



## HALF A CENTURY OF CONSERVATION EFFORT: WHERE ARE WE?

Marjorie Ziegler

The Hawaii Audubon Society was established more than 50 years ago to further the protection and conservation of Hawaii's native species and the ecosystems on which they depend. The focus is on more than birds, and continuity has been one of our greatest strengths.

Society member Fern Duvall in a 1989 overview of our conservation efforts in the past half century (*'Elepaio* Vol.49(11):69—72) pointed out that many of the issues have not changed significantly in that time. Introduced species, grazing and logging in koa forests, and conserving the endangered Hawaiian Crow, for example, still concern the Society. While some members may be discouraged by the fact that these issues have not been resolved, most would take note of the conservation community's perseverance!

The Society has maintained its traditional three-prong approach to conservation: education, service, and activism. Our current approach, however, is perhaps a bit more sophisticated than in the past, mainly because environmental problems and their solutions are becoming increasingly complex.

A look at HAS's 1990 conservation activities dealing with native species protection suggests what the Society may expect in the year ahead.

### HAWAII'S VULNERABLE BIOTA

The Hawaiian Chain, consisting of some 132 islands, atolls, rocks, reefs, and shoals, is the most geographically isolated archipelago in the world. About 90 percent of our native plant and animal species are found nowhere else. Although the islands make up only 0.2 percent of the entire U.S. land mass, one quarter of the nation's imperiled species are native to Hawaii, and about 75 percent of the total U.S. extinctions are Hawaiian species. Fifty-eight native Hawaiian plant and animal taxa (3 mammals, 30 birds, 5 reptiles, an entire genus of tree snails, and 19 plants) are officially listed as endangered or threatened with extinction. Critical habitat has been designated for five of these species. Hundreds of additional plant and invertebrate species are candidates for listing as endangered. No law protects endangered ecosystems per se, such as streams, lava tubes, and anchialine ponds even though natural communities in Hawaii have been identified for protection.

On a positive note, relatively large natural areas have been set aside and are protected, in varying degrees, as national parks, national wildlife refuges, state natural area reserves, and private preserves. Smaller areas and individual species are managed in sanctuaries, captive breeding facilities, and botanical gardens.

### CONSERVATION EFFORTS IN 1990

Hawaii Audubon Society members from O'ahu, Maui and Hawaii formed the 1990 HAS Conservation Committee. Meeting once a month and working closely with the National Audubon Society, the committee pursued issues identified in the joint HAS/NAS Conservation Campaign (*'Elepaio* Vol.50(3):24), as well as others that came to our attention during the year. Conservation of the endangered Hawaiian Crow occupied most of the committee's time. HAS and NAS had been trying to persuade state and federal agencies to carry out on privately owned land the recovery tasks necessary to assure the crow's survival. In November, legal action was initiated to force the agencies involved to take action.

Water-related issues ranked high among the Society's 1990 conservation priorities. HAS worked toward securing wetlands at He'eia, Ka'elepulu and Kaiwai Nui on O'ahu, and Kanaha and Waihe'e on Maui. We joined other conservation groups in petitioning the U.S. Fish & Wildlife Service (FWS) to list the endemic freshwater fish 'O'opu Hi'u Kole as an endangered species with critical habitat designation. This fish and its habitat have been adversely affected by water development projects and stream alterations. At press time, the Service is still considering our petition.

During the 1990 legislative session, HAS joined in persuading state legislators to kill a bill that would have allowed the introduction of freshwater eels to Hawaii.

HAS also commented on the Hawaii Water Plan and Hawaii Stream Assessment for the state, urging the Commission on Water Resource Management to accept the assessment and its recommendation to adopt a stream protection policy. An amended assessment was accepted in December.

The Society supported resolutions requesting FWS to re-establish recovery teams and to designate critical habitat for Hawaii's endangered and threatened species. We supported a resolution calling for an environmental impact statement on the state Department of Transportation's roadside herbicide-spraying program. The resolution never made it to public hearings, and we will pursue this matter again in 1991. HAS also testified in favor of stronger plant and animal quarantine laws, and restricting species introductions.

The Society contributed to a successful legal effort to get FWS to increase the rate of listing endangered Hawaiian plant species. We also joined in the production of *Geothermal: A Risky Business*, a video that includes discussion by biologists on native species and ecosystems found at Wao

Kele O Puna rain forest, on Hawai'i, where large-scale geothermal development is proposed. HAS supported an effort to designate as a science reserve an 8-acre tract at Barber's Point, O'ahu, that contains limestone sinkholes and fossil bird bones. We also supported a Kaua'i call for an environmental impact statement on the U.S. Army's proposed STARS rocket-launching program at Barking Sands, which could significantly affect natural and cultural resources, including endangered species.

We appreciated opportunities to meet with decision and policy makers, including William Paty, chairman of the state Department of Land and Natural Resources; John Doebel, assistant director of refuges and wildlife for FWS Region 1; Bob Ruesink, chief of listing and recovery of FWS Region 1; Senator Daniel Inouye; and then-Representative (now-Senator) Daniel Akaka.

In an effort to encourage networking and public participation in conservation initiatives, the Society published *Hawai'i Green Pages*, a directory of more than 150 environmental efforts throughout the state.

#### THE AGENDA FOR THE YEAR AHEAD

The Society will be re-evaluating its goals and objectives at a leaders' retreat later in January. We plan to continue working on securing wetlands on O'ahu and on Maui. We will also be urging the National Park Service to determine the boundary and secure the northernmost section of Kaloko-Honokohau National Park on the Big Island, a major habitat for endangered water birds. (Inclusion of the area in the park is questioned by developers who plan an adjacent resort.)

We expect to testify on DLNR's proposal to amend the state's Endangered Species Act to provide for a mitigation policy that may permit incidental taking of endangered species in certain cases. This is the first substantive proposal to amend the state act, which already is significantly weaker than the federal law. HAS and other groups feel that such a proposal must contain adequate procedures for public input in determining the appropriateness of mitigation, as well as provisions for monitoring and enforcement.

The Society is also concerned about the recent DLNR proposal to selectively log and plant native koa trees at Kapapala, Hawai'i, an area that includes essential habitat for Hawai'i island's endangered 'Akepa, Creeper, and 'Akiapola'au forest birds, as well as the endangered Hawaiian Hawk and other native birds that occur in the area.

Legislation on a statewide stream-protection policy may also be sought to preserve water courses for their biological, recreational, and aesthetic values, while recognizing appurtenant and other water rights.

As in the past year, we hope to continue meeting regularly with other environmental organizations and key state administrators, including Michael Buck, administrator of the Division of Forestry and Wildlife, DLNR; Manabu Tagomori, DLNR deputy to the Commission on Water Resource Management; and Dr. Bruce Anderson, deputy director of the Department of Health.

The HAS Conservation Committee seeks new members with creative ideas and approaches. If you are interested in a particular conservation objective, or if you have only time for a few quick phone calls to state legislators during coming session, please call the Society.

Finally, remember that HAS conservation initiatives require funds. All contributions to HAS beyond your annual membership can be designated for the protection of Hawai'i's native species and their habitats. The extent to which the Hawaii Audubon Society achieves its conservation goals in 1991 depends on the interest, support, and involvement of its members!

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#### HAWAII AUDUBON SOCIETY PUBLICATIONS

*Hawaii's Birds* by the Hawaii Audubon Society, 4th edition, 1989. Over 150 color photographs and illustrations. \$10.20 per copy (\$8.95 plus \$1.25 postage).

*Checklist of the Birds of Hawaii — 1988* by R.L. Pyle. Lists all taxa naturally occurring in Hawai'i and introduced species that have established viable populations. Also includes all changes from the 1983 Checklist. \$2.00 postpaid.

*Checklist of the Birds of Micronesia* by P. Pyle and J. Engbring, 1985. Lists all taxa naturally occurring in Micronesia and introduced species that have established viable populations. \$2.00 postpaid.

*Field card of the Birds of Hawaii* by R.L. Pyle and A. Engilis, Jr., 1987. A pocket-sized field card listing bird taxa found in Hawai'i with space for field trip notes. \$.25 postpaid, ten or more, \$.10/copy.

*Endangered Waterbirds of the Hawaiian Islands* by R.J. Shallenberger, 1978. Hawaiian Stilt, Coot, Gallinule (Moorhen), and Duck each described in two pages of photographs and text. \$1.00 postpaid.

Posters, 43 x 56 cm., \$1.00 each, postpaid:

*Our Homes are Hawaii's Wetlands*, 1984. Native wildlife of a Hawaiian marshland.

*Hawaiian Forests are More Than Trees*, 1988. Hawaiian forest plants, invertebrates, birds, and the Hawaiian Hoary Bat. Booklet included.

Send your order and check (payable to the Hawaii Audubon Society) to the HAS office, 212 Merchant Street, Suite 320, Honolulu, HI 96813.

#### BEQUESTS

A bequest to the Hawaii Audubon Society is an excellent way to help in our conservation efforts. George C. Munro, enthusiastic and tireless field ornithologist and naturalist, provided for a fund to be used exclusively for the protection of native dry forests. Today, the George C. Munro Fund provides money for research projects on such forests. Although an attorney should be consulted in the drafting of your will, a model clause for bequests is set forth below.

"I hereby give, devise, and bequeath to the Hawaii Audubon Society, Honolulu, Hawai'i, the sum of \_\_\_\_\_ dollars (or set forth a description of property), to be used for the general purpose of said organization."

For more information and assistance, contact the Hawaii Audubon Society, 212 Merchant Street, Suite 320, Honolulu, HI 96813, (808) 528-1432.

## CHECKLIST OF THE BIRDS OF THE MARIANA ISLANDS

James D. Reichel and Philip O. Glass

The 15-island Mariana Archipelago lies in a north-south arc extending 812 km between 13°14' and 20°32' N latitude and 144°37' and 146°04' E longitude (Fig. 1, page 11). Located approximately 1,770 km south-southeast of Tokyo and 2,570 km east of Manila, the Marianas are the most northerly island group in Micronesia. They generally decrease in size from the large, nonvolcanic islands in the south to small, actively volcanic islands in the north. The largest (541 km<sup>2</sup>), most populous (1988 pop. 120,000), and southernmost island is Guam, a U.S. territory. The rest of the archipelago makes up the U.S. Commonwealth of the Northern Mariana Islands (CNMI). The seat of government and most populous island (1989 pop. 35,000) in the CNMI is Saipan. Fewer than 100 people inhabit the 10 islands north of Saipan.

The first significant ornithological explorations of the Marianas were by the French naturalists Quoy and Gaimard during 1819 and 1829. They collected birds and described them, including several species new to science (Quoy and Gaimard 1824-1826, 1825, 1830-1835). Other naturalists described birds collected in the Marianas during subsequent years (Kittlitz 1836; Oustalet 1889, 1895, 1896; Marche 1891; Hartert 1898; Seale 1901; Mearns 1909; Townsend and Wetmore 1919).

Japanese ornithologists published several editions of checklists of the birds of the Japanese-mandated islands, including the Marianas, during the Japanese era from 1914 to 1944 (Takatsukasa and Kuroda 1915a, 1915b; Kuroda 1922; Takatsukasa 1932-1938; Hachisuka et al. 1932, 1942). These lists mostly comprised accounts of birds collected during scientific expeditions, but not all provided lists of bird occurrence by island group.

Baker's (1951) monograph, for many years the standard ornithological reference work for the region, gives detailed species accounts of the 206 forms of birds known from Micronesia before 1950 and known island records for each species. Baker did not compile a separate Marianas list, but he reported 77 species as occurring on one or more islands in the Marianas with an additional 3 as hypothetical. Later, Owen (1977a) updated the list, including a total of 91 species plus 1 hypothetical in the list for the Marianas group. Pyle and Engbring (1985) revised the Micronesian list, showing 136 species in the updated "Guam" and "Northern Marianas" columns. They organized the checklist by island groups, making it compact and handy for the visiting bird enthusiast and ornithologist.

The field guide by Pratt et al. (1987) provided for the first time a comprehensive guide and checklist, with full-color illustrations, for all the birds known from the tropical Pacific, including the Marianas. They provided separate lists for three subgroups of the Marianas: Guam, Rota, and Aguijan-Tinian-Saipan, but only in the text do they give records from the 10 northern islands. A total of 124 species are listed in the table and text, plus 10 species of hypothetical occurrence.

In this paper we provide the first island-by-island checklist of the avifauna of the Marianas. Birds seen offshore are listed for a particular island only if the sighting occurred within 30 miles (48 km) of that island. All species seen farther offshore, out to 200 miles (322 km), have also been reported from at least one island. To date we have records of 146 species, plus 11 hypotheticals. These include 28 resident land and wetland birds (8 of which are introduced), 12 resident seabirds, and 106 migrant or vagrant birds (including seabirds). Eight land and wetland species are endemic to the Marianas; of these, the Marianas Mallard (*Anas platyrhynchos oustaleti*) and Guam Flycatcher (*Myiagra freycineti*) are presumed extinct. The Guam Rail (*Rallus owstoni*), originally endemic to Guam, currently exists only in captivity and in a population introduced to Rota in December 1989.

We use the same taxonomic arrangement of families as do Pratt et al. (1987) and the same English names, except for the Greater Sand-Plover (*Charadrius leschenaultii*) and White Tern (*Gygis alba*)

for which we follow usage of the American Ornithologists' Union (1983).

The authors have each spent over three years in the Mariana Islands working for the Commonwealth of the Northern Mariana Islands Division of Fish and Wildlife (CNMI-DFW). We have visited all islands in the chain except Farallon de Medinilla, currently a U.S. bombing range. Bird abundance shown in Table 1 is based on our field experience, supplemented by unpublished field-trip notes of R.B. Clapp, T.O. Lemke, and T.K. Pratt; and by consultations with R.E. Beck, P.J. Conry, and G.J. Wiles, biologists with the Guam Division of Aquatic and Wildlife Resources (DAWR). Bird status is based on the literature, when available; our own experience, supplemented by information of other Marianas biologists listed above, was used in other cases.

Findings regarding intensity of Palearctic bird migrations across the western Pacific (McClure 1974, Williams and Williams 1988) and the recent catastrophic extinctions of Guam's native forest birds (Savidge 1987) illustrate the interest in and need for careful documentation of the native and migratory fauna of our fragile island ecosystems.

We hope that this checklist will be of use to researchers and nature enthusiasts visiting the western Pacific. Users are encouraged to inform the authors of any additions, corrections, or omitted previous records they encounter. We particularly hope that this checklist, when used in conjunction with the definitive field guide by Pratt et al. (1987), will stimulate interest in nature study among school-age children of Guam and the Northern Mariana Islands. Ironically, despite years of intense military and commercial development in this island chain, local interest in preservation of our native wildlife and forest communities remains minuscule and has received little official encouragement. We hope this will change in the years to come.

Publications cited in Table 1 are those that first listed the species for the island; unpublished reports are listed only if no published records exist from the island. For less common migrant and vagrant species, the first published report adequately documenting the species is listed; an earlier publication that simply listed a species as "present" may not have been used. Abbreviations used for citations in the Checklist are given next to their corresponding entries in Literature Cited; other abbreviations are as follows:

### ABUNDANCE

- a = abundant, almost certain to be found in numbers within representative habitat.
- c = common, a few individuals almost certain to be found in representative habitat; common migrants arrive annually in numbers.
- u = uncommon, not certain to be found within representative habitat; uncommon migrants arrive annually, but generally found only a few times per year.
- r = rare, only a very limited population present; rare migrants generally do not arrive annually.
- v = vagrant, species well out of normal range, not expected to be regularly seen in the area.
- h = hypothetical, species not unequivocally known from an island.
- x = probably or certainly extirpated from the island.

### STATUS

- R = resident native, breeding.
- I = introduced resident, breeding.
- U = unknown status, visitor or resident (breeding not confirmed).
- V = visitor, not breeding.
- @ = endangered or threatened species.
- # = species endemic to the Mariana Islands.

\* = additional information on the species in Appendix.

\*\*\*[ ] = species not unequivocally known from the Mariana Islands; see Appendix.

\*\*() = island occurrence based on an almost certainly incorrect report; not otherwise known from that island; see Appendix.

Species or island reports requiring clarification are listed in the Appendix. Most cases relate to taxonomic or occurrence status as stated in this checklist and are of sightings we believe to be insufficiently documented. Nine species discussed in the Appendix are not included in Table 1: Short-tailed Albatross (*Diomedea albatrus*), Pink-footed Shearwater (*Puffinus creatopus*), White-eyed Duck (*Aythya australis*), Gray Francolin (*Francolinus pondicerianus*), Chinese Bamboo-Partridge (*Bambusicola thoracica*), Ring-necked Pheasant (*Phasianus colchicus*), Gull-billed Tern (*Sterna nilotica*), Brown Hawk-Owl (*Ninox scutulata*), and Java Sparrow (*Padda oryzivora*). These records are either from unpublished reports without adequate descriptions (though they may be listed in Pyle and Engbring 1985 or Pratt et al. 1987) or are introduced species that no longer have populations in the Mariana Islands. Hypothetical records not detailed in the Appendix were originally reported as hypothetical or as "species pairs."

#### APPENDIX

Short-tailed Albatross. Anonymous (1945) reported that Gleize stated in a letter that he and Genelly saw eight "off Saipan." We agree with Baker (1951) that due to the very small population of this species during that period, this record is probably inaccurate. We list this sighting as a hypothetical Black-footed Albatross record for Saipan.

Black-footed Albatross. The only specimens of this species were taken by Marche on Agrihan in 1888-1889. Other reports either give no descriptions or the descriptions given lack the detail necessary to rule out other species.

Laysan Albatross. The description by Fritz (1902) of a bird unfamiliar to him most closely corresponds to this species, but it lacks details required to rule out other species.

White-necked Petrel. This species has also been reported from locations well offshore of the Mariana islands (Tanaka and Inaba 1981; Tanaka, pers. comm.); we do not include these records in our checklist for any particular island.

Bonin Petrel. This species has also been reported from locations well offshore of the Mariana islands (Tanaka and Kaneko 1983; Tanaka, pers. comm.); we do not include these records in our checklist for any particular island.

Streaked Shearwater. Pyle and Engbring (1985) cite Dixon and Starrett (1952) for a CNMI record. These sightings were over 140 miles (225 km) from any island (Dixon and Starrett 1952) and thus we do not include them in our checklist for any particular island.

Pink-footed Shearwater. Listed as being seen by M. Molina in Maben (1980) without descriptive details. We disregard the record.

Wedge-tailed Shearwater. Listed as a migrant for Guam, it may have been a breeding species previously (Coults 1931). Pratt et al. (1987) list it as breeding in the northern islands based on a range map in King (1967). All King's maps for breeding seabirds in the Marianas have a single arrow pointing approximately to the center of the chain, regardless of the location or number of islands with breeding.

Audubon's Shearwater. Oustalet (1896) reported specimens of this species from Rota and Saipan. The Saipan specimen has since been reidentified as Newell's Shearwater (Jouanin 1956). The Rota specimen is an Audubon's Shearwater (C. Jouanin, pers. comm., letter to JDR 6 June 1989). Breeding is listed for Audubon's Shearwater in the Marianas by Pratt et al. (1987) based on King (1967) (H.D. Pratt, pers. comm.). We have checked all King's (1967:116) references for the Marianas and the only record for this species is in Oustalet (1896). That reference is for a single specimen and does not give any evidence for breeding. We believe King (1967) assumed breeding status because of breeding in island groups to the north (Bonins) and south (Palau and Caroline Is.) of the Marianas. Addi-

tionally, Brewer (1977) reported a colony actively nesting on platform rocks just offshore of the village on Rota. Without supporting descriptive details we consider this record invalid, since no other researcher this century or present local resident has noted them and the habitat is apparently not correct for this species, which typically nests in holes in limestone cliffs (Baker 1951).

Sooty Storm-Petrel. King (1962) reported an observation of this species from Guam but he reidentified it as Matsudaira's Storm-Petrel (King 1976). Pyle and Engbring (1985) cite Pratt (1984b) for this species. Details are lacking to separate this species from several closely related ones (*Oceanodroma matsudairae*, *O. monorhis*, *O. leucorhoa*, *O. markhami*) and we consider it hypothetical.

Masked Booby. Pratt et al. (1987) list it as breeding on Tinian; Pratt (pers. comm.) could not locate the source of the report. No biologist working on Tinian in the past decade has found this species, thus we list it as migrant.

Great Cormorant. A large unidentified cormorant was seen in Guam (Beck and Wiles, in prep.). We list it as hypothetical under Great Cormorant, which is the only species of large cormorant recorded for Micronesia.

Little Pied Cormorant. It is listed in Pratt et al. (1987) Micronesia Regional Checklist under the Saipan, Tinian, Aguijan column; we assume this refers to a Pagan sight record that lacks details (Hachisuka et al. 1942).

Great Frigatebird. Summerhays et al. (1977) report breeding from Maug; since no nests are described and no other researchers have found breeding frigatebirds here, we do not consider this record valid without additional supporting evidence (however, see Reichel [1990] for discussion).

Lesser Frigatebird. The Oustalet (1895) specimen was referred to as *Tachypetes aquila minor*; Jouanin (pers. comm.) confirmed the identification as a Lesser Frigatebird, making it the only specimen record from the Marianas. Summerhays et al. (1977) report breeding from Maug, but since no nests are described, no other researchers have found breeding frigatebirds here, and this species is far less common than the Great Frigatebird, we do not consider this record valid without additional supporting evidence.

Pacific Reef-Heron. Pratt (1984a) lists this species as occurring on Alamagan without comment. The basis of this report is unknown.

Green-backed Heron. Jenkins (1983) lists this species without comment for Guam. Inasmuch as no one else has reported the species there, we list it as hypothetical.

Rufous Night-Heron. It is listed in Pratt et al. (1987) Micronesia Regional Checklist under the Saipan, Tinian, Aguijan column; this referred to the Pagan record cited in our checklist (H.D. Pratt, pers. comm.).

Green-winged Teal. Pratt (1984a) lists this species on Tinian with no description. Other confusing small teal are known from this area and we consider the records hypothetical without further documentation.

Marianas Mallard. This endemic duck is believed to be a stabilized Mallard X Gray Duck (*Anas superciliosa*) hybrid swarm (Yamashina 1948). Surveys have recently shown it to be extinct (Reichel and Lemke ms.).

White-eyed Duck. Pratt et al. (1987) cite Guam DAWR field notes as the basis of this hypothetical record. The field notes are totally without descriptions, and they list up to 11 individuals during 1963 and 1964. During those years no Tufted Ducks (which commonly occur on Guam) were recorded. We believe the record is based on misidentifications.

Japanese Sparrowhawk. Baker (1951) lists a specimen collected on Guam in October 1887 and cited by Oustalet (1895), who called it *Accipiter nisoides*. Jouanin (pers. comm.) examined the specimen (Paris Museum No. 5481) and gave the following information: male *Accipiter* in juvenile plumage, wing 201 mm, tail 132 mm, tarsus 41 mm. A drawing of the wing shows the point of the wing to be (in order of length) primaries 7,6,8,5,4,3,2,9. Jouanin was unsure of the identification but said the specimen matched neither *A. gularis* nor *A. virgatus*. The data make the specimen more likely to be the

Besra (*A. virgatus*) or Northern Sparrowhawk (*A. nisus*) (King and Dickinson 1975).

Common Buzzard. Beck and Wiles (in prep.) list an unidentified *Buteo* species for Guam. We list this record as hypothetical under the Common Buzzard because it is the only *buteo* positively identified from Micronesia.

Chinese Goshawk. Listed by Pratt et. al. (1987) without comment for Guam.

Northern Hobby. Jenkins (1983) lists this species without comment for Guam. Additionally, Pratt and Lemke (1984a) list it as hypothetical for Pagan (included as hypothetical by Pyle and Engbring 1985) but the description fits either this species or the Amur Red-footed Falcon.

Micronesian Megapode. T. Pratt believed he heard one calling from near the northeast shore of Medinilla (Pratt and Lemke 1984a). We list the Megapode as extinct on Tinian in spite of the report by Wiles et. al. (1987a), the first this century despite many other surveys of the island. We feel that no viable population presently exists and that the bird temporarily recolonized the island, possibly with human help (Glass and Aldan 1988). On Saipan, no megapodes had been reported since the 1930s until they were rediscovered in 1978 (Pratt and Brunner 1978). The current population is about 50 and is believed to be the result of recolonization (Pratt and Brunner 1978, Glass and Aldan 1988).

Gray Francolin. This species was introduced on Guam in May 1961. Two hundred individuals were released at two sites and were known to have nested. They did not become established and were last reported in 1972 (Anon. 1974).

Bamboo Partridge. About 40 Bamboo Partridges were released on Guam in December 1960 (McGowan, undated). They were brought in by Air Force personnel from Japan. No reports after 1961 are known, and this species apparently never became established (G. Wiles, R. Beck, pers. comm.).

Ring-necked Pheasant. Baker (1946) reported an introduction to Guam but the attempt was unsuccessful (G. Wiles, R. Beck, pers. comm.).

Red Junglefowl. Listed as occurring on Guam by Cram (1927), there is apparently no evidence that they currently are established in the wild (G. Wiles, R. Beck, pers. comm.).

Common Moorhen. Becker and Butler (1988) report moorhen bones were found at three separate archaeological sites on Rota; they dated from 1500-2000 B.P. (Butler 1988).

Small Pratincole. Jenkins (1983) lists this species with no details for Guam. Additionally Pyle and Engbring (1985) mention and disregard a record from Saipan listed as appearing in Tenorio and Associates (1979 = U.S. Army Corps of Engineers 1979). In an examination of the report we were unable to find a Saipan record listed, although a record for Guam, probably the same record as Jenkins (1983), is reported. Because it is highly unlikely that this essentially nonmigratory bird would occur here, and since no descriptions are given, we disregard the records.

Lesser Golden-Plover. Listed with no details in an Environmental Impact Statement on bombing of Medinilla (Department of the Navy 1975). Since no details of when, how, or if an actual ground survey was performed, coupled with highly suspect species and population reports, we treat all records in this report as hypothetical.

Spotted Redshank. Jenkins (1981) reported this species but the report lacks any descriptive details. An observation of a single bird on 1 Oct 1980 by Anne Maben is recorded in Guam DAWR field notes; it also lacks any description.

Although this species is relatively easy to identify, we feel that for a bird only reported one other time in Micronesia, in Truk (Owen 1977b), and never in the Marianas, descriptive details are needed; thus we treat it as hypothetical.

Upland Sandpiper. Maben and Wiles (1981) list this bird but the description fits the Ruff as well as this species; since the Ruff is known from the Marianas and the Upland Sandpiper would be a vagrant far out of its range, we disregard this record, as do Pratt et. al. (1987).

Whimbrel. Considered hypothetical on Medinilla and reported only by the Department of the Navy (1975) (see comments under

Lesser Golden-Plover).

Long-toed Stint. Listed without details in King (1962). King, in a letter to JDR (dated 21 Nov 1988), said he did not distinguish the bird from a Least Sandpiper, nor did he have notes such that it could be done now. Jenkins (1981) also reported this species; no supporting details are given.

Herring Gull (*Larus argentatus*). Oustalet (1896) lists a specimen of *Larus vagae*, which has been listed later (e.g., Baker 1951) as *L. a. vagae*. Jouanin (pers. comm.) reports he and Pierre Devillers examined the juvenile bird and it is probably *L. fuscus* or *L. taimirensis*.

Gull-billed Tern. Both Pyle and Engbring (1985) and Pratt et. al. (1987) cite Pratt (1984a) for this species. We feel the description in Pratt (1984a) is not sufficient to positively identify this species, particularly since it would be a new Micronesian record. We treat it as hypothetical without additional substantiation.

Common Tern. Listed for Pagan with no description (Tenorio and Associates 1979). Several questionable records lead us to give only hypothetical status to rare or difficult-to-identify species listed in Tenorio and Associates (1979).

Black-naped Tern. Dixon and Starrett (1952) list this species for both Rota and Pagan. We list these records as hypothetical because they lack adequate descriptions.

Little Tern. Prior to 1988, Little Terns were known from Micronesia only as migrants; Reichel et. al. (1989) describe recent breeding on Saipan.

Sooty Tern. Engbring et. al. (1986) list R. Clapp (pers. comm.) for breeding on Saipan. This record was in error (R. Clapp, letter to JDR dated 22 Dec. 1987).

Philippine Turtle-Dove. Considered hypothetical on Medinilla and reported only by the Department of the Navy (1975) (see comments under Lesser Golden-Plover).

Brown Hawk-Owl. Considered hypothetical in Pratt et. al. (1987), it is listed without details for Rota.

Mariana Crow. Davis (1954) says it is present on Aguijan. A member of that expedition, G.D. Peterson (pers. comm.), reported that the cook shot several for dinner, but it was not otherwise seen by other members of the expedition. We believe if crows had been common enough to enable the cook to collect several, the species would not have been overlooked by others in the party. Because of this and for additional reasons listed below under Tinian Monarch, we disregard this record as a probable misidentification of a Micronesian Starling (as does Pratt et. al. 1987).

Tinian Monarch. Davis (1954) says it is present on Aguijan, but also lists the Mariana Crow; neither Japanese collectors in the 1930s-1940s (Hachisuka et. al. 1942) nor later biologists have reported either species despite many man-months of bird censusing (Engbring et. al. 1986, Reichel et. al. in prep.). Apparently this record was based on a single sighting (G.D. Peterson, pers. comm.) but no description was written at the time and identification was made using Mayr (1978). Mayr (1978) has no illustrations and only a short description; no migrant flycatchers are mentioned. We feel this record does not meet minimal acceptable standards and, if not simply a misidentification of another resident such as a Rufous Fantail, may have been a migrant species. Pratt et. al. (1987) list the Tinian Monarch for Aguijan based on Davis (1954) and G.D. Peterson (pers. comm.).

White Wagtail. Listed by Wiles et. al. (1987b) as either *Motacilla alba* or *lugens*, we place it under *M. alba* based on geographical considerations.

Micronesian Starling. Considered hypothetical and reported from Medinilla only by the Department of the Navy (1975) (see comments under Lesser Golden-Plover).

Chestnut Mannikin. Tenorio and Assoc. (1979) reported this species on Saipan during their wetland survey for Feb.-Mar. 1979. They also reported several other very unlikely species and do not give descriptions or other data. Since this species has not been seen by anyone else, we disregard the record.

Java Sparrow. Hartin (1961) reported a small flock; they have since died out. According to Guam DAWR field notes they were released in 1956, apparently bred for several years, and were last seen in 1962 (files of Guam DAWR).



Table 1 (continued).

		Island															
		GUA	ROT	AGU	TIN	SAI	MED	ANA	SAR	GUG	ALA	PAG	AGR	ASU	MAU	URA	
MEGAPODES	MEGAPODIDAE																
Micronesian Megapode @ *	<i>Megapodius laperouse</i>	xU-wa	xU-wa	uU-Tk	xU-Gd	rU-ou	hU-PL	uR-Fa	cR-Fa	aR-Fa	rR-TY	rR-ou	rR-OU	rU-YA	cR-Fa	rR-Fa	
PHEASANTS, QUAIL, FRANCOLINS	PHASIANIDAE																
Black Francolin	<i>Francolinus francolinus</i>	cl-Dr															
Blue-breasted Quail	<i>Coturnix chinensis</i>	ul-Ht															
Red Junglefowl *	<i>Gallus gallus</i>		cl-TY		cl-Th	cl-OU		ul-RG			ul-RE	cl-Lu					
RAILS, MOORHENS, COOTS	RALLIDAE																
Guam Rail @ #	<i>Rallus owstoni</i>	xR-FH rU-(introduced Dec 1989)															
White-browed Crane	<i>Porzana cinerea</i>	xR-Ht															
Common Moorhen * @	<i>Gallinula chloropus</i>		xR-BB		cR-OU	cR-OU						xR-TY					
Eurasian Coot	<i>Fulica atra</i>	vV-Ht			vV-Ha												
PLOVERS	CHARADRIIDAE																
Black-bellied Plover	<i>Pluvialis squatarola</i>	uV-SA	rV-PE			rV-Ht											
Lesser Golden-Plover *	<i>Pluvialis dominica</i>	aV-Kz	aV-Ba	uV-Ge	aV-Ha	aV-TY	hV-DN	cV-Ge		cV-Ge	uV-Ge	cV-TA	uV-Bo	uV-st		uV-Ge	
Mongolian Plover	<i>Charadrius mongolus</i>	cV-Ht	rV-PE		hV-Do	uV-PE											
Greater Sand-Plover	<i>Charadrius leschenaultii</i>	uV-WG	uV-Ge														
Snowy Plover	<i>Charadrius alexandrinus</i>	rV-Wa															
Common Ringed Plover	<i>Charadrius hiaticula</i>	rV-WG															
Little Ringed Plover	<i>Charadrius dubius</i>	rV-BW															
OYSTERCATCHERS	HAEMATOPODIDAE																
Eurasian Oystercatcher	<i>Haematopus ostralegus</i>	vV-MW															
STILTS	RECURVIROSTRIDAE																
Black-winged Stilt	<i>Himantopus himantopus</i>					rV-Ge											
SANDPIPERS, WADERS, SNIPE	SCOLOPACIDAE																
Common Greenshank	<i>Tringa nebularia</i>	rV-WG				rV-Ge											
[Nordmann's Greenshank] *** @	<i>Tringa guttifer</i>	hV-WI															
Greater Yellowlegs	<i>Tringa melanoleuca</i>		vV-Ge														
Marsh Sandpiper	<i>Tringa stagnatilis</i>	rV-Be		rV-Pr	rV-EO												
Common Redshank	<i>Tringa totanus</i>	rV-Wa															
[Spotted Redshank] ***	<i>Tringa erythropus</i>	hV-Je															
Wood Sandpiper	<i>Tringa glareola</i>	uV-Ou	rV-Ge	rV-PE	uV-Ge							rV-Ge					
Green Sandpiper	<i>Tringa ochropus</i>				vV-SR												
Wandering Tattler	<i>Heteroscelus incanus</i>	cV-Ht	uV-Ba		uV-Ea	uV-TY	uV-Ge	uV-Ge	uV-Ge	uV-Ge		uV-Ge	uV-Bo	uV-Ge	uV-Ge	uV-Ge	
Gray-tailed Tattler	<i>Heteroscelus brevipes</i>	cV-Kz	uV-Ea		uV-Do	cV-OU								uV-Ge			
Common Sandpiper	<i>Actitis hypoleucos</i>	uV-OU	uV-Ea		uV-OU			uV-Ge				uV-SR					
Terek Sandpiper	<i>Xenus cinereus</i>	rV-WG															
(Upland Sandpiper) **	<i>Bartramia longicauda</i>	(MW)**															
Little Curlew	<i>Numenius minutus</i>	rV-WG				rV-Ge											
Whimbrel *	<i>Numenius phaeopus</i>	cV-Kz	cV-Ea		uV-Ea	cV-St	hV-DN	uV-Ge		uV-Ge		uV-TA		uV-Ge			
Bristle-thighed Curlew	<i>Numenius tahitiensis</i>	rV-ki															
Far Eastern Curlew	<i>Numenius madagascariensis</i>	rV-Ht															
Eurasian Curlew	<i>Numenius arquata</i>	rV-BW															
Black-tailed Godwit	<i>Limosa limosa</i>	rV-je															
Bar-tailed Godwit	<i>Limosa lapponica</i>	uV-Ht															
Ruddy Turnstone	<i>Arenaria interpres</i>	aV-QG	cV-Ba		cV-Do	aV-OU		cV-Ge	cV-Ge	cV-Ge		cV-TA	cV-Bo	cV-Ge	cV-EI	cV-Ge	
[Great Knot] ***	<i>Calidris tenuirostris</i>	hV-BW															
Sanderling	<i>Calidris alba</i>	uV-Ht				rV-Ge											
Rufous-necked Stint	<i>Calidris ruficollis</i>	uV-WG	rV-Ba														
Little Stint	<i>Calidris minuta</i>					rV-Ge											
Temminck's Stint	<i>Calidris temminckii</i>					vV-Ge											
Long-toed Stint *	<i>Calidris subminuta</i>	hV-Ki				rV-SR											
Pectoral Sandpiper	<i>Calidris milanotos</i>	rV-WG		rV-PE	rV-Ge												
Sharp-tailed Sandpiper	<i>Calidris acuminata</i>	uV-Se	uV-PE														
Dunlin	<i>Calidris alpina</i>	rV-WG															
Curlew Sandpiper	<i>Calidris ferruginea</i>	rV-Wa															
Ruff	<i>Philomachus pugnax</i>	rV-As	rV-Ge														
Common Snipe	<i>Gallinago gallinago</i>	rV-BW	rV-SR														
[Pin-tailed Snipe] ***	<i>Gallinago stenura</i>		hV-PE	hV-PE													
[Japanese Snipe] ***	<i>Gallinago hardwickii</i>					hV-SR											
Swinhoe's Snipe	<i>Gallinago megala</i>	uV-Ht	uV-Ge		uV-PE	uV-Ge											
PRATINCOLES	GLAREOLIDAE																
Oriental Pratincole	<i>Glareola maldivarum</i>				rV-Ge											rV-Ge	
(Small Pratincole) **	<i>Glareola lactea</i>	(JE)**															
GULLS, TERNS, NODDIES	LARIDAE																
Common Black-headed Gull	<i>Larus ridibundus</i>	rV-je				rV-Ge											
Herring Gull *	<i>Larus argentatus</i>												hV-OU		rV-Ge		
Great-crested Tern	<i>Sterna bergii</i>	rV-DS	rV-MA														
Common Tern *	<i>Sterna hirundo</i>	uV-WG				rV-Ge											
Black-naped Tern *	<i>Sterna sumatrana</i>	rV-Dr	hV-DS														
Little Tern *	<i>Sterna albilfrons</i>	uV-MW	uV-Ge			uR-Mr											
Gray-backed Tern	<i>Sterna lunata</i>				uV-SR						cR-CH	uV-Le					
Sooty Tern *	<i>Sterna fuscata</i>	uV-Dr	uV-Ea	aR-Ea	uV-Ea	uV-Re	uV-PL	uV-RG	uV-Le		aR-CH	uV-RE		uV-Le	cU-Bk	uV-EI	rU-CH

Table 1 (continued).

		Island														
		GUA	ROT	AGU	TIN	SAI	MED	ANA	SAR	GUG	ALA	PAG	AGR	ASU	MAU	URA
Whiskered Tern	<i>Chlidonias hybridus</i>	rV-BW				uV-Ge										
White-winged Tern	<i>Chlidonias leucopterus</i>	uV-OU			rV-Ge	rV-Ge										
Brown Noddy	<i>Anous stolidus</i>	cR-OU	aR-OU	aR-Ea	uR-Ea	cR-OU	aU-re	uR-re	cU-re	aR-re	cU-re	cR-re	cR-OU	cU-YA	aR-EI	cR-re
Black Noddy	<i>Anous minutus</i>	rV-SA	uV-Ea	uR-Ea	uR-Ea	uV-OU	cR-re	uV-RG	uV-Le	aR-CI	uV-RE	uR-re	uU-Bo	uV-YA	aR-EI	
White Tern	<i>Gygis alba</i>	uR-HI	cR-Ba	cU-Ea	aR-Ha	cR-OU	cR-re	rU-re	uU-re	cR-re	aU-re	cU-OU	cU-OU	cU-YA	cR-EI	cU-re
DOVES, PIGEONS		COLUMBIDAE														
Rock Dove	<i>Columba livia</i>	ul-Br	ul-Ea		ul-Mr	ul-Ea						xl-CI				
Philippine Turtle-Dove *	<i>Streptopelia bitorquata</i>	cl-Kz	al-TY	ul-Da	al-TY	al-Ht	hl-DN									
White-throated Ground-Dove	<i>Gallicolumba xanthonura</i>	@xR-Du	cR-OU	cR-Ea	cR-TY	cR-OU	hR-PL	uR-CI	uR-Lu	cR-CI	uR-TY	cR-TY	uR-Le	rR-YA		
Mariana Fruit-Dove #	<i>Ptilinopus roseicapilla</i>	@xR-KZ	cR-OU	cR-Ea	cR-Ha	cR-OU										
OWLS		STRIGIDAE														
Short-eared Owl	<i>Asio flammeus</i>	rV-Dr			rV-QG	rV-Ge						rV-HA				
SWIFTLETS, SWIFTS		APODIDAE														
Island Swiftlet @	<i>Aerodramus vanikorensis</i>	rR-Kz	xR-OU	aR-Da	xU-Gz	cR-OU										
Fork-tailed Swift	<i>Apus pacificus</i>					rV-Ge										
KINGFISHERS		ALCEDINIDAE														
Common Kingfisher	<i>Alcedo atthis</i>	vV-BW														
Micronesian Kingfisher @	<i>Halcyon cinnamomina</i>	xR-Sw														
Collared Kingfisher	<i>Halcyon chloris</i>		cR-OU	cR-Ea	cR-DU	cR-OU			cR-Lu		cR-TY	cR-OU	cR-OU	cR-RO	cR-EI	
HOOPOES		UPUPIIDAE														
Hoopoe	<i>Upupa epops</i>					vV-SR										
SWALLOWS		HIRUNDINIDAE														
Barn Swallow	<i>Hirundo rustica</i>	uV-Ba	uV-Ge		uV-Mr	cV-Mr										uV-Ge
DRONGOS		DICRURIDAE														
Black Drongo	<i>Dicrurus macrocercus</i>	cl-Hn	al-ba													
CROWS		CORVIDAE														
Mariana Crow @ # *	<i>Corvus kubaryi</i>	rR-Kz	uR-OU	(Da)**												
OLD WORLD WARBLERS, FLYCATCHERS, THRUSHES		MUSCICAPIDAE														
Nightingale Reed-Warbler @ #	<i>Acrocephalus luscinia</i>	xR-Qg		rR-YA		uR-Ht					cR-TY	xR-OU				
Tinian Monarch @ # *	<i>Monarcha takatsukasae</i>			(Da)**	aR-Ty											
Guam Flycatcher @ #	<i>Myiagra freycineti</i>	xR-OT														
Rufous Fantail	<i>Rhipidura rufifrons</i>	@xR-Gr	cR-TY	cR-Ea	cR-Ha	cR-OU										
Dusky Thrush	<i>Turdus naumanni</i>														rV-Ge	rV-Ge
WAGTAILS, PIPITS		MOTACILLIDAE														
Yellow Wagtail	<i>Motacilla flava</i>		vV-Ge													
Gray Wagtail	<i>Motacilla cinerea</i>	vV-MW														
[White Wagtail] ***	<i>Motacilla alba</i>	hV-Wa														
STARLINGS, MYNAS		STURNIDAE														
Micronesian Starling *	<i>Aplonis opaca</i>	@uR-Ln	cR-Ya	cR-Ea	cR-TY	cR-OU	hR-DN	uR-CI	cR-Lu	aR-CI	aR-TY	cR-OU	cR-OU	aR-YA	cR-EI	
Ashy Starling	<i>Sturnus cineraceus</i>					vV-Ks										
HONEYEATERS		MELIPHAGIDAE														
Micronesian Honeyeater	<i>Myzomela rubrata</i>	@xR-KZ	cR-OU	cR-YA	cR-TY	cR-OU		cR-CI	cR-Lu	cR-CI	cR-TY	uR-OU	cR-OU	cR-YA	rR-CI	
WHITE-EYES		ZOSTEROPIIDAE														
Golden White-eye #	<i>Cleptornis marchei</i>			aR-Ea		aR-ot										
Bridled White-eye	<i>Zosterops conspicillatus</i>	@xR-KZ	uR-OU	aR-Ea	aR-Ya	aR-OU										
SPARROWS		PASSERIDAE														
Eurasian Tree Sparrow	<i>Passer montanus</i>	cl-Hn	ul-Pa		ul-Pa	cl-Pa										
MANNIKINS, SPARROWS		ESTRILDIDAE														
Chestnut Mannikin *	<i>Lonchura malacca</i>	ul-Hn				(TA)**										
Total resident native land/wetland birds		6	10	13	11	14	1	5	6	5	6	6	6	6	5	1
Total introduced land/wetland birds		7	6	1	4	4		1			1	1				
Total breeding seabirds		4	6	8	6	7	8	5	5	10	4	7	6	7	8	8
Total migrant/vagrant birds		76	36	7	25	85	4	10	9	10	7	25	9	12	7	9
Total current known bird species		93	58	29	46	109	13	21	20	25	18	39	21	25	20	18
Total extinct native birds		12	2		3	1						2	1			
Total hypothetical		12	2		3	1	6			1	1	5	1	1	1	2



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Division of Fish and Wildlife

## HELP NEEDED FOR PHONATHON 15 AND 16 JANUARY

As part of our annual fundraising campaign, we will be calling O'ahu members on Tuesday, 15 January and Wednesday, 16 January. HMSA is assisting us once again by kindly making its phones available. Calls will be made from 6:00 P.M. to 9:00 P.M. and dinner will be served prior to the event. We need your help in seeking pledges from members. Call Lynne Matusow at 531-4260 if you can make telephone calls.

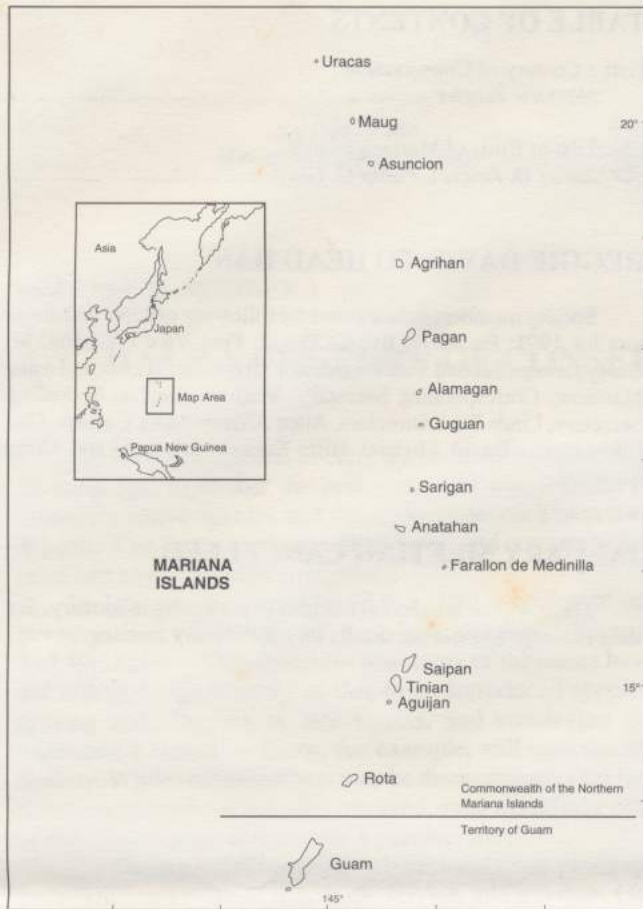


Figure 1. Map of the Mariana Islands.

**AND MAHALO TO VOLUNTEERS**

We thank the following members who worked on our special fundraising appeal, ballot, and dues renewal mailing: Celeste Griswold, Larry Kimmel, Deanna Lee, Marion McLaren, Christi Moore, Pat Patterson, Synthia Tang, and Marjorie Ziegler.

**HAWAII AUDUBON SOCIETY STICKER**

Three inch round bumper stickers depicting the 'Elepaio (see logo on page one) are available free of charge at the office or by sending a self-addressed stamped envelope to Sticker, Hawaii Audubon Society, 212 Merchant Street, Suite 320, Honolulu, HI 96813.

**ENVIRONMENTAL DIRECTORY AVAILABLE**

The Hawaii Audubon Society recently published the *Hawai'i Green Pages*, a directory compiled in celebration of Earth Day 1990. The directory lists over 150 environmental efforts in Hawai'i. For a free copy, send a self-addressed stamped #10 envelope to Directory, Hawaii Audubon Society, 212 Merchant Street, Suite 320, Honolulu, HI 96813.

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**MAHALO TO CONTRIBUTORS**

The Hawaii Audubon Society wishes to thank the following members and friends for their generous contributions. This list reflects donations received through 12 December 1990.

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**CALENDAR OF EVENTS**

- Jan. 13 Field Trip: 'Ihi'ihilauakea Nature Conservancy Preserve. Casey Jarman will lead this 2-mile hike (3-4 hours) which features the Hawaiian plant *Marsilea villosa*; vernal pool, primitive tadpole shrimp (if flooded); possibly seabirds, marine mammals, and sea turtles. Hiking shoes, hat, sunscreen, binoculars, camera, and water are recommended. Meet at the State Library on Punchbowl Street at 7:30 A.M. or the Hanauma Bay Parking Lot at 8:00 A.M. Call M. Casey Jarman for details, 949-1943 (hm), 956-7489 (wk).
- Jan. 15 Phonathon, details inside.
- Jan. 26 HAS Board Meeting, 7:00 P.M. Call Reggie David, 329-9141 (hm) (Hawai'i)
- Feb. 17 Field Trip: Kaena Point Natural Area Reserve. M. (Sun.) Casey Jarman and William Gilmartin will lead this 3-4 hour hike which features native plants, whales, and birds. Meet at the State Library on Punchbowl Street at 7:30 A.M. or Kaena Point at 9:00 A.M. Hiking shoes, sunscreen, binoculars, lunch, and water are recommended. Call M. Casey Jarman for details, 949-1943 (hm), 956-7489 (wk).
- Mar. 17 Field Trip: Kilauea Point National Wildlife Refuge, pre-registration required, see February 'Elepaio for details.

**TABLE OF CONTENTS**

Half a Century of Conservation  
*Marjorie Ziegler* ..... 1

Checklist of Birds of Mariana Islands  
*James D. Reichel, Philip O. Glass* ..... 3

**REGGIE DAVID TO HEAD HAS**

Society members have elected the following officers and directors for 1991: President, Reggie David; First Vice President, M. Casey Jarman; Second Vice President, Phil Bruner; Treasurer, Lynne Matusow; Corresponding Secretary, Marjorie Ziegler; Recording Secretary, Linda Paul; Directors, Allen Allison, Mark Caspers, Carl Christensen, David Michael Hill, Kersten Johnson, and Craig Rowland.

**JANUARY MEETING CANCELLED**

There will be no general membership meeting in January. See the February 'Elepaio for details on the February meeting.

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