

10/2/84

George

Sorry for the confusion. The basking ledge is the site where the turtle was seen. We had two "camp sites." One where we slept was on the west side. This was too precarious for us to keep gear & camp stove, food etc. so we ate and stowed gear on a small over above basking ledge. Did see turtle(s) swimming in west cove but not basking. Cheers!

Stewart

STEWART FEFER

Stewart - Please  
mark & return

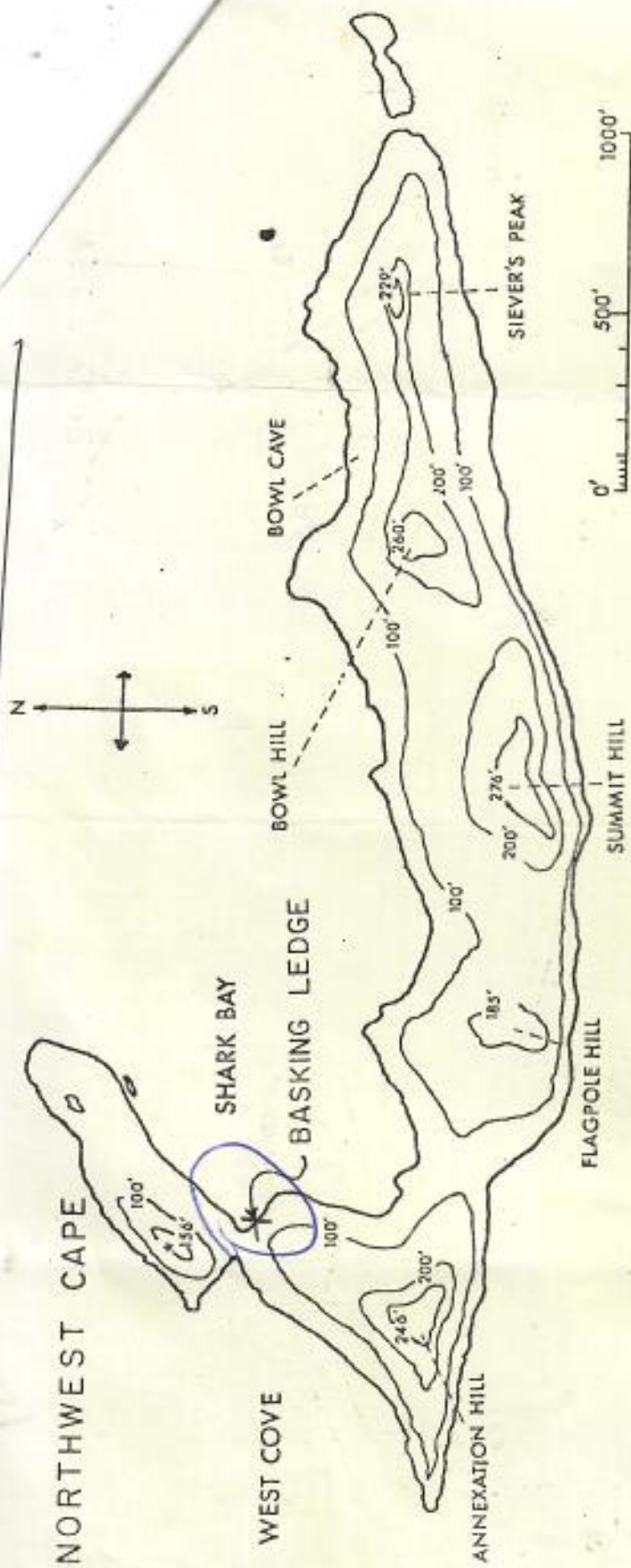


Figure 2. Necker Island ( $23^{\circ}35'N$ ,  $164^{\circ}42'W$ ) has an area of 41 acres and consists of sparsely vegetated volcanic rock. It is located 155 miles from Nihoa and 75 miles from the colonial Hawaiian green turtle breeding site of French Frigate Shoals.

SEP 21 1984

TRIP REPORT - BIOLOGICAL INVESTIGATIONS: NIHOA, NECKER,  
LAYSAN, LISIANSKI, PEARL AND HERMES REEF, MIDWAY  
19 JUNE - 19 JULY, 1984

PERSONNEL: Nihoa and Necker Islands:

*Stewart Fefer*  
Stewart I. Fefer, Sup. Wildl. Biol., FWS, RWR,  
Honolulu  
Robert J. Shallenberger, Complex Refuge Manager,  
FWS, RWR, Honolulu  
Paul Cleghorn, Archeologist, Bishop Museum  
Eric Komori, Assistant Archeologist, Bishop Museum

Laysan, Lisianski and Pearl and Hermes Reef:

Stewart Fefer, see above  
Ralph Saito, Honolulu District Wildlife Biologist,  
Hawaii Department of Land and Natural Resources,  
Division of Forestry and Wildlife  
Maura Naughton, Ecologist, FWS, RWR, Honolulu  
Darcy Hu, Wildlife Biologist, FWS, RWR, Honolulu

Laysan Island:

In addition to above personnel, the following  
persons were on Laysan to conduct biological studies:  
Audrey Newman, Bio. Aide Wildlife, FWS, RWR,  
Honolulu  
Petra Lenz, Univ. of Hawaii, Manoa  
Alan Kam, National Marine Fisheries Service (NMFS)  
Thea Johanos, NMFS

ITINERARY: 19 June - Depart Kewalo via F/V Peresa  
21-27 June - Nihoa  
28 June - 2 July - Necker  
3 - 4 July - Tern I, FFS  
6-10 July - Laysan  
11-14 July - Lisianski  
15 - 17 July - Pearl and Hermes  
18-19 July - Midway  
19 July - return to Honolulu via MAC

millerbirds. Recent (1977-1979) millerbird estimates by Sincock range from 127 to 490. One banded millerbird was observed near camp, 20-50 feet behind camp (sign), with two red bands on left and one red and one silver band on right.

ruddy turnstone: 8 turnstones observed.

lesser golden plover: 4 observed.

bristle-thighed curlew: one observed.

monk seals: At approximately 1815 on 6/22, 12 seals were noted on the beach on the NW side of Nihoa. No pups or weaners were observed. The twelve seals included 4 adults, 6 subadults and 2 juveniles. There was no evidence of bleach marks or tags from the distant observations. On 6/23, 13 seals were noted on the same beach. A juvenile seal was noted having a head scar. No pregnant females were observed.

Other: A water sample was taken from a seep located along the cliff face below camp. This sample was analyzed by AECOS INC. (sample no. 1084-195 8/6/84) for nitrates plus nitrites, and was found to have extremely high concentrations of these substances (258 mg/l). EPA maximum contaminant level for drinking water for nitrates (as N) is 10mg/l.

#### NECKER

We arrived at Necker via F/V FERESA at 1400 on 28 June and offloaded from 1500 to 1600. We set up camp on the west side of the islands on a rock ledge. We conducted a survey of surface nesting birds, counting nests, eggs and chicks for each of the following species: red-footed boobies, masked and brown boobies, great frigatebirds and Laysan and black-footed albatross. We used standard codes for phenology.

black-footed albatross: No adults were observed, and most chicks had fledged by this date. Thirty-five nearly fledged young were seen; most of these had wisps of down remaining on the head and neck. Birds were found on the entire island except the NW cape. However, they were not abundant.

Laysan albatross: Laysan albatross were patchily distributed and clumped in certain areas. They were found on flats and hill slopes. A few adults were in the colony feeding their young during the day; none were seen that were not attending young. Considerable chick mortality was evident. We banded 151 local birds on 1 July. Many birds had probably fledged by this time. Habitat is not limiting on Necker Island for this species.

Bulwers petrel: Population is much smaller than that on Nihoa, although there are abundant nests in rock pile habitat types. Perhaps competition with wedge-tailed shearwaters for nest sites occurs on Necker. Several hundred (250-500) nests of this species were present.

wedge-tailed shearwater: Very common breeder. All nests observed contained eggs. Many birds nested in atypical habitat including rock ledges, depressions and some exposed areas, and were very skittish because of this exposure. Many nested on the surface under Chenopodium or Sesbania bushes which often had booby or frigatebird nests in them. A very crude estimate (guesstimate) of the wedge-tailed shearwater nesting population is 5000 pairs.

Christmas shearwater: None were seen or heard during our visit. Dr. Sheila Conant had visited Necker a week earlier via the Townsend Cromwell as part of the NMFS monk seal survey team. She noted one Christmas shearwater nest on Necker at that time.

sooty storm petrel: None were seen or heard.

red-tailed tropicbird: This species is distributed throughout the island but is not common. It nests under rocks, on rock ledges, under overhangs--anywhere with shade. Birds were on eggs and chicks up to half-grown. Birds were observed in aerial displays. An estimated 100-150 pairs(nests) were on the island at this time.

masked booby: Direct count of chicks indicated that 88 were present. Most were stage 6A and older, some flying. No nests with eggs were observed. Most birds were on the ridge line and upper north slope of the island. This species was very common in and around marae sites on Summit, Flagpole and Annexation Hills. Often one adult was in accompaniment of several chicks. Birds were off nests and were more clumped than actual nest sites. Three adults were already banded, but we were unable to catch them. Probably 150 pairs were present on Necker.

brown booby: Only 7 chicks were counted during a direct count of nests; all were at least half grown. This species was widely distributed over the island. Few flying immature birds were seen. Nests and chicks were found on rock ledges near the top of slopes.

red-footed booby: This species is the most abundant booby nesting on Necker. It is a common breeder found throughout the island with largest numbers on the west side of the Summit and Flagpole Hills. Birds are distributed patchily and are found where Chenopodium and Sesbania stands occur. Birds nest in shrubs (no ground nests observed), though many of the nest shrubs were dead or nearly so. Banded birds were not seen, although this species was skittish unless defending a pipping egg or young chick. An island nest count yielded 187 nests. Most chicks were stage 5 (51), 6A (48) and 6B (24).

great frigatebirds: This species is a common breeder over most of the island, particularly on north and west facing slopes and Flagpole Hill. Frigatebird nests are tied to the distribution of vegetation for nest sites. Nests were constructed of large sticks. Groups of 10-15 nests were clumped in areas of suitable

habitat. A total of 534 active nests were observed in most stages from eggs to large chicks. Few flying immatures were noted. Most birds were stage D (126), C (106), B (58), E (67) and A2 (56).

sooty terns: This species was not censused. Very dense colonies were observed in localized areas, but some nesting occurred throughout the island on the slopes and on top. Many flying chicks were noted, as were numerous birds on eggs. There appear to be two nesting phases, as few chicks of in-between stages were observed.

gray-backed tern: This species was observed on eggs and young; fledged birds were also noted. No population estimate was made.  
blue-gray noddy: No nesting was observed. Many "pairs" were seen in flight or perching atop outcrops. Birds vocalize when disturbed by humans. This species was most common on vertical rock cliffs on the west end of the island.

brown noddy: Very common nesting bird on Necker Island. Nests contained eggs and some large chicks. Birds were most common on west tip of Annexation Hill. No population estimate was made.

black noddy: Locally common on the northwestern cape and some seen in flight. Less than 200 birds were observed. Most nests had small chicks, but fledged birds were also seen.

white tern: Eggs and small chicks were observed on western ledges and caves. Nesting commonly occurred in small groups of 4-5 pairs. Some pairs were staking out nest sites. No population estimate was made.

ruddy turnstone: Groups of 1-4 turnstones were seen at various locations on the rocky shoreline and at high elevations in seabird colonies. Turnstones are responsible for some egg predation on Necker Island.

golden plover: Three different sightings of one individual were made.

wandering tattler: One observed in tidepools.

mockingbird: One bird seen flying out of overhanging ledge in depression between Flagpole and Annexation Hills. It was pecking a bird carcass on the ledge. Observed on ground and in flight at 1300 on 30 June; no photo taken.

white-tailed tropicbird: One observed at-sea 20 mile SE of Necker at about noon.

green sea turtle: Observed between 3-6 turtles on the tidal ledge below the camp site in the mornings. Usually left by 0900. Observed in the water in West Cove and Shark Bay. Carapace lengths were at least 36" (92 cm); no tags were noted with binoculars. Turtles were not approached closely because of

proximity to seals.

Hawaiian monk seal: Always at least 3-4 seals on tidal flats below camp. Observed hauled out at three other locations (W side of camp area, NW cape intertidal area and rocky intertidal area below Summit Hill).

Numbers at camp flat were as high as 10 at one time. A total of 19 were observed on the island. A high frequency of females had back scarring. No extensive field survey of seals was conducted as NMFS ecologist Morrow was on Necker the previous week. One mother-pup pair was present on the tidal flat throughout our visit. On 2 July, we observed a newborn pup and mother seal on the camp tidal flat. At 0600 afterbirth was still under the female and the water was bloodied. Presumably, the pup was born overnight.

Later that morning, the newborn pup was seen in a 1 meter deep, vertically walled tidepool unable to climb out. The pup did not have sufficient room or strength to pull itself out. It struggled for at least 15 minutes. As time went on, the pup lost strength, bellowed and began submerging more frequently. We took action to save the pup: the mother was separated from the pup and the pup was pulled from the pool. The female quickly rejoined the pup as we departed.

Two small 'no trespassing' signs were put up on West Bay. No wooden sign is on Necker, although foundations of the old wooden one were still present.

**Bombs** were observed on NW Cape and ammunition on rock faces. Archeological sites may have been destroyed by ordinance in the past.

Archeologists successfully completed field surveys on Necker.

#### FRENCH FRIGATE SHOALS

We arrived at French Frigate Shoals (FFS) aboard the F/V FERESA on 3 July. Shallenberger, Cleghorn and Komari departed to Honolulu via Hawaiian Sky Tour. Biologists Hu, Saito and Lenz joined Fefer aboard F/V FERESA which departed FFS for Laysan Island on 4 July.

#### LAYSAN ISLAND

We arrived at Laysan Island on 6 July, offloaded by 0900 and had camp set up by noon. In early a.m., a large marlin swam by the F/V FERESA as it lay anchored off the west shore of Laysan. The following surveys were conducted during the visit:

- migratory bird count of Laysan lagoon and South Rock Ledges
- Laysan finch transect survey
- Laysan duck lagoon count
- albatross diagnostics