ATOLL RESEARCH BULLETIN

No. 103

Observations on the birds of French Frigate Shoal and Kure Atoll

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Issued by

THE PACIFIC SCIENCE BOARD

National Academy of Sciences--National Research Council

Washington, D. C.

September 30, 1964

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Miklos D. F. Udvardy [1] and Richard E. Warner [2]

Through the courtesy of the United States Coast Guard the authors spent an hour on September 2, 1961 on Tern Island, French Frigate Shoal, and visited Kure Atoll from September 12 to 14, 1961, during the Harold J. Coolidge Expedition to the atolls of the Northwest Hawaiian Chain (Udvardy 1961)[3]. Both places have undergone drastic changes during the last few years and however few our observations are, their documentation should contribute to future studies of the islands.

French Frigate Shoal

Tern Island of French Frigate Shoal has been converted to an airstrip, and sparse vegetation grows only on a margin of about 50 meters width on the north and south sides of the airstrip, on loose and partially bare coral sand (Svihla, 1957; Lamoureux, 1961).

No sign of any bird nesting activities was found on Tern Island. Twelve Golden Plovers (Pluvialis dominica ssp.), 29 Ruddy Turnstones (Arenaria i. interpres (Linn.)) and 1 Sanderling (Crocethia alba (Pall.)) were the only transient or wintering residents of the island, the plovers running on the airstrip, the others on the margin of the island (the airstrip embankment is mostly supported by corrugated iron breakwaters). Only three individuals of sea birds were in the air around Tern Island, i.e., a Sooty Tern (Sterna fuscata Bloxam), a Fairy Tern (Gygis alba (Gm.)) and a juvenile Red-footed Booby (Sula sula rubripes Gould).

It is worth mentioning that a disintegrating carcass of a hatchling green sea turtle (Chelonia mydas (L.)) was picked up by one of us on the north margin of the airstrip, in loose coral sand, with the carapace crushed.

Kure Atoll

The vegetation and the bird fauna of Kure Atoll have been described by Kenyon and Rice (1958) as late as 1957. Green Island was then approximately 1½ miles long, and 1 mile wide, with 10 to 20 foot-high dunes behind the beach. It was almost wholly covered with an "almost impenetrable" thicket of Scaevola bushes, except one interior opening of low herbaceous vegetation.

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[3] A grant of the National Research Council of Canada, partly used on this expedition, is gratefully acknowledged.

In December, 1959, Dr. Chandler Robbins, Jr. informed one of us (pers. communication to M.D.F. Udvardy) that he had just visited Kure Atoll, and that a project had been started there by the U. S. Navy to "improve" Kure for the nesting of the two albatross species. The scheme was an attempt to compensate for the population losses on the Midway islands. Zig-zag strips (cf. Figs. 2 and 4) were plowed bare of the Scaevola bushes so that these birds could find more take-off and nesting possibilities.

Little trace of these changes could be detected on Green Island in September, 1961; for still greater changes have since drastically altered the vegetation. Early in 1961 an U.S. Coast Guard "Loran" station was established there.

An estimated one third of the island—its whole narrower end—is taken up by an airfield. The airfield (Figs. 1, 2) is bordered by Scaevola of 2-3 meters height and some Messerschmidia trees. Part of the southern half of the remainder consists of houses, roads, playfield and lawns. In the west center of the island there is a 625 foot high antenna. Its system of guy-wires reaches almost to the beach on the North side, and covers the central flat and open part of the remainder of the island (Figs. 3, 4). The land under these wires is cleared. Coherent, undisturbed vegetation occurs on the beach crest of the southwest, west and northwest side of the island, and a Scaevola strip around the rest of it. The west side of the interior of the island, where not plowed, consists of low Scaevola and patches of Boerhavia, or Eragrostis bunchgrass, with one extensive grassy area (presumably the "interior opening of low herbaceous vegetation" of Kenyon and Rice l.c.). The flora of the island is described by Lamoureux (1961) of the same expedition; Clay (1961) shows two photographs of the island.

As bird habitat, the runway and the settlement are naturally excluded. The interior had numerous nesting pairs of Masked Boobies (Sula dactylatra Gould) and Red-tailed Tropic-Birds (Phaethon rubricauda (Mathews)), both species with young ranging from downy nestlings to almost fledged young. The interior, and even the previously cleared area, now largely vegetated with Boerhavia, had numerous (i.e., many hundreds, but no estimate was attempted) burrows inhabited by Wedge-tailed Shearwaters (Puffinus pacificus Lesson), and by the Bonin Island Petrels (Pterodroma hypoleuca Salvin) that did not yet start to nest but visited the island every evening. The Scaevola thicket of the beach crest had nesting Red-tailed Tropic-Birds, Great Frigate Birds (Fregata minor Gmelin) and Red-footed Boobies, the latter especially on the taller trees of the southeastern dunes of the island.

A dozen or so Bristle-thighed Curlews (Numenius tahitiensis Gmelin) were seen in loose groups on the beach, together with about 35-40 Ruddy Turnstones, and 8-10 Wandering Tattlers (Heteroscelus incanum (Gmelin)). More curlews fed on the open and low grassy areas of the island interior, where turnstones only rarely were flushed. Fourteen Golden Plovers mostly kept to the runway and the open sand pit at the east end of the island. On the northeast of the island 20-30 "Hawaiian Terns" (White-capped Noddy, Anous tenuirostris Guy) were on Scaevola bushes.

On September 12, we visited the larger of the two sand bars which are, besides Green Island, the only visible parts of the atoll. On this 400 meter-long sand bar, practically devoid of vegetation, only a dozen Bristle-thighed Curlews and a number of Noddy Terns (Anous stolidus (Scop.)), common also on Tern Island's beach line, were seen.

We found 40 Hawaiian Monk Seals (Monachus schauinslandi Matschie) on this sand bar. The north and northeastern side of Tern Island seemed to be a favorite howling ground of the seals, and 25-30 seals were counted there on the early afternoon of September 12 and 13. The seals slept on the beach crest, in the shadow of the tall Scaevola bushes.

Several of us systematically searched for dead, or injured birds under the guy wires. In a short time the following were found:

Frigate birds	2
Red-tailed Tropic-Birds	2
Sooty Tern	1
Gray-backed Tern (Sterna lunata Peale)	1
Wedge-tailed Shearwaters	2

During our stay we witnessed several such accidents. The tropic-birds are apt to hit the wires during their mid-day aerial displays, and the frigate birds during their communal soarings. The shearwaters and petrels seem to hit the wires at night, partially blinded by the electric lights on the buildings.

As a conclusion of our observations, Kure is no place for the soaring albatrosses now, except perhaps the beach, which could harbour a few black-footed albatross pairs. The guy-wires will in all likelihood very effectively keep them off. The other sea birds may stay, if no further habitat is altered, in the way they had lived on the Midway islands, with the extra toll taken on their populations by the hazards of living near and on human habitations.

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Legends to figures

Figure 1. Loran station living facilities, fuel oil tanks, and runway, looking SSW. The heavy, uninterrupted Scaevola thicket which occupies the right center, is nesting ground of frigate birds, masked boobies and red-tailed tropic-birds. The hollow beach line to the left of the runway is the favorite hawling ground of monk seals. Green Island, Kure Atoll, September 1961.

Figure 2. Portion of airstrip, Green Island, Kure Atoll. Note Loran tower guy wires and radial bulldozer paths. Zig-zag strips of sand, on top and left center, are the result of 1959 bulldozing operations to create albatross runways. September 1961.

Figure 3. Vertical view from top of Loran tower, SE side, height 625 feet. Note changes in vegetation due to activities. Green Island, Kure Atoll, September 1961.

Figure 4. SE view of vegetation changes from Loran tower. Height 625 feet. Note guy wires and narrow, recent bulldozer paths. Strip bulldozed in 1959 shown from top to bottom center. Curlews use it for feeding together with the grassy patches shown in lower half of picture. Wedge-tailed shearwaters and Bonin Island Petrels also burrow on the wide strip. Green Island, Kure Atoll, September 1961.

All photos courtesy Foundation of Environmental Biology.

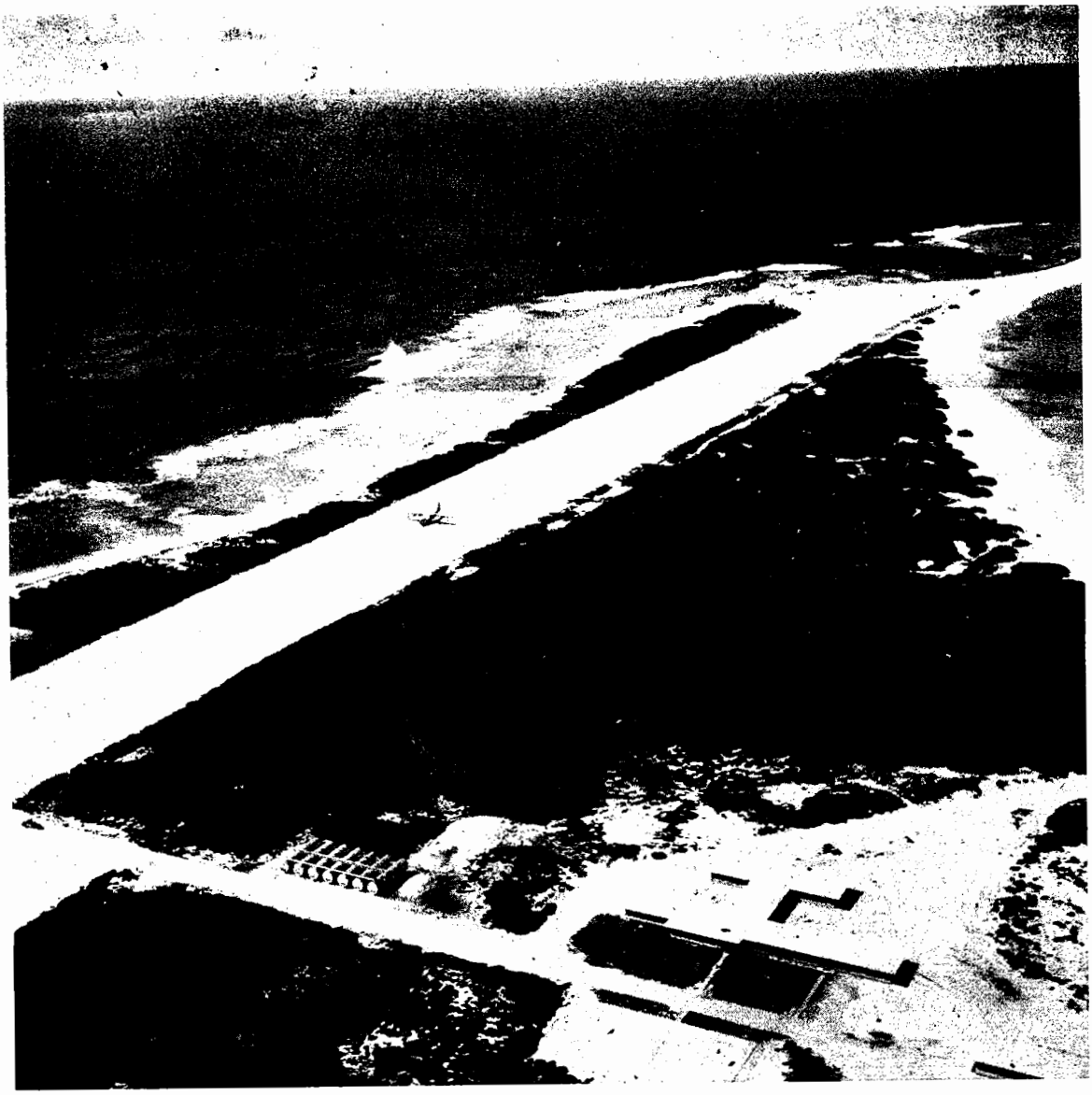

Figure 1

Figure 2

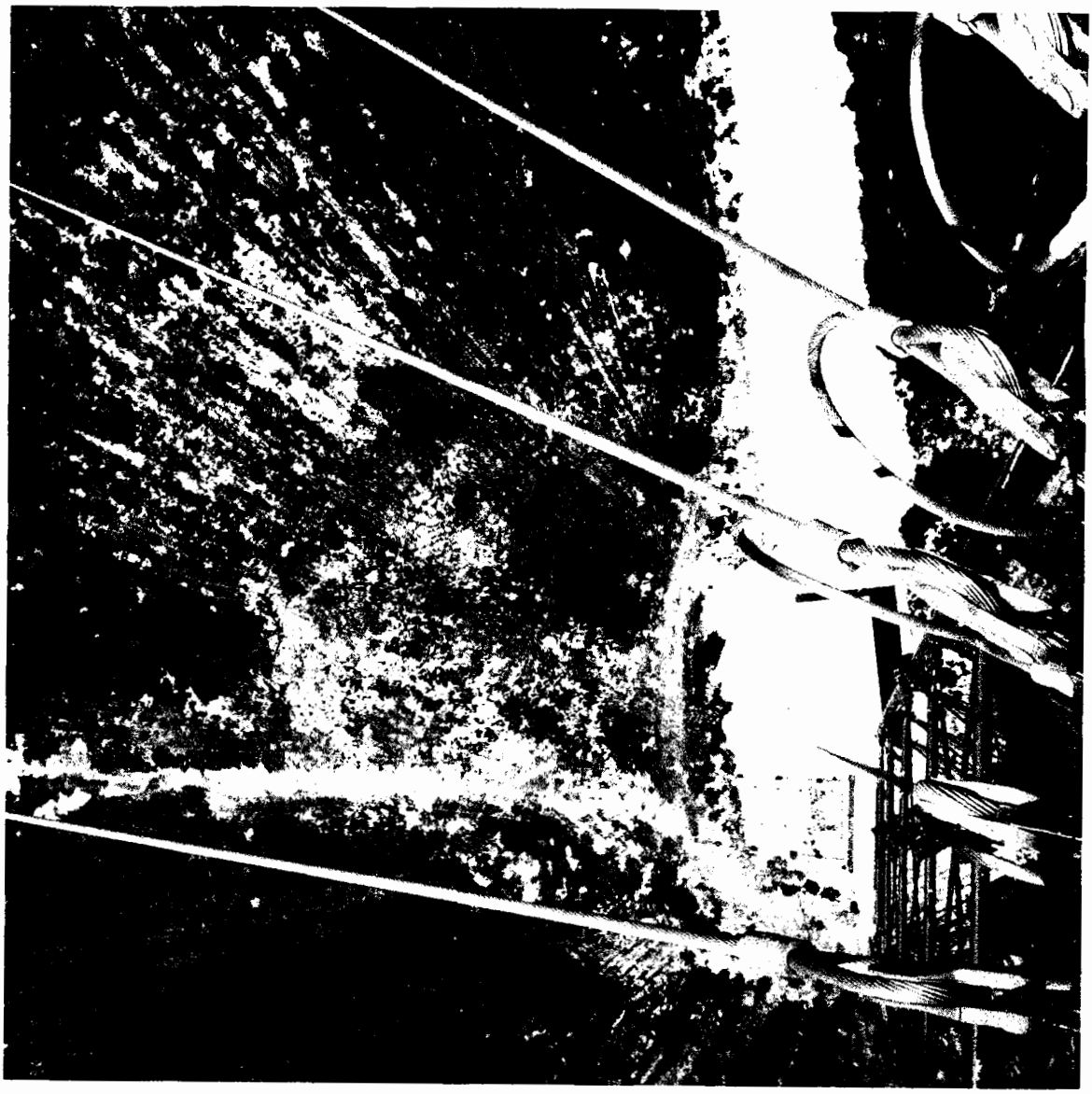

Figure 3

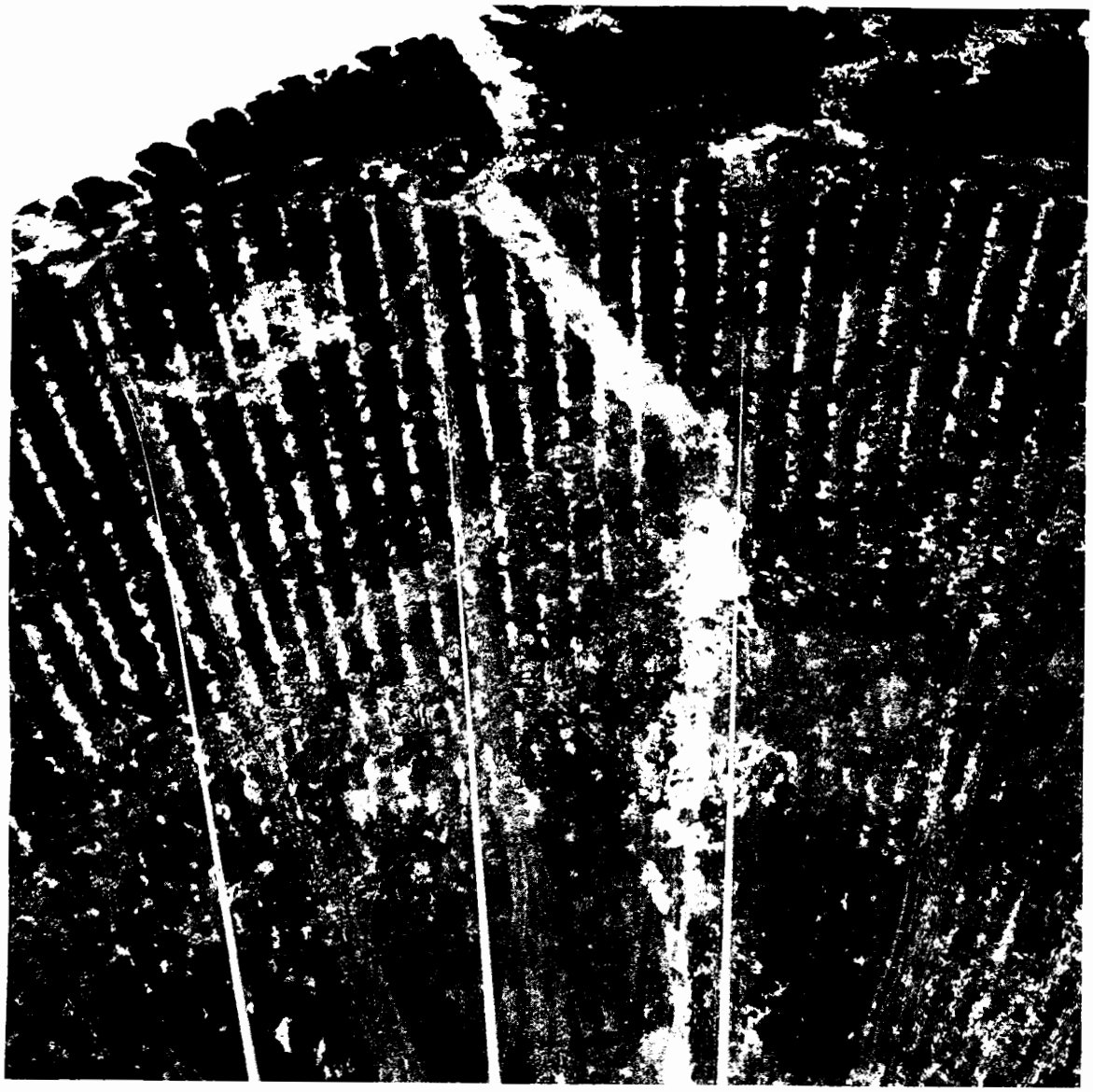

Figure 4