betty L. Johnson

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AUGUST FIELD TRIP: MAKIKI ENVIRONMENTAL EDUCATION CENTER

The Sunday 11 August field trip will be to the Makiki Environmental Education Center on Oahu. This trip will focus on the natural history and outdoor education aspects of that area. The Center is surrounded by lush forest and easy footpaths. This field trip is recommended for families as well as individuals. The outing should be pau by 12 noon. Trail guide booklets will be available for purchase to any interested individual for a 50¢ donation.

Participants will meet at 8:00 am on Punchbowl St. by the State Library, or at 8:30 am at the Makiki Environmental Education Center, 2131 Makiki Heights Drive. The trip leader is Ray Tabata (988-2958).

AUGUST PROGRAM: THE ENDANGERED 'ALALA

The Monday 19 August general meeting will feature a free talk plus slide show by Dr. Fern Duvall on "The Endangered 'Alala".

Dr. Duvall is the aviculturist who currently is under contract with the State of Hawaii to care for and propagate the nine captive 'Alala at the Endangered Species Facility at Pohakuloa on the Big Island. His talk will focus on the extreme rarity of this species in the wild, which is almost extinct, and on the captive efforts to save this interesting endemic bird from extinction.

The meeting will be held at McCully-Moiliili Library at 2211 S. King St., Honolulu, beginning at 7:30 pm. Everyone is welcome to attend and bring a friend!

PLAN AHEAD: SEPT. FIELD TRIP SEA LIFE PARK

The Sunday 8 September field trip will be "Behind the Scenes" at Sea Life Park, Oahu. Cost for the special tour will be \$1.75 per adult, 50¢ per child ages 4 to 6, and \$1.00 per child ages 7 to 12. The tour will meet at the entrance to Sea Life Park at 9:30 am and will last from 9:45 am to 10:30 am. THIS TRIP IS LIMITED TO 16 PERSONS; RESERVATIONS MUST BE MADE AHEAD OF TIME. Mail a check for the correct amount (made out to "Sea Life Park") before August 23 to: Ray Tabata, 2830 Lowrey Ave, Honolulu, Hawaii 96822. MAKE SURE YOU INCLUDE A PHONE NUMBER WHERE YOU MAY BE REACHED. If you would like more information, call Ray at 988-2958.

PUBLICATIONS OF THE SOCIETY

HAWAII'S BIRDS by the Society (1984). This is the best field guide to our birds, and includes colored illustrations of all native and well-established nonnative species..... \$4.95 plus postage: 85¢ (surface mail) or \$1.03 (air). Hawaii residents only: add 20¢ for tax.

FIELD CHECKLIST OF BIRDS OF HAWAII by R. L. Pyle (1976). A pocket-size field card listing 125 species found in Hawaii with space for notes of field trips. (Postpaid).....\$.25
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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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