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THE BIRDS OF MOLOKINI ISLAND, MAUI

by Cameron B. Kepler and Angela K. Kepler

Molokini Island, the eroded remnant of a tuff cone, arises from Haleakala's south-west rift in Alalakeiki Channel only 4.3 km west of Puu Olai, on Maui's south shore (Fig. 1). It reaches a maximum elevation of about 50 m.

The outer sea cliffs, pocked with weathered holes and shelves, have an average slope of about 73° , far steeper than the crater's inner walls, which drop at about 32° (Forbes 1913) until they terminate in vertical sea cliffs of varying height above a wave cut terrace at water's edge. This shelf, in many places broad and passable during calm weather, continues around the two northern points to encircle the island. The ridgeline distance between the island's two northern points is nearly 400 m, and the area is approximately 7.7 ha (Kapakapa 1940). Submerged remnants of the cone extend seaward from the northwest

point (Lalilali) in a graceful arc (Fig. 2), outlining part of the ancient crater, partially enclosing a shallow lagoon, and breaking the swell to a landing site on the point's inner edge. There is no real leeward side to the island, as winds constantly buffet it from both north and south, an outcome of its exposed

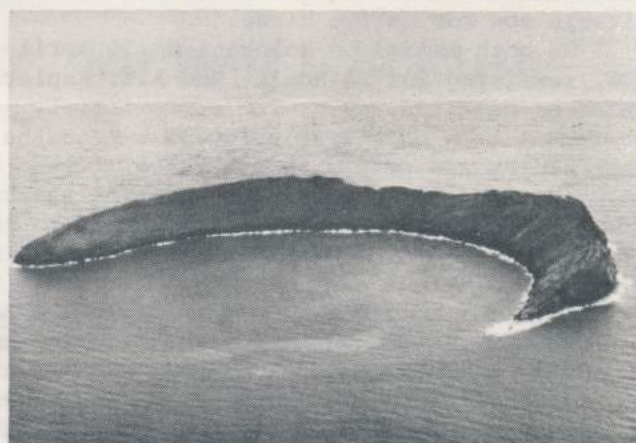


Figure 2. Molokini Island, Maui, as viewed from the north.

position at the junction of the tradewinds passing westward and north through the Alenui-haha Channel, and those funnelling south across Maui's valley between Haleakala and the West Maui mountains. In general, mornings are calm, with southern breezes, and afternoons are windy, with strong trades engulfing the island from the north.

The U.S. Navy, and perhaps other branches of the military, bombed and strafed Molokini Island during World War II. This apparently stopped in 1946, for a new navigational light, replacing an earlier one, was installed in 1947 (G. Swedberg, pers. comm.), and is currently maintained by the U.S. Coast Guard. The bombardment was extensive; we found bullets

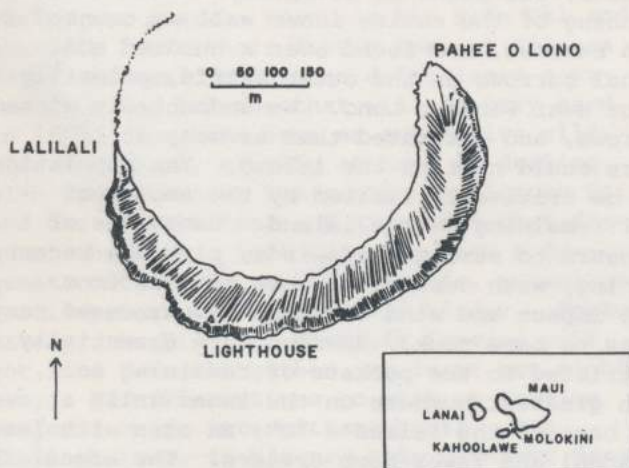


Figure 1. Molokini Island, Maui (after Forbes, 1913).

protruding from the cliffs, bomb craters on the inner slopes, cliffs fractured by impact, and bits of twisted metal throughout the island. This must have affected the species composition, distribution, and abundance of Molokini's sea birds, as it has done in other targeted islands (Kepler & Kepler 1978). Unfortunately we may never know what the real impact was, for Molokini has been infrequently visited by biologists. Forbes (1913), the first biologist to discuss the island, collected 15 species of plants in 1913. Among Hawaii's ornithologists, G. Munro landed on Molokini in 1936 (Bush 1937), Dave Woodside in 1954 (pers. comm.), and F. Richardson in 1954 (Spoeher 1954, Richardson 1957). Apparently no ornithologist has studied the island since Richardson, nor is it likely that anyone had spent a night on the island prior to our visit (Woodside, pers. comm.). We found no reference to the population sizes or breeding seasons of the resident sea birds. Nor did we know what to expect 24 years after Richardson's visit, for Berger (1972:30) stated that neither Kahoolawe nor Molokini "is suitable now for native birds."

We both landed on Molokini on 30 April 1978, remaining for 24 hours, and A.K. Kepler landed on August 9, 1979, for approximately 45 minutes. On the first trip, we walked the inner slopes and crest, except where it was too precipitous or we risked collapsing shearwater burrows. We also hiked the entire ridgeline after dark, looking for nocturnal mammals and procellariids. We counted every burrow visible on the inner slopes from Lalilali Point, and also circled the island by an inflatable boat (zodiac), counting shearwater burrows and looking for signs of sea bird use on the outer slopes. During our visit Molokini was suffering from a recent prolonged drought (1973 to 1978), and most vegetation was dead or dormant. We noticed a very sparse covering of dry grasses on the crater's inner walls, and some thin Koa Haole (*Leucaena glauca*), *Lantana* sp., and a few succulents (*Opuntia* and *Portulaca*).

SPECIES ACCOUNTS

Reptiles. The only reptiles we saw were about 5 Snake-eyed Skinks (*Cryptoblepharus bou-toni*), which ranged from near sea level to the top of the ridge. To our knowledge they have not been previously reported from the island.

Mammals. We observed no mammals, nor their sign, during our stays, even though we were active for three hours after dark. Rabbits were introduced to Molokini sometime before 1915, and were still present in 1961

(Watson 1961); two were shot during Woodside's 1954 visit (pers. comm.). Watson (op. cit.) noted that rabbit populations on small islands were subject to "violent fluctuations" and die-offs, and it is possible that the recent drought eliminated them from the island. If rats or mice occurred, they were in very low numbers during our visit.

Birds. Because of Molokini's size and location, we hoped to find that a variety of sea birds had colonized the island since the 1950s, when Woodside (pers. comm.) and Richardson (1957) had noted only Bulwer's Petrel and Wedge-tailed Shearwaters breeding. Apparently suitable habitat for a number of native species does occur, but the only breeding species were the procellariids mentioned above. We found another four species that used the island for roosting or feeding, and saw birds passing over between Maui and Kahoolawe. An old account of a "lark" (Skylark?) brings the total number of species seen on the island to eight.

Wedge-tailed Shearwater (*Puffinus pacificus*). Abundant in the Leeward Islands, Wedge-tails also nest in variable numbers along the coasts and offshore islands of the main Hawaiian chain (Richardson 1957, Berger 1972). We examined 165 burrows in one section of Molokini's inner slope and found 24 (14%) occupied by one (8) or possibly two (16) adults. (On the second trip, 3 out of 21 nests were occupied by one adult.) These numbers were greatly augmented at dusk as hundreds of additional birds flew to the island to prospect for burrows or sit in pairs in front of their nest sites. Most burrows showed fresh scraping, footprints, or defecation streaks, all signs of occupancy. In a careful scanning of the entire inner wall we counted 1275 burrows, and found over a hundred additional burrows on the outer cliffs, primarily on or near Pahee o Lono. We undoubtedly missed burrows, and estimated that as many as 1500 pairs could nest on the island. The population may be critically limited by the amount of soil remaining on the island. Centuries of exposure to strong tradewinds, plus the recent bombing, with consequent loss of soil from bomb impact and wind erosion, have reduced many areas to bare rock. Burrows were essentially restricted to the pockets of remaining soil, with greatest numbers on the inner walls at the base of the island's "U", an area with less shrapnel and fewer bomb craters. The areas just south of Lalilali had very little soil, several very large bomb craters, and few Wedge-tail burrows. In some areas the remaining shrapnel had stabilized the soil, to the limited benefit of a few Wedge-tail pairs (Fig. 3).



Figure 3. Active Wedge-tailed Shearwater burrow, with adult in attendance, and shrapnel from bombardment.

Breeding phenology is undoubtedly similar to that of other Hawaiian colonies; birds arrive in March, lay in June and July, and young develop from August to November. The presence of birds in their burrows during our April visit would indicate that the laying season was approaching. In August, A.K.K. checked 21 nests. Four contained one downy young each (all approximately 16 mm long), two had small dead downy chicks (one had died while hatching) and four contained unhatched eggs. Broken shells lay in several other burrows, with no additional signs except fresh adult guano.

From 1700 to 1900 on 30 April 1978, hundreds of Wedge-tailed Shearwaters soared gracefully over the island to their burrows, most of them leaving again at first light the following morning, and on both trips, several were seen soaring in the island's immediate vicinity during the day. Four of 100 incoming birds counted were dark-phase consistent with King's (1967) statement that 97% of Hawaiian birds are light phase.

Bulwers Petrel (*Bulweria bulwerii*). This small petrel breeds on most of the leeward islands, and on the following of Hawaii's offshore islets: Kaula, Lehua, Moku Manu, Manana, Popoia, Mokulua, Keaoi, Kaohikaipu, and Molokini (Richardson 1957, Berger 1972, R. Shallenberger, pers. comm.). They are relatively quiet on their breeding grounds and tend to remain within their inconspicuous burrows whenever on land. They normally enter and exit their burrows, and their colonies, at night, making it very difficult to estimate their numbers. Fortunately they do respond to a crude imitation of their soft "woofing" call, thus giving themselves away from within their burrows. They also occasionally defecate at their burrow entrance. Using these meager clues, in April we located four burrows with adults in attendance, and found several other potential burrow sites with small defecation streaks at their entrances (Fig. 4). We were unable to probe any of them for eggs, but would probably not



Figure 4. Active Bulwer's Petrel nest in typical bomb crater rubble. Note defecation streaks at burrow entrance. An adult was in attendance, 30 April 1978.

have found any, as laying in other Hawaiian colonies commences in May. The burrows we found were inaccessible bomb craters or other fractured rubble that resulted from bombardment. Molokini has many such sites, and numerous natural cracks, so the breeding population could be a hundred or more pairs, although a more thorough survey is needed to determine this. In August A.K.K. observed five or six currently-occupied burrows in bomb craters checked on our previous trip, and one contained a fluffy black downy chick, approximately 18 mm long.

We found a fully-feathered, neatly-severed head of an adult Bulwer's Petrel on the ridgeline, so we suspect that the bird was a victim of human predation. R. Shallenberger speculated (Berger 1972) that *Graspus graspus* may prey on Bulwer's on Manana Island, Oahu. We saw several of these crabs foraging on Molokini's ridgeline, so they could scavenge or prey on chicks here as well.

Great Frigatebird (*Fregata minor*). One female roosted overnight on the only tree (dead) capable of supporting the species; a large white guano patch beneath it indicated long use. A juvenile fregatebird attempted to share this limited site, but was driven away by the female, and apparently left the island shortly before dark.

Wandering Tattler (*Heteroscelus incanous*). Three tattlers fed on the intertidal shelf, and one or two others flew along the coast, appearing to travel between Maui and Kahoolawe.

Golden Plover (*Pluvialis dominica*). At least one plover roosted overnight on the island, calling frequently; it flew off at dawn. We found some skeletal material of this species close to the ridge.

Ruddy Turnstone (*Arenaria interpres*). Three flew over Molokini from Kahoolawe to Maui on both occasions, but did not land. We found Ruddy Turnstone bones on the inner slope.

Skylark (*Alauda arvensis*). Forbes (1913) records a "lark" from Molokini in 1913; his sight record probably refers to this species, which was found on Maui early in this century (Berger 1972). Its occurrence on Molokini probably indicates that birds flew back and forth between Maui and Kahoolawe before they were purposely released on Kahoolawe.

House Finch (*Carpodacus mexicanus*). One House Finch flew low over the south side of the island at noon on 30 April, heading from Kahoolawe towards Maui. In spite of increasingly heavy tradewinds, the finch made no attempt to land.

DISCUSSION

Molokini's birds fall into three groups, those that use the island solely for breeding (procellariids), those that feed (shorebirds), and those that roost (Great Frigatebird, probably other sea birds, species passing between Maui and Kahoolawe). Most of the lowland passerine species common to both Maui and Kahoolawe can be expected to land on Molokini, for it is situated between, but well offshore, these two major islands. During our short visit we saw both Ruddy Turnstones and House Finches fly by, and Forbes, in a shorter stay in 1913, recorded a lark. Molokini would be an ideal base for a study of the rate of interisland movement of resident passerine species.

Three of Hawaii's four most common shorebirds are known to use the island, and may do so regularly, judging by the skeletal material and the presence of more than one Wandering Tattler on the intertidal shelf on both days of our first visit.

It is clear that bombing practices have altered the island, and this must have affected its original fauna and flora. However, it is equally likely that Molokini's sea birds, conveniently located between Kahoolawe and Maui, provided nourishment for Hawaiians before the Navy took over. The lack of early bird observations prevents comparison of past and present sea bird populations. The two procellariids utilize most habitat available to them, and we doubt that their populations can increase significantly. We wonder, however, why no other sea birds have colonized (re-colonized?) the island in the 33 years since the Navy stopped bombing. The cliff faces appear suitable for Brown Boobies (*Sula leucogaster*) and Black Noddies (*Anous tenuirostris*), and we suspect that Brown Noddies (*Anous stolidus*) could nest on the ridgeline and elsewhere, as they do on Manana. One recent problem is the growing number of visitors to the islands. Skin diving parties are now carried to the island daily, and some of them may explore the island. Regular human activity could easily discourage colonization in accessible areas. Perhaps this increasing human disturbance, combined with the gusty winds from all quarters, and an impoverished resource base in the surrounding waters (very few sea birds are found in the Alalakeiki and Auau Channels) all make colonization difficult.

ACKNOWLEDGMENTS

We thank James Hudnall for taking us to Molokini in his Zodiac, and for his help on the island. We are grateful to Ken Baker for identifying the skink, and Storrs Olson for identifying the skeletal material. We also thank Dave Woodside for his useful information, and G. Byrd, R. Shallenberger, J.M. Scott, J. Sincock, and G. Swedberg for their comments on the manuscript.

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MIDWAY ATOLL CHRISTMAS COUNT

This census, including Sand and Eastern Islands, was done on December 27, 1979. Center of the count is on Sand Island (28°13' N, 177°23' W). Elevations ranging from 1-12 ft.; Habitat: 98.3% open water; 0.8% urban; 0.7% *Casuarina* forests; 0.2% shoreline and beach; 0.001% fresh water ponds. The weather was 68-74° F, 100% cloud cover all day, no rain and winds 0-6 mph, NE. Two observers were in one party. Party-hours were 10.5 on foot, 3 hours on boat, and party-miles were 6 on foot and 3 on boat.

The Count was: Black-footed Albatross 6500, Laysan Albatross 220,000, Bonin Petrel 2500, Masked Booby 1 (on 2 eggs), Brown Booby 2, Red-footed Booby 110, Great Frigatebird 35, Lesser Scaup 1, Bufflehead 1, Cattle Egret 1, Golden Plover 250, Ruddy Turnstone 35, Bristle-thighed Curlew 6, Wandering Tattler 8, Sanderling 3, White-capped Noddy Tern 1200, White Tern 900, Common Mynah 25, and Canary 45. Three Hawaiian Monk Seal were seen.

The total was 19 species and 231,623 individuals. Seen in count area during count period but not on count day: Short-tailed Albatross, Red-tailed Tropicbird, White-tailed Tropicbird, Sharp-tailed Sandpiper and Rock Dove. Participants: Gilbert S. Grant (compiler) and Ted N. Pettit. Excellent details on all and photographs of most. The Cattle Egret was present since March 1979 on Sand Island.

Gilbert S. Grant

HAWAII'S BIRDS BOOK REVISION

Our sales stock of the HAS field guide, "Hawaii's Birds" is dwindling rapidly. It is time to plan for our next edition. At this time we are looking for member input to insure that we do the best job possible. So please pull out your books, look them over carefully, and then send in your suggestions for changes to be incorporated in the next edition. This is your chance, so speak up!

Also please send in any color slides of birds that you feel should be considered. We will take excellent care of your slides.

Send any suggestions or pictures to Book Revision Committee, HAS, PO Box 22832, Honolulu 96822, or contact Rob Shallenberger at 261-3741.

NOTES ON BIRDLIFE AND NATURE CONSERVATION IN THE MARQUESAS AND SOCIETY ISLANDS

Steven L. Montgomery, Wayne C. Gagné
and Betsy H. Gagné

From June to September 1977, we visited ten islands in French Polynesia carrying out primarily entomological and botanical exploration and collecting with entomologist Dr. Peter D. Ashlock (University of Kansas, Lawrence). We also made brief observations on birdlife in many seldom-visited localities in both the Society and Marquesas Archipelagoes. We travelled on a chartered Kona-based yacht, the *Awahnee*, piloted by Nancy and the late Robert Griffith.

In the Society Islands, we visited Tahiti, Raiatea, Huahine and Mehetia, and in the Marquesas Archipelago, Nuku Niva, Ua Pou, Hiva Oa, Fatu Hiva, Eiao and Hatutua.

SOCIETY ISLANDS

TAHITI ISLAND (June 26, July 4, and August 20 to September 22)

On Taiarapu Peninsula above Lake Vaiafaufa at 600 m elevation on 3 July, SLM and WCG heard several petrels, probably Tahiti petrels or Noha (*Pterodroma rostrata*) (see Bruner 1972:7) calling repeatedly from fern-covered banks in the forest after dark; one flushed near us. During mid-September, SLM spend a second night above this locality at 900 m elevation, but heard no petrels.

The Barred Dove (*Geopelia striata*) is reported by Thibault and Rives (1975) as restricted to gardens and scrub around habitations. Since returning from our trip the senior author has learned details of this dove's importation from W.A. Robinson, a resident of Tahiti for fifty years. The birds were obtained on Kauai by John Waterhouse and carried to Tahiti in 1950 on Robinson's yacht. They were held on the boat until the Territorial Assembly approved an agricultural permit. The 21 survivors were released by Robinson at his residence in Paea District. While discussing the project's purpose, Robinson recalled that the native U'upa (Society Islands Fruit Dove) appeared to be dying out in 1928, and he said that he desired to replace it with a similar, pleasant bird. However, the Fruit Dove was recently reported (Thibault and

Rives 1975) as rare in gardens, but common in lowland forests, reaching 1000 m in elevation.

Along Papano'o Stream at 300 m elevation, SLM camped with local naturalist Mr. Henri Jay below a swallow's nest (*Hirundo tahitica*) situated 6 m above ground on a vertical cliff face.

RAIATEA ISLAND (September 1-4)

Two Tahiti Petrels (*P. rostrata*) quietly walked to our Coleman lantern while we were light-trapping insects on 2 September. This was during the evening hours in a *Pandanus* thicket at 695 m elevation on the Temehane Plateau.

MEHETIA ISLAND (14 September)

We spent 24 hours on this small cindery island of recent volcanic origin situated about 100 km SE of Tahiti Island. The island's owner and only resident has allowed feral goats and pigs to browse the native vegetation so heavily that only a few interesting native plants were found clinging to the crater walls at the summit of the island. The lower elevations, however, are still forested with exotics and wide-spread indigenous species. Hiking mostly at night, we frequently heard roosting seabirds in the trees from sea level to the summit of the crater rim at 430 m elevation. At 330 m elevation, an adult Bristly-thighed Curlew (*Numenius tahitiensis*) was briefly captured and released while it was roosting among sword ferns. An unidentified booby (probably *Sula sula*) flew from a nest on a bare rock outcrop at 165 m elevation. Two dead booby nestlings (probably also *Sula sula*) found on the ground near the landing had recently been killed by dogs or cats.

TAIARO ATOLL

We did not visit this island in the Tuamotu Archipelago, but point out that W.A. Robinson has assigned this remote island to the French Government for research. Applications for study should be sent to Dr. Bernard Salvat, c/o ORSTOM, Papeete. Birdlife there reportedly includes the Fairy Tern (*Gygis*

alba), Reef Heron (*Egretta sacra*), a reed warbler (*Acrocephalus atypa*) and a fruit dove (*Ptilinopus cavallensis*).

MARQUESAS ISLANDS

NUKU HIVA ISLAND (16-19 July)

On the Toovii Plateau, the Northern Marquesan Fruit Dove or Kuku (*Ptilinopus dupetitithouarsi*) was commonly seen in rapid, direct flights above the forest. Near the summit of Mt. Ooumu at 1320 m, the Gagnés found the remains of several Tahiti Petrels (determined by S. Olson, Smithsonian Inst.) in two spots on a grassy ridge top. Several of these skeletons were deposited in the Bishop Museum, Honolulu. There, A.C. Ziegler examined the specimens and is of the opinion that the markings on the remains of the carcasses were not from a carnivore such as a dog or cat as we had expected, but rather by some species of raptor. Perhaps a stray hawk or owl is resident on Nuku Hiva, though we neither saw nor heard any. Although we spent the night of 19 July close to this locality at 890 m elevation, we saw no petrels.

We did not see the Marquesan Fruit Pigeon or Upe (*Ducula galatea*) reported by Bruner (1972) to number only between 45 and 50 birds, although we did not visit its last-reported stronghold in a small, remote valley Northwest of Taiohae.

UA POU ISLAND (23-23 July)

We hiked into the mountains from the village of Hakahetau to 990 m elevation. This is as high as one can reasonably ascend on foot without recourse to special climbing equipment. Here we saw a breath-taking spectacle: scores of seabirds, overwhelmingly petrels, cavorting around the 330 m high volcanic spires that crown the island. These pinnacles, named Poumaka, Poutetainu, and Oave, were usually shrouded in clouds. The seabirds could regularly be seen and heard around them, often paired off as in courtship.

Other species of birds made this island the most memorable of our trip. Especially striking was the iridescent Marquesan Lorikeet or Te Pihiti (*Vini ultramarinus*), which we saw commonly near the coast on coco palms and *Erythrina* trees. These birds fed on nectar and pollen, even up to the highest ridges we reached. They darted by in raucous groups of up to a dozen. It is puzzling that J.E. King did not mention them (King 1958). The jet black males of



Marquesan Lorikeet or Te Pihiti (*Vini ultramarinus*). Painting by W.T. Cooper in J.M. Forshaw's "Parrots of the World".

the Marquesan Flycatcher (*Pomarea mendozae mira*), which behaved like the 'Elepaio (*Chasiempis sandwichensis*) of the Hawaiian Islands, were noted in the forest understory on several occasions. The Marquesan Warbler or Komaka (*Acrocephalus mendanae dido*) was also a common sight. Ua Pou had the most abundant and diverse native birds of the Marquesan Islands visited.

HIVA OA ISLAND (27-30 July)

This island provided a strong contrast to Pa Pou due to the paucity of birds. The lack of singing birds, excepting the now ubiquitous introduced Common Myna (*Acridotheres tristis*), contributed to an eerie silence in the forests that we visited around Mt. Ootua on the eastern half of the island. Other than the distant, plaintive calls of the Southern Marquesan Fruit Dove or Kuku (*Ptilinopus mercieri*), mynas were the only birds we heard. A Tahiti Petrel was seen by SLM diving into a densely vegetated ridge at 890 m elevation on Mt. Ootua at dusk.

FATU HIVA ISLAND (1-3 August)

We hiked along the western rim of Uia Valley and were again treated to the acrobatics of petrels (probably Tahiti Petrels) along the sheer walls below us. It was also a common sight to see fruit doves (*P. mercieri*) play in the updrafts of the tradewinds for brief periods before resuming their direct flights. Ever-inquisitive Marquesan Flycatchers (*Pomarea whitneyi*) were "squeaked up" to close range on several occasions for photographs. After Ua Pou, Fatu Hiva had the most abundant native land-birds.



Tahitian Lorikeet or Vini (*Vini peruviana*). Painting by H. Douglas Pratt.

EIAO ISLAND (7 August)

Special government permission from the authorities in Papeete, Tahiti, was obtained before we visited this and the island of Hatutaa nearby. These are both officially designated as "Islands for Science" by the government (Decker 1972).

Eiao has lost most of its vegetation due to the depredations of feral sheep and pigs. Its barren, red wastelands reminded us sadly of Kahoolawe in the Hawaiian Islands. Surprisingly, a few Marquesan Flycatchers

(*P. mendozae*) were seen. Also, BHG found and photographed a Marquesan Warbler nestling (*Acrocephalus mendanae aquilonis*) near sea level at Vaituha Bay. There were still numerous seabird colonies, especially of boobies, on the north-facing vegetated cliff faces too steep for feral sheep to graze.

HATUTAA ISLAND (Hatutu on some charts) 9 Aug.

By contrast with Eiao Island, Hatutaa has a thick, green mantle of grasses with clumps of *Pisonia* trees. No land mammals are present except for the curious and bold rats (probably *Rattus exulans*) that scurried beneath the birdlime trees (*Pisonia*). In these trees, frigate birds and boobies nested in great numbers. Some of the latter (probably *Sula sula*) nested in great numbers. Some of the latter were also nesting in the bunch grasses (*Eragrostis xerophila*). As soon as we came ashore, we saw the ground dove (*Gallicolumba rubescens*) weakly flutter among the shrubs. They seemed quite indifferent to us until we came within a couple of meters, whereupon they would unexcitedly flap a few meters further. We saw about a dozen individuals near our landing on the north-central part of the island; they may have been somewhat concentrated here because a small valley had a seepage of fresh water just above the beach. Although we spent only a few hours ashore, it was a rare privilege to have visited such a pristine spot.

DISCUSSION AND CONSERVATION RECOMMENDATIONS

The paucity of native landbirds on Hiva Oa, along with the abundance of exotic mynas, merits a scientific investigation as to the mynas' impact as a competitor and disease vector. The introduction or spread of this bird to other Marquesan Islands would be a tragic mistake.

The endangered Marquesan Fruit Pigeon of Nuku Hiva requires immediate protection from all hunting if it is not to soon become extinct. A habitat reserve is also urgently needed. Its ability to feed on introduced guavas as reported by Bruner (1972) may indicate that, at least in food habits, it is somewhat adaptable.

The valley above Hakahetau Village on Ua Pou would make a fine study site for ecological work on the locally abundant lorikeet. In view of the decline of other Polynesian lorikeets, this may be the last opportunity to gather life history data which may help prevent a similar decline. Bruner has already called for such a study because of the limited range of this exquisite bird.

We urge interested researchers to pursue this. One option would be the lorikeet's reintroduction to Nuku Hiva, which it formerly inhabited. Decker (1973) notes that it may have established on Uahuka from human introductions.

Feral sheep and pigs must be eradicated from Eiao. Their devastating impacts on the biotas of oceanic islands are now well documented and becoming common knowledge. The same applies to feral goats and pigs on Mehetia in the Society Islands.

The presence of a species of rat, presumably the Polynesian Rat, on otherwise pristine Hatutaa deserves attention to determine whether it preys on the endangered ground dove now narrowly restricted to this island and the small islet of Fatu Huku.

The scars of forest fires were so regularly encountered that we must point out an urgent need to educate the local residents about the relation of fire to soil erosion and loss of biological diversity.

In summary, it is difficult to maintain optimism for the future of many of the remaining endemic landbirds in French Polynesia unless actions are taken soon to set aside habitat sanctuaries and to eradicate or control certain exotic birds, mammals and plants. Regarding alien plants, we were saddened to see the firm advances that the Mexican melastomaceous shrub *Miconia magnifica triana* has made into the native forests of the Taiarapu Peninsula above Vaiufaua, and also to see it established below Mt. Aorai.

The activities of the local citizens' conservation organization, Ia Ora Te Natura, and the government (see above) (Montgomery 1978, Decker 1973) are an encouraging beginning.

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Tahitian conservation poster of Ia Te Natura.

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CONSERVATION AND MAUNA KEA

by Mae Mull

(Presented orally at public meetings held in Volcano, Hilo and Waimea in early February 1980.)

The question is: how do we decide whether it is right or wrong to have more construction projects on the mountain? One answer is: decisions on Mauna Kea land use are based on how we, the public landowners, value the mountain.

Astronomers and some business interests place a high value on construction projects to achieve their goals of outer space observation or building contracts.

Conservationists, on the other hand, have a different set of values. We see the planet Earth as the only habitat to which man is adapted, and we see that survival of the human species depends upon wise use of the limited resources of Earth's natural environment. We see Mauna Kea as a spectacular resource that belongs for all time to the people of Hawaii. We place high values on its remarkable natural assets. We see it as a special resource that should not be degraded further by the heavy hand of man. People all over the world place high values on their mountain tops as linking them with the forces of nature and as sources of inner strength and peace. We do the same thing here.

Multiple use? Yes, we support uses that do not desecrate the aesthetic beauty and profile of the mountain. We support uses that do not consume or pollute the upper slopes. We can learn from the ancient Hawaiian concept of aloha aina and the kapu social system. They meant, in effect, practical conservation of the land. Careful use: you don't use up your life-sustaining resources. You don't abuse the limited assets of oceanic islands like ours.

The conservation position is expressed in the recommendations made by the Big Island committee of residents for the State's Mauna Kea plan.

1) Limiting the number of observatories to the 6 approved and now built. This number appears to meet the research and training functions of the UH Institute for Astronomy. Stopping at 6 would preserve the remaining natural features and beauty of the summit region.

2) Keeping the summit road unpaved, but safe, and open to controlled public use. 4-wheel drive vehicles only would reduce traffic, litter and scarring of the slopes.

3) Restricting the power source to generators with emission-control devices, because power lines to the summit would permit unlimited expansion.

4) Restoring Hale Pohaku as a primitive State Park for the hardy wilderness seekers. The mid-level facility for astronomers to be the minimum necessary for acclimatization purposes--not a resort-like facility with 57 bathrooms and bedrooms. We support the site on Hawaiian Homes ranching lands at 8,000 feet elevation. This is below the mamane forest in an area where native plants and animals have already been destroyed.

The people of Hawaii have made a very generous contribution to international astronomy with the six observatories on Mauna Kea and a similar number on Haleakala on Maui. This sacrifice is far more than a fair share for small oceanic islands with only three high mountains.

The peaks of long mountain ranges on the continents also present excellent astronomical viewing qualities. We know that for every proposed telescope there is active competition for the site to be selected. Mauna Kea is not the only platform for viewing the universe, but it is the only place for viewing some biological treasures that are part of our life-support system on Earth.

Holding the line at the observatories already there would preserve the remaining summit cones and plateaus from destructive bulldozing and road building. Limiting construction would protect newly-discovered high-altitude native ecosystems which have scarcely been studied. Do we have the right to destroy unique Hawaiian plant and animal communities before we've even studied them and learned what they have to teach us about life on Earth?

Mauna Kea is one lone mountain designated as a National Natural Landmark, with a special natural history all its own. On the other hand, continental mountain ranges can accommodate observatories without endangering or destroying unique biological, scenic or recreational resources.

Let's show our pride in the majestic beauty of Mauna Kea and not suffer the shame of further defacing this natural treasure of the Big Island.

NORTHERN CARDINALS FEEDING ON FLYING TERMITES

by G.A. Samuelson

This note is made in connection with my observations on the dates and relative intensities of mass nuptial flights of the subterranean termite (*Coptotermes formosana* Shiraki) in upper Kahaluu Valley, Oahu. All observations were made at 120 m elevation, close to the NE escarpment of the Koolau Range. At that station, the first heavy termite flight of the 1979 season occurred on 17 April. It was remarkable because it was the only flight of the year to begin well before the onset of darkness. It was also the only flight in which cardinals were observed feeding on termites. In that instance, termites were observed in mass flight at ca. 1845 h with light intensity equivalent to early dusk. The air was humid and quite still. About 5 minutes after the first flying termites were observed and my realizing that it was indeed a massive flight, I became aware of Northern Cardinals (*Cardinalis cardinalis*) chipping repeatedly. Two male birds were involved, with possibly a female seen earlier in the vicinity. The first cardinal was stationed 5 or 6 m high in an avacado tree, where it chipped intently. This pattern was interrupted by occasional flights, being mostly short, hovering sorties around the higher reaches of the tree, where the bird caught flying termites. The second cardinal made sorties over open ground and returned repeatedly to its station on telephone wires. These flights were usually within 3 m of the telephone wires and the duration of each was about 10 seconds. In flight, the wing motions of this cardinal were choppy and produced a jerking flight motion more or less in concert with the capture of termites in the air. At 1908 h the chipping and sorties ceased with the onset of darkness. The termite flight continued in darkness.

McAtee (1908) demonstrated with analyses of nearly 500 cardinal stomachs from mainland sites that nearly 30% of the diet is animal material, mostly insects. Although Laskey (in Austin 1968:8) reported the taking of winged termites upon a single occasion, it appears from her description that the bird took the termites just as they emerged from the ground. My report, therefore, is one of the few of termites being taken. It is also the first of their

"flycatching," certainly an unusual behavior for any finch, especially the robust cardinal.

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VOLCANO, HAWAII CHRISTMAS COUNT

by Larry Katahira

The eighth consecutive Volcano Count was conducted on Saturday, December 29, 1979. The weather was overcast in the morning and led to steady rain by noon. Twenty-seven participants worked in 12 parties, spent 61.65 hours in the field, traveled 30.0 miles on foot and 108.0 miles by car. There were fewer birds counted this year but this was probably attributed to marginal weather conditions and fewer participants.

In the 1977 and 1978 counts, additional sub-areas in Kilauea Forest Reserve, Keauhou Ranch and Upper Waiakea Forest Reserve were included for better coverage of prime birding habitat. However, this year it was necessary to omit most of these areas due to fewer experienced birders.

Five endangered birds--'Io, Hawaii Creeper, Hawaii 'Ākepa, 'Akiapola'au, and 'Ō'ū were recorded during the count. Although the Nēnē was not sighted on the Count day it was reported during the week. As in past Counts the highest number of endangered birds occurred in Keauhou Ranch and Kilauea Forest Reserve.

For the third consecutive year 'Ō'ū was recorded in 'Ola'a Tract, Hawaii Volcanoes

National Park. In closed ohia canopy with hapu'u understory, Jim Jacobi heard several distinct calls of the 'Ō'ū lasting for several minutes.

In Kilauea Forest Reserve Lani Bowden heard several calls of an 'Ō'ū. Bowden described the calls as being long downward plaintive notes repeated for approximately one minute. These vocalizations were confirmed by tape recordings provided by Ahuimanu Productions. Since the Volcano Count began in 1972 this was the first time the 'Ō'ū has been recorded in Kilauea Forest Reserve.

Our special mahalo goes to Bishop Estate and Kulani Correctional Facility for allowing our group access to their land. Also, many thanks to Dawn Breese for helping to compile the Count data.

AREAS COVERED:

1. Kipuka-Pua-ulu and adjacent areas (Peggy Kai, LaVerne and Ray Olive)
2. Rim of Kilauea Crater (same as 1)
3. Mauna Loa Trail, 6600-8200' elevation (Pay Moriyasu, Carol and Michael Riley)
- 4a. Keauhou Ranch (Dawn Breese, Larry Katahira, Dan Nakamura, Dan Taylor)
- 4b. Keauhou Ranch, Transect* 29 (Paul Banko, Roxanne Nersesian)
- 4c. Keauhou Ranch, Transect 30 (Lani Bowden)
5. Mauna Loa Road, 4000-6600' elevation (same as 3)
6. Volcano Community (Jack and Marti Lockwood)
7. Stainback Highway and Pu'u Maka'ala (William and Mae Mull)
- 8a. Kilauea Forest Reserve (same as 4a)
- 8c. Kilauea Forest Reserve, Transect 30 (same as 4c)
9. 'Ola'a Tract, National Park (James Jacobi, Dina Kageler, Kathy and Paul Samelow, Heather Scott, Kevin Scott, Michael Scott)
10. Kulani Project (Holly McEldowney, Paul Murray, Rick Warshauer)

* US Fish and Wildlife Service (Scott and Kepler) Transects 29,30 and 31 ('Ola'a Tract includes Transect 31)

Count taken within 15-mile diameter circle centered on Kulani Cone Summit (19° 31' N, 155° 18' W). Weather: overcast to steady rain; temperature 52 - 70°F; wind NE 0-5 mph; 0630 to 1800 hours. Twenty-seven observers in 12 parties. Total party-hours, 61.65 (49.0 on foot, 12.65 by car). Total party-miles, 138.0 (30.0 on foot, 108.0 by car).

VOLCANO, HAWAII CHRISTMAS COUNT - 29 DECEMBER 1979

	1	2	3	4a	4b	4c	5	6	7	8a	8c	9	10	Total
White-tailed Tropicbird	-	7	-	-	-	-	-	-	-	-	-	-	-	7
Hawaiian Hawk	-	-	-	1	-	-	-	-	-	-	-	-	-	1
California Quail	-	15	-	15	-	-	12	-	-	-	-	-	-	42
Ring-necked Pheasant	-	-	-	-	-	-	8	-	-	-	-	-	-	8
Green Pheasant	-	-	-	1	-	-	2	-	-	-	-	-	1	4
Golden Plover	-	13	-	97	-	-	6	23	-	-	-	-	10	149
Spotted Dove	-	5	-	3	-	-	5	18	3	-	-	2	-	36
Barred Dove	-	2	-	-	-	-	3	-	-	-	-	-	-	5
European Skylark	-	1	2	27	-	-	3	-	-	-	-	-	5	38
Red-billed Leiothrix	-	-	1	70	-	19	7	6	6	2	-	9	2	122
'Oma'o	-	32	2	209	185	65	7	-	252	37	26	20	36	871
Hawaii 'Elepaio	-	15	6	63	20	43	43	-	20	20	2	4	2	238
Common Myna	-	16	1	80	-	-	2	32	-	-	-	2	4	137
Japanese White-eye	10	12	7	60	70	44	49	4	88	22	-	35	5	406
Hawaii 'Amakihi	-	-	22	51	80	22	47	-	13	14	-	-	18	267
Hawaii Creeper	-	-	-	10	4	6	-	-	-	2	-	-	-	22
Hawaii 'Akepa	-	-	-	13	10	6	-	-	-	7	4	-	1	41
'Akiapola'au	-	-	-	3	-	3	-	-	-	2	7	-	-	15
'O'u	-	-	-	-	-	-	-	-	-	-	1	1	-	2
'Apapane	20	97	25	1317	1200	490	47	49	1139	220	350	224	240	5418
'I'iwi	-	-	6	49	79	104	58	-	101	8	11	-	34	450
Spotted Munia	-	-	-	6	-	-	-	10	9	-	-	6	-	31
House Sparrow	-	10	12	-	-	-	45	5	-	-	-	-	-	72
Northern Cardinal	15	-	-	30	-	8	3	1	1	-	-	-	-	58
House Finch	-	-	6	57	-	4	48	-	-	-	-	-	25	140
No. of Individuals	45	225	90	2162	1648	814	395	148	1632	334	401	303	383	8580
No. of Species	3	12	11	20	8	12	18	9	10	10	7	9	13	25

FIELD TRIP TO WATERBIRD REFUGES

Dark clouds and threatening showers gave way on Sunday, 10 February 1980 to superb sunshine and cooling breezes as a dozen birders moved from Kahuku to Pearl Harbor in the course of the course of the Society's monthly field trip.

A predominance of visitors was very apparent in the group that assembled, by various routes and meeting places, at the Kahuku Sugar Mill at 8:00 a.m. The first move was to Kii Pond and the prizes of the day. Two Brant (*Branta bernicla nigricans*) were well seen in good light for a half hour, both swimming and flying. This is the bird formerly known by U.S. birders as the Black Brant but now considered a subspecies of the Brant.

Before an advancing shower line caused the party to depart, one watcher counted 109 Coots. Two Common Gallinules and the usual shovelers, Pintails and stilts accounted for most of the other sightings. The water was unusually high.

After a lunch break at Haleiwa, the slightly reduced troop proceeded to Waipio Peninsula in the Pearl Harbor area. Here the birds seemed quite at ease in the warm sun and light winds. Perhaps the quiet, easy-moving observers had something to do with it. Green-winged Teal, 3 Dunlin, a Sharp-tailed Sandpiper, Dowitcher sp?, shovelers, Pintails and stilts were present. An ibis seen busily feeding on the "islands" of vegetation was assumed to be the "Oahu" ibis which has been around for several years. No one has been able to choose between Glossy and White-faced for this visitor (a kamaaina by now?) and this field trip didn't change its status.

About 3:00 p.m. the remaining half-dozen travelers decided to quietly fold their tripods and silently steal away, having covered 100 miles of Oahu roads.

George Campbell

ALOHA TO NEW MEMBERS

Welcome to the following new members. The Society hopes that they will share our activities and help further the protection of Hawaii's wildlife.

Joint with National: A.D. Ackerman, Kealahou; Robert and Anne Aitken, Haiku; John R. Arnold, Wahiawa; Laura M. Baring, Honolulu; Mrs. Carolyn Biven, Kaawa; Margaret P. Blackmer, Hilo; Eugene B. Bondi, Honolulu; Mary Bowman, Honolulu; William H. Brinkman, Hawaii National Park; Keith M. Burchett, Kahuku; Roy K.S. Chang, Honolulu; Division of Forestry, Honolulu; Mick Flynn & Family, Agana, GU; Diana Fujimori, Kailua; Alan D. Hart, Chestertown, MD; Dr. and Mrs. Daniel K. Hartline, Honolulu; Thomas Haynes, Haiku; A. Louise Hinkley, Honolulu; Doris T. N. Hiramoto, Kilauea; A.L. Holm, Laie; J. Kapuni, Hilo; John Francis Krason, FPO San Francisco; Mari and Leonard Kubo, San Francisco; Dan Lutkenhouse, Hilo; Mr. and Mrs. K.G. Malisch, Honolulu; Helen O. Marston, Honolulu; Mrs. D.C. Matthews, Waimanalo; Mr and Mrs. Neil Monet, Kailua-Kona; Maura Naughton, Honolulu; Eloise Naone and Sammy, Kaneohe; Cathy Nelson, Kilauea; S. Nomura, Honolulu; A. and M. Peiterson, Kaneohe; James & Legay Prattas, Kealahou; Charles M. Quarre, FPO San Francisco; James D. Rack, Honolulu; Molly M. Rae, Kaunakakai; Beverly Ramsey, Honolulu; Jennifer Richardson, San Diego, Calif.; Wayne T. Sakaguchi, Honolulu; Dr. and Mrs. George F. Schnack, Honolulu; V. A. Scott, Honolulu; Steven Shimoda, Honolulu; Marie E. Stanley, Ewa Beach; Atsushi Shirai, Waimanalo; Edmundo Sosa, Volcano; Jason Tamura, Kailua; Leilani Tatsuno, Honolulu; Elma T. Taylor, Honolulu; Stan Taylor, Honolulu; Cecily Trent, Waimea; Lillian V. Viguers, Ewa Beach; Greg and Masako Westcott, Haiku; A.J. Wriston, Jr., Honolulu; Mrs. Elinor Yasui, Honolulu; Yaeko M. Yokoyama, Honolulu; Bert K. Yoshihara, Honolulu.

Ruth McKinney

The Hawaii Audubon Society extends its condolences to staff member Walter McKinney on the death of his wife Ruth. Mrs. McKinney passed away in March after a prolonged illness. Walter is now recovering from major surgery. The Society wishes him a speedy and complete recovery.

HAS PRESIDENT TAKES POSITION
WITH US FISH AND WILDLIFE SERVICE

Beginning in early April, HAS President Rob Shallenberger transferred to the U.S. Fish and Wildlife Service as a Supervisory Wildlife Biologist responsible for Refuges and Wildlife Resources. In this role, Rob will supervise management of the five wetland National Wildlife Refuges in the main islands (Hanalei, Huleia, James Campbell, Pearl Harbor and Kakahaia), the Hawaiian Islands National Wildlife Refuge (including most of the northwestern islands), and other island refuges south of the Hawaiian Islands (Johnston, Baker, Howland, Jarvis, Rose Atoll). In addition, the Service manages an administrative site at Kilauea Point on Kauai, where numerous seabirds now nest. Rob's responsibilities will include management of migratory bird populations, pursuant to treaties between the U.S. and other nations. The Service also works actively with military agencies in the management of wildlife resources on defense installations.

Rob looks forward to the application of his interest and experience in research and environmental education in the development of viable programs for wildlife research and interpretive use on Hawaiian refuges. Currently the Service is preparing an interpretive display for the Kilauea site that will provide an interesting perspective on wildlife at Kilauea and in the northwestern islands.

Rob jumps into a hotbed of controversy surrounding the future management of resources in the northwestern islands. A meeting of agencies and university people involved in cooperative research in these islands took place on 24-25 April, to evaluate the status of research programs and to consider future directions. Primary involvement in a tripartite cooperative research effort in the northwestern islands comes from the US Fish and Wildlife Service, State Department of Land and Natural Resources and the National Marine Fisheries Service. Sea Grant also has launched an impressive research program in this combined effort to evaluate fishery and wildlife resources in the islands, and the potential impacts of commercial exploitation on non-target species.

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MAY FIELD TRIP

The Society's field trip to Manana Island on May 11 will be conducted jointly with the Sierra Club Hawaii Chapter. Spaces on the trip are limited to 30, and the HAS share is already well over-subscribed.

HAMAKUA CLEAN-UP

On the one-year anniversary of the Hamakua Canal Clean-up, it is time once again to ask for your kokua. We will be cleaning this wetland bird habitat site in preparation for an educational observation park. The group will meet at the Hamakua Canal on Hamakua Drive next to the Top Dollar Realtor office in Kailua on May 4 at 9 a.m. Come out and give a hand and also have a good close look at some of Hawaii's Endangered waterbirds. For information, call Dan Vitiello at 923-0861.

ANOTHER BYRD FLIES THE COOP

G. Vernon Byrd, Assistant Refuge Manager on the island of Kauai for the US Fish and Wildlife Service, left the islands in mid-April and entered a state of "semi-retirement" in order to farm his land in northeastern Washington state. Vern and his wife Val and son Matt leave their lovely home at Kilauea Point on Kauai, and in so doing leave a vacancy in the islands that will be very hard to fill. Vern has been an aggressive wildlife biologist, equally at home in dealing with taro farmers, the public at Kilauea Pt. and the shearwaters and albatross that frequent the site. Vern has also been a frequent contributor to the 'Elepaio, an enthusiastic researcher and an avid birder. Fortunately, the Fish and Wildlife Service will not lose Vern altogether, at least not right away. He will continue to work on Service projects on an intermittent basis. Rob Shallenberger, in his new role with the Service, is particularly enthusiastic about the possibility of "tapping Vern's wealth of experience and knowledge from afar as long as he has the time and inclination."

MAY TALK

The May 20 meeting will feature C. J. Ralph talking about "Forty Years of Honolulu Christmas Counts." The meeting will be on TUESDAY (this month only) instead of Monday, and will be held at the regular meeting place, the McCully-Moiliili Library, 2211 S. King St., beginning at 7:30 p.m. The introductions of a number of our now common species of birds took place since the Count was initiated in 1939. The apparently adverse interactions between these species and our native species have produced a unique set of information unmatched by any other Count in the U.S. The population trends of many species will be discussed. Anyone who has ever participated in the Count will find this an especially interesting subject.

HELP WANTED -- VOLUNTEERS

We need volunteers to help with a number of activities essential to the Society's programs. If you can give even a little time to any of the following interesting tasks, please call the contact indicated.

SALES -- Fill mail orders for the Society's publications (book *Hawaii's Birds*, Guide, checklists, posters, back 'Elepaio, etc.). Keep stocks in your home, package and mail the items. Mostly small orders. Forward payment checks to Treasurer at intervals. All work done in your home. Call Rob Shallenberger -- 261-3741.

CONSERVATION COMMITTEE -- Members needed to follow one or two environmental issues (whales, Makiki Park development, or etc.), assist with preparing testimony and letters. Call Peter Galloway -- 947-4045.

ACCOUNTANT -- Give consultation and guidance to Treasurer in organizing and maintaining the Society's financial bookkeeping. Call Norris Henthorne -- 734-7562.

CORRESPONDENT -- Assist Membership Committee by writing short letters acknowledging contributions and new Life Memberships. Call Susan Schenck -- 488-4974.

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HAWAII AUDUBON SCHEDULE OF EVENTS

(For details, see inside back page)

May 4 (Sunday). Hamakua Site Clean-up.
Meet at Hamakua Drive, Kailua, near Top
Dollar Realtor office at 9 a.m. (Rob
Shallenberger - 261-3741).

May 11 (Sunday). Field trip to Manana Is.
only for those who have already reserved.
Meet at Makai Pier near Sea Life Park at
8 a.m.

May 12 (Monday). Board Meeting at Manoa
Library, 2716 Woodlawn Dr., 7:00 p.m.,
specifically to discuss dues increase.
Members are urged to attend.

May 20 (Tuesday). Regular meeting at
McCully-Moiliili Library, 2211 S. King
St. Speaker: Dr. C.J. Ralph on *Forty
Years of Honolulu Christmas Counts.*
Begins at 7:30 p.m.

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Whales are wonderful and HUMUNGUS;
Save the Whales and keep them among us.



Michele Heidebrink
Holualoa School, Kona
Hawaii Wildlife Week,
1979 Poster Contest Winner

Malama Home o Palila Save a Place for Hawaiian Wildlife





© H. Douglas Pratt 1975

The Palila is an endangered Honeycreeper bird now surviving only in the Mamane forest high up on Mauna Kea. Painting courtesy of H. Douglas Pratt. Hawaii Wildlife Week 1980 Educational Project, Conservation Council for Hawaii, P.O. Box 2923, Honolulu, HI 96802. Sponsoring groups listed on reverse side.

HAWAII WILDLIFE WEEK

March 16-22, 1980

Dear Educators, Students, and other Concerned Citizens,

Again this year, many groups are cooperating to provide resource materials useful to Island Science and Hawaiian teachers.

How would you react if you went home today and found your home bulldozed to the ground? That would be horrible, but you could always find a place to stay with neighbors or relatives. And what if their homes were also destroyed? If the whole town was flattened, where would you go then? There are times when people face situations like this — during wars or floods — and government usually comes to the rescue, though often after great suffering has occurred.

But think, now, of our wildlife. Every time forest fires occur, when marshes, streams, or ponds are drained, or when bulldozers come to clear the land — what happens to the wildlife inhabiting these areas? This is a great problem for Hawaiian wildlife. Then the Polynesians came and by the time of Captain Cook's arrival, they numbered about 300,000 people. Now we have a population of more than a million, with an additional three million visitors per year. In order to make homes for all these people, we have too often removed the homes of wildlife. Many native Hawaiian animals could not survive these changes, and they are extinct — gone forever. Many others have been pushed back further and further, becoming endangered species which may not survive unless they have a place to live in their natural home, which scientists call their "habitat."

A safe habitat is essential for all species, from the smallest of birds to the Humpback Whale. This is why many local groups support the creation of a Marine Sanctuary for our whale's warm breeding waters, and also support the Alaska Wilderness Bill of U.S. Senator Paul Tsongas for the best protection of its vital cold feeding waters. Local residents which feed and over-winter here, but breed every summer in Alaska, are the Pacific Golden Plover (Kolea), Ruddy Turnstone (Akekeke), and Wandering Tattler (Uilili). We are asking our own Senators to vote for his strong bill.

The Palila poster and story of sheep destroying their home can be put up and read in classes to stimulate student discussion, concern, and pride in their natural heritage. The Palila's story is especially important, as it shows that by improving our management of public lands following enforcement of conservation laws, we can lessen the problems we have made for native wildlife. We welcome everyone to join with us in efforts to preserve it.

David Boynton and Steven L. Montgomery
Co-Chairpersons, Wildlife Week Committee

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