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## SEA TURTLE CONSERVATION

By George H. Balazs\*\*

Recent information relating to the conservation of sea turtles can be divided into three topics. These are (1) the November 1974 task force meeting held by the International Union for Conservation of Nature (IUCN); (2) the efforts to have the Federal government extend protection to the green (Chelonia), loggerhead (Caretta), and Pacific ridley (Lepidochelys olivacea) sea turtles under provision of the U.S. Endangered Species Act of 1973; and (3) my own personal attempts to slow the commerce in sea turtle products by directing correspondence to specific businesses and individuals. Each of these topics will be separately discussed.

1. IUCN Task Force Meeting: During November 22-24, 1974, a meeting of a specially constituted task force was convened in Miami, Florida, by the International Union for Conservation of Nature (Switzerland). In recent years the Survival Service Commission (SSC) of the IUCN has become increasingly concerned over the rapidly expanding trade in sea turtles and their products. Therefore, the purpose of the task force meeting was to review the commercial exploitation of sea turtles, and to give special attention to the state and implications of turtle culture. Invited members in attendance included Professors Archie Carr\* and Tom Harrison\*, Co-Chairmen of the SSC Marine Turtle Specialist Group; Dr. D. Ehrenfeld, USA; Dr. G. Hughes\*, South Africa; Mr. G. Balazs\*, USA; Dr. H. Hirth\*, USA; Dr. N. Mrosovsky, Canada; Dr. P. Pritchard\*, USA; Dr. L. Brongersma\*, Netherlands; Mr. G. deSilva\*, Malaysia; Dr. W. King\*, USA; and Mr. A. Mence\*, IUCN/SSC Executive Officer. Following the meeting in Miami, a number of the members (\*) proceeded to Grand Cayman Island in the British West Indies to meet with the Directors and staff of Mariculture, Ltd. Mariculture, Ltd. is a commercial operation that has been engaged in the culture of green turtles and the marketing of products on a world-wide basis. The formal results of these meetings took the form of a statement of 'Principles and Recommendations'. During April 1975 these 'Principles and Recommendations' were issued by the IUCN as official conservation guidelines for sea turtles.

IUCN PRINCIPLES AND RECOMMENDATIONS (Reprinted from the IUCN BULLETIN, April 1975)

1. Because the majority of the distinct populations of Chelonia (green turtles) are extinct, threatened or rapidly declining, the entire group should be considered endangered.
2. The reasons for the extinction and decline of populations include particularly exploitation for meat, hides, eggs and other products (including souvenirs), massive killing of turtles in the trawl nets of fishing fleets as well as increasing habitat destruction and disturbance.
3. The situation has become even more critical with the expansion of international commercial trade in sea turtles and their products.
4. As regards trawling, urgent attention should be given to encourage the use of nets designed to minimize undesirable catches of turtles, and research into this question should be given funding priority.
5. As regards souvenirs, the taking and preparing of turtles and turtle products for the primary purpose of souvenirs should be strongly discouraged.
6. As regards primary exploitation (meat, hides, eggs), where it can be demonstrated

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that local turtle populations can tolerate exploitation, and the desire or necessity is present, this should be done only by peoples traditionally dependent on them, with methods ensuring minimal waste and for local utilization. The diversion of wild sea turtle resources from traditional use by local people, or the expansion of that use, to satisfy or extend the demands of international commerce, is condemned.

7. It is emphasized at this point that there is a distinction between turtle farming and turtle ranching; a turtle farm implies that the unit is completely independent of wild stocks; a turtle ranch is a unit dependent on wild populations for eggs or turtles with the animals kept in varying degrees of captivity (H. Hirth, FAO Fisheries Synopsis No. 85, "Synopsis of Biological Data on the Green Turtle", December 1971).

8. Further, in recognition of the deteriorating energy and food resources of the world, it is advocated that wherever possible any turtle culture be maintained at the lowest applicable trophic level.\*

9. Farming objectives which lead to the expansion of existing markets resulting possibly in an increased exploitation of wild turtles are unacceptable. However, it would be consistent with the foregoing principles to accept turtle farming whose products will replace wild turtle products in existing traditional markets. The acceptability of any farm should be demonstrated by suitably designed and independently evaluated tests and data. Moreover, those ranching endeavours satisfying the above conditions and which can be shown not to harm wild turtle populations are also acceptable.

10. Funds should be provided for the preparation of informative pamphlets to promote the application of the foregoing principles and immediate measures should be taken to ensure the early implementation of such action as is necessary to conserve the marine turtle resource in accordance with these principles.

11. Nearly all the considerations stated for Chelonia may be applied with equal force to populations of the six other species of marine turtles.

\*All organisms are classified as producers, primary consumers (herbivores), secondary consumers (carnivores), or decomposers according to the place they occupy in the food chain of an ecosystem. This placement is termed 'trophic level'. Therefore, herbivorous species should subsist on a diet based on plant protein and carnivorous species on animal protein.

The IUCN now recognizes the green turtle (as well as the other kinds of sea turtles) as being "endangered" with extinction. This classification will appear in the next updating of the organization's RED DATA BOOK. Although the action carries no legal power, many nations respect the policy decisions of the IUCN and, therefore, are likely to be favorably influenced in formulating their own conservation laws. Hopefully, the United States will be among those nations.

In view of the often conflicting publicity that has appeared in Hawaii and other areas about the conservation merits and state-of-the-art of commercial turtle culture (specifically Mariculture, Ltd.), perhaps it would be beneficial to provide further information on this subject. Mariculture, Ltd. was mentioned in the July 1975 issue of THE ELEPAIO (p. 7). For the past few years I have been critical of many of the conservation claims made by proponents of what I call "premature commercial turtle culture". Based on my own research, along with information supplied by other workers, it seemed apparent that sufficient biological control (e.g. reproduction, nutrition, disease) did not presently exist to warrant commercial production. It has been the belief of many conservationists and researchers that to go into commercial production and marketing before solving the basic problems would only result in an increased drain on naturally occurring turtle populations. This point was brought out by Professor Carr in the AUDUBON article "Great Reptiles, Great Enigmas" (March 1972). In addition, Dr. Ehrenfeld systematically analyzed the turtle culture problem in the AMERICAN SCIENTIST article "Conserving the Edible Sea Turtle: Can Mariculture Help?" (Jan-Feb 1974). My November 1974 visit to Mariculture, Ltd. as a member of the IUCN task force was the second time I had toured the facility and discussed problems with company officials. My first visit took place during January 1974 following a scientific conference on aquaculture which I attended in South Carolina. The Mariculture, Ltd. portion of the trip was made at my own expense in an effort to personally determine what level of expertise existed, and how this expertise related to the conservation of naturally occurring sea turtle populations. My own initial findings were in close agreement with the overall findings of task force members in November 1974. The following points were set forth in the report that was

filed covering our visit and meeting with the Directors and staff of Mariculture, Ltd.

Task force members agreed:

- a) that Mariculture, Ltd. has made claims and statements which are misleading and demonstrably incorrect;
- b) that this has resulted in unjustifiably favorable impressions in some quarters regarding its operations to date, and in some others in grave suspicion about its integrity;
- c) that reconciliation of the conservation ethic with business efficiency in the company's policy therefore remains to be demonstrated;
- d) that no long-term operational planning projection has been made;
- e) that the viability of its turtle culture operation has yet to be proved, as indeed has that of turtle farming in general.

For these reasons alone the task force members were unable to regard the operations of Mariculture, Ltd. as making a positive contribution to the conservation of the green turtle.

This notwithstanding, the task force members noted:

- a) that Mariculture, Ltd. has recognized the harm done by its misleading publicity and has agreed to withdraw remaining inaccurate publications and to ensure that all future publications are scientifically accurate;
- b) that the company has developed plant and installations on a considerable scale;
- c) that research programs, one being of outstanding scientific merit, are in varying stages of development, and that facilities are also made available by the company to private research workers;
- d) that the Directors of Mariculture, Ltd. have stated categorically that they wish to maintain frank and open dialogue with the IUCN concerning all aspects of the company's operations in order to ensure compliance with conservation requirements.

Task force members expressed concern:

- a) that Mariculture's present practice of taking "doomed" eggs might become an established part of the operation, thus perpetuating ranching rather than farming and also encouraging an extension of the definition, and by implication the range of occurrence, of so-called "doomed" eggs;
- b) that Mariculture's known interest in establishing operations in other parts of the world has implications which cannot be assessed in the lack of any long term operational planning projection, and which carry inherent dangers of accelerated gene movement between oceans;
- c) that the requirement for profitability can easily result in a disregard of inconvenient conservation considerations, particularly in regard to promotion of markets;
- d) that the present culture operations depend on a nutritional regime at a higher trophic level than that naturally applicable.

Task force members therefore recommended:

- a) that the present operations of Mariculture, Ltd. can not be regarded as being in the conservation interests of the green turtle;
- b) that recognition be given to the efforts made by Mariculture, Ltd. in developing turtle/techniques and for its expression of intent to ensure that such development conforms to conservation principles; \*culture
- c) that Mariculture, Ltd. be informed of these principles, and of the IUCN's readiness to review the company's operations when convinced that they are, and are likely to continue to be, in conformation with those principles;
- d) that Mariculture, Ltd. be informed of the IUCN's pleasure at the company's assurance of frankness concerning all aspects of its operations, and of the IUCN's expectations of receiving practical demonstrations of this assurance by being kept posted about future plans, recognizing that new activities or significant extensions of present ones initiated without previous notice will be regarded as a breach of such assurance and therefore as grounds to doubt the company's integrity of purpose.

A final point worth mentioning on this matter is that during May 1975 Mariculture, Ltd. went into receivership due to financial problems. I do not know what the receiver's future course of action will be; however, I am concerned about the fate of the remaining captive turtles. I have been informed that a West German soup manufacturer may seek to obtain a controlling interest.

2. Efforts to Obtain Federal Protection: Presently, three kinds of sea turtles are on the U.S. List of Endangered Fauna. Included are the hawksbill (Eretmochelys), the

leatherback (Dermodochelys) and the Caribbean or Atlantic ridley (Lepidochelys kempii). Along with other restrictions, the "endangered" listing prevents animals and their products from being legally moved across U.S. borders or transported in interstate commerce. The intent of this prohibition is to help protect wildlife from the destructive forces of commercialization in the United States. In spite of the availability of excellent imitations, the United States continues to be a major market for genuine wildlife products. As long as people will buy, or are permitted to buy, the world's sea turtles and other vanishing species will continue to be killed for the price they bring. The green, loggerhead and Pacific ridley sea turtles should therefore be afforded Federal protection in view of knowledge of their status and survival outlook. Efforts to have these turtles listed in the United States as "endangered" have been formally in progress for as long as 22 months. Governmental delays that have been, and continue to be, experienced in this matter are both inexcusable and discouraging to sincere, rational conservationists. A review of the history of this case is therefore warranted.

On December 28, 1973, the U.S. Fish and Wildlife Service published a proposal in the FEDERAL REGISTER to classify the green and loggerhead sea turtles as "endangered". In this Proposed Listing it was stated that evidence was on file in Washington, D.C. which showed that the turtles were threatened with extinction due to one or more of the following conditions: (1) the destruction, drastic modification, or severe curtailment, or the threatened destruction, drastic modification, or severe curtailment of habitat; (2) overutilization for commercial or sporting purposes; (3) the effect of disease or predation; (4) other natural or manmade factors affecting continued existence. Interested persons were given 60 days to make comments. Along with many others, I presented evidence in support of this Proposed Listing. For reasons that are still not entirely clear to me, no further action was ever taken on this proposal. On April 23, 1974, Dr. Wayne King, acting on behalf of the New York Zoological Society, petitioned the Department of the Interior under provisions of the Endangered Species Act to list the green turtle as "endangered", and the loggerhead and Pacific ridley as "threatened". A substantial amount of supportative information and data were filed along with this petition in order to supplement the evidence already on file in Washington, D.C. On August 16, 1974 (nearly four months later) a notice appeared in the FEDERAL REGISTER, but not for a Proposed Listing of these species as might logically have been expected. Instead, the notice called for a review of their status in order to determine whether there was sufficient evidence to warrant a Proposed Listing. Thirty days were given to submit testimony, and once again numerous researchers, myself included, offered evidence of the populations' decline. At this point, it is perhaps significant to note that the Review of Status notice in the FEDERAL REGISTER was issued jointly by the U.S. Fish and Wildlife Service (Department of the Interior) and the National Marine Fisheries Service (Department of Commerce). Previously, the Fish and Wildlife Service alone held jurisdiction over sea turtles. However, internal bureaucratic arrangements were made so that responsibility for sea turtles would be shared equally between these two agencies. The advantages of this transference of power have yet to be realized by the sea turtles. Regardless of the internal factors involved, the publication of a Review of Status notice, rather than a Proposed Listing, could only be viewed as an attempt to further delay the issue. The attempt was successful. Nine months passed before the Fish and Wildlife Service and the National Marine Fisheries Service acted further. On May 20, 1975, a Proposed Listing was finally published in the FEDERAL REGISTER. The proposal called for a listing of all three species as "threatened" instead of placing the green in the "endangered" category as called for in Dr. King's petition. However, proposed regulations were set forth that would prohibit taking, importing, exporting, and interstate transportation and sale, except as specifically outlined as exempt by permit. Another period (60 days) for comments, views and objections followed. I was generally satisfied with the proposed regulations. With respect to the ban on taking, I made the following statements in my written comments to Washington on July 3, 1975: "Although some subsistence taking of green turtles still occurs in Hawaii, I nevertheless must endorse the total ban of such activity, at least for the present time. As suggested (in the FEDERAL REGISTER notice) numerous alternate food sources are available from the sea and, based on my knowledge of the Hawaiian green turtle population, continued killing cannot be justified if viability is to be ensured. Recent protective measures enacted by the State of Hawaii must be regarded as less than optimal and extremely belated. Comprehensive investigations are needed on those animals utilizing

feeding pastures around the major inhabited Hawaiian Islands. The results of such studies are absolutely essential to the formulation of a harvesting plan for subsistence or any other purposes. Unfortunately, the State has not yet seen fit to commit specific research funds to study its own native green turtle resource. Given the dismal history of exploitation and habitat destruction of Hawaii's turtles, continued taking in the absence of an ecologically sound management plan may very well result in the total elimination of this unique land basking Chelonia population."

Fortunately, not all conservationists were as satisfied as I was with some of the exceptions provided in the proposal. One of the objections raised by Dr. King dealt with the exception that allowed the drowning of turtles in trawl nets if such killing occurred incidental to fishing or research activities. Statements in the testimony that Dr. King provided on this subject were most convincing: "The use of the term "Incidental Catch" is unacceptable because it permits the continued killing of Threatened Species as long as that killing is secondary to the primary purpose of the fishing activity. The incidental killing of tens of thousands of individuals of some species of porpoise by tuna fishermen is permitted by the National Marine Fisheries Service (NMFS) despite provisions of the Marine Mammal Act which require reduction of this killing to levels approaching zero. This acceptance by NMFS of a frequent, predicable and non-accidental killing of porpoises under the provisions of an incidental catch has set a dangerous and intolerable precedent. To further appreciate the magnitude of the problem one only has to look at the lack of protection presently afforded the Atlantic or Caribbean ridley sea turtle (Lepidochelys kempii). This species is nominally protected by both the Mexican and U.S. governments as an Endangered Species, yet, the single most important factor in the present decline of the species is probably the drowning of specimens caught in shrimp trawls in the northern Gulf of Mexico (the Texas, Louisiana, Mississippi, Alabama and Florida Gulf coasts). Regulations have been imposed by both governments on the deliberate taking of Caribbean ridleys on nesting beaches and in coastal waters, but neither government has regulated the frequent incidental killing of the turtles on their feeding grounds, the shallow northern Gulf waters. Knowing the NMFS demonstrated reluctance to interfere with established fishing practices, we must assume that the feeding habitat of the Caribbean or Atlantic ridley will never be designated "Critical Habitat". We can also assume that the green, loggerhead and Pacific ridley turtles will be afforded no greater protection, no real protection, under the proposed "Incidental Catch" regulations. To correct this shortcoming of the regulations, we suggest (the section) be amended to read: Incidental and infrequent catch. The incidental and infrequent catch of such wildlife during fishing or research activities conducted at sea shall not be prohibited provided: 1) The specimen was caught by fishing gear incidental to fishing effort or research not directed toward such species, and provided that such incidental catching is infrequent or rare of occurrence, not recurrent, repetitious or repeated; and We further suggest it would be appropriate to set some measure of frequency above which the taking becomes more than incidental and infrequent. After reviewing actual catch records of trawls operating on feeding grounds and off rookery beaches it should be possible to state that catching one turtle in ten, twenty, or fifty trawl drags constitutes non-incidental or frequent catches and violates the prohibitions set forth in the regulations. We do not think it appropriate to permit the killing of one turtle for every couple of tons of shrimp as was done with porpoises and tuna. Enforcement of such a provision would be no more difficult than would be enforcement of the proposed regulation."

Although several other suggestions were also made by Dr. King, it was indicated that, on the whole, the New York Zoological Society supported and welcomed the long overdue proposed regulations.

Certainly it appeared as if Federal protection for these sea turtles was about to become a reality. Only it wasn't. On August 20, one month after the close of the most recent comment period, the National Marine Fisheries Service unilaterally issued a notice in the FEDERAL REGISTER. This notice stated that it would now be necessary to hold a public hearing (in Washington, D.C.) in order to obtain views and comments on the proposal. The hearing was granted following a request by Mr. Robert Nordstrom of the National Cannery Association. Canned sea turtle products are a lucrative business in the United States. The date for the hearing was set for December 3, 1975; however, the notice indicated that problems encountered in the preparation of a draft environmental impact statement might result in further delays. As predicted, on November 14 the National

Marine Fisheries Service announced that the hearing was being rescheduled for February 25, 1976. In the meantime, the destruction of remaining populations of green, loggerhead and Pacific ridley sea turtles continues to take place.

3. Personal Attempts to Slow Commerce in Sea Turtles: The Hawaii regulation (Fish and Game No. 36) which prohibits the sale of green turtles has been interpreted by State officials as covering only those animals taken from Hawaiian water. It is regrettable that we have not yet become responsible enough to protect the world's other declining turtle populations from our commerce here in Hawaii. While waiting for this protection to arrive from the Federal level, I have attempted to slow down all commercial dealings in sea turtle products that have come to my attention. One method used is to express my displeasure through written correspondence to businesses that purvey such items. In some cases, the establishments have simply not been aware of the turtles' survival status, or the Federal laws protecting three of the species. In other cases, the profits from these items are apparently too attractive to warrant even a letter of reply, let alone responsible and cooperative action from the owners or managers. An excellent example of each case occurred when I wrote to a number of local restaurants a year and a half ago explaining the situation and asking for a voluntary halt to the selling of Hawaiian green turtle steak. This was, of course, before the State regulation went into effect in May 1974. Fisherman's Wharf, one of the largest sellers of turtle steak, terminated all sales five to six months before the legal ban. In sharp contrast, the Chart House, Pineapple Hill (Maui) and several other restaurants continued selling turtle steak not only up until the deadline, but also for months afterwards using meat that reportedly had been stockpiled in their freezers. Nevertheless, the overall number of positive responses to the various letters I have written has been most encouraging and a credit to the business people of Hawaii who have a sense of responsibility.

Summary of Some Letters and Responses

<u>Sent to/Reason</u>	<u>Response/Action Taken</u>
1. J.C. Penny, Ala Moana Center, 9/74 (turtle shell jewelry)	Telephone call received from store manager-- items immediately removed from store
2. Liberty House, Ala Moana Center, 12/22/74 (turtle skin purses)	Letter received from President of company-- sale of items stopped
3. Shelpers, Inc. (mail order company in Kansas and Oklahoma), 12/26/74 (turtle skin boots)	No response--items still on sale; second letter sent to Enforcement Agents of U.S. Fish and Wildlife Service
4. Mrs. Betty Ford, 4/20/75 (turtle soup on White House menu-- popularized in VOGUE magazine article)	Short letter from Social Secretary--to my knowledge, no corrective action taken
5. Shirokiya, Ala Moana Center, 9/30/75 (turtle skin purses)	No response--items still on sale
6. The Pocketbook Man, Ala Moana Center, 10/16/75 (turtle skin purses)	Letter received from President of company-- no corrective action to be taken, items still on sale

Also, an interesting letter was received from Atlantic Commodities Limited, Nova Scotia, March 11, 1975: ...Your name was given to us by the local fisheries as a possible commercial source of frozen turtle meat. We would appreciate your advising if there are any commercial freezing plants in your area, pack quantities of this material, together with a full description of species, pack, and if possible a price CIF San Francisco or Vancouver. ...

I gave the following reply to this ironic inquiry, April 7, 1975: ...Please be advised that no commercial supply of frozen turtle meat exists in Hawaii. Our indigenous green turtle (Chelonia sp.) population has been reduced substantially due to commercial exploitation and, fortunately, such activity was legally halted last year. As you are undoubtedly aware, similar destructive trends have occurred in most other sea turtle populations around the world. By the content of your letter, I must assume that your company represents a negative conservation factor, in that such inquiries and purchases can only serve to hasten the animal down the road to extinction. Perhaps the enclosed article by Dr. Carr will give you a greater insight into the problem and, hopefully, cause you to phase out your line of turtle products. ...

Greater progress in stopping the commercialization of vanishing wildlife would undoubtedly result if more concerned individuals would take the time to express their

views to the businesses involved. Besides sea turtles, there are a host of other species being sold down the road to extinction right here in Hawaii today. Such products include: whale and elephant ivory (scrimshaw and carvings); tiger's teeth (jewelry); sea lion leather (belts); furs; and lizard and snake skins (purses and shoes). Recently I even saw the "stuffed" legs of small crocodiles being sold in Waikiki for key chains. Is there no end to Man's "war" against the creatures of the wild?

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Testimony on bills relating to the preservation of green sea turtles in Hawaiian waters: SB 1530-74 and HB 1635, HD 1; to Chairman Kenneth F. Brown, Ecology, Environment and Recreation Committee; from President Wayne C. Gagne; 27 February 1974

The Hawaii Audubon Society supports the intent of both these bills.

SB 1530-74 would establish an hiatus on the taking of the green sea turtle. In view of the dwindling number of this species in Hawaiian waters as a consequence of human exploitation and in view of the steps now being taken by the Federal Government to designate the green sea turtle as an endangered species throughout its range, this bill is most appropriate. We believe that there is sufficient evidence to demonstrate that even the taking of turtles only for home consumption is jeopardizing its survival. The monetary penalty needs to be considerably above that which one could obtain for the meat of one turtle.

Regarding HB 1635, HD 1, we have qualms about the advisability of encouraging an industry based on mariculture--the commercial rearing of turtles--at this time. Firstly, mariculturists have not been sufficiently successful in inducing turtles to complete their life cycle totally in captivity--from egg laying to egg hatching--without having to resort to detrimentally drawing upon dwindling wild stocks. Secondly, until mariculturists demonstrate an ability and willingness to raise turtles on a sufficiently large scale to depress prices well below that which would make the marketing of wild specimens unprofitable, the incentive to black-market wild turtles will still be a significant factor in their survival. If turtles are reared and liberated from captive stock, these should be permanently marked so as to avoid confusing them with wild individuals.

We could support a carefully planned pilot program which would initially look closely at mariculture ventures with green sea turtles on a world-wide basis, with the points we have raised in mind, before "breaking ground" here in Hawaii. ...

SB 1530, introduced by Senator Mason Altiery, would impose a moratorium on taking turtles. HB 1635, introduced by Representative Anson Chong, would release up to \$35,000 for research and management studies on the turtles. FAILED TO PASS/

The State Division of Fish and Game announced that Regulation 36 became effective 30 May 1974. REGULATION 36: Relating to the Protection of Marine Turtles

Section 1: It shall be unlawful to mutilate, injure, take, kill, possess, disturb, sell or offer to sell leatherback turtles (Dermochelys sp.), hawksbill turtles (Eretmochelys sp.) and green sea turtles (Chelonia sp.) or any parts thereof or the eggs or nests thereof from or within the State of Hawaii and waters subject to its jurisdiction, except as provided in Section 2 and 4 of this regulation.

Section 2: It shall be lawful with a permit issued by the Board of Land and Natural Resources to: (a) take or possess marine turtles or their eggs for scientific, educational or propagational purposes; (b) take or possess green sea turtles for home consumption from the waters surrounding the eight major islands (Hawaii, Maui, Kahoolawe, Lanai, Molokai, Oahu, Kauai and Niihau) provided that the upper shell length is 36 inches or more (straight line measurement) and provided further that the turtle may be gutted and/or cut up into not more than five parts with one of the parts being the whole upper shell with the entire head attached and all parts shall be kept together until the permittee leaves the shore area for his home; (c) possess or sell the eggs or offspring of captive green sea turtles or products thereof; (d) possess with intent to sell marine turtles or products thereof acquired prior to the effective date of this regulation.

Section 3: It shall be unlawful to use nets for the taking of green sea turtles.

Section 4: Nothing in Section 1 shall be construed as making it unlawful for any person to possess for purposes other than sale marine turtles or products thereof acquired prior to the effective date of this regulation.

Section 5: Any person violating the provisions of this regulation shall be fined not more than \$500 as provided in Section 187-20, Hawaii Revised Statutes.

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## BIRDING IN NEW ZEALAND

## Trip to Miranda

By Walter R. Donaghho

February 5, 1971: Was on the 9 a.m. railway bus to Papekura, where I had made arrangements with Ross McKenzie for a trip to Miranda, the rich birding area on the shores of the Thames Estuary, south and west of Clevedon, where he resides. I drew in to the depot at ten, and a half hour later his car, driven by John Brown, with Ross in the passenger's seat, drove up. Soon we were speeding south through the brown-green rolling hills and farm country.

I noticed few sheep, and asked where they all were.

"Not much profit in sheep these days around here," I was told. "They are farther south."

Dairy cows are raised in this area, close to Auckland, these days.

Once we went through vegetable gardens that were grown by Indians, not here in '43. Neither were the Yugoslavs, growing vineyards on the road to the Coast.

We came up to the Coast and proceeded along through weedy, grassy pasture, just behind the beaches, until we got to a gate in the fence and drove in. The dirt road ran out to several shallow pans, surrounded by bars of shells, mostly clams.

Skylarks sang loudly around us in the pastures. I could see birds dotting the largest pans, which Ross said were Wrybill plovers. Through binocs, they showed up as grey, white below, with black bills. The curve to the right was not plain at this distance. The largest birds, over four times as big, had very long straight bills that they plunged deep into the mud. These were Pacific godwits. In '43, all I saw was a distant flock of them, which took off soon after we got there.

Three Pied stilt fed in a small pond nearby, and I crawled up to a log at the edge of the pan to get telephoto shots of them (which came out beautifully).

John suggested we walk out to the main beach. As we approached, we could see a large flock of Wrybills sitting on the beach at the outer edge of the pan.

"Go up slowly," John said. "Allow them to get used to you. They are very tame, and won't flush."

We did, and I found I could get within 20 yards of them. They got a bit nervous, and walked away about a yard, then stopped, and looked at us. I was easily able to photograph them, to my heart's content, taking all the time I needed.

The beach curved around ahead to a point, on which sat a large flock of Godwits and another flock of Knots, only half as big. Both Godwits and Knots were in every stage of plumage from summer to winter, and a number had the bright red breasts. A pair of Caspian terns were among the birds. Another pair was on a point in the opposite direction. Between the Godwits, Knots and <sup>the</sup>Wrybills sat a flock of Oystercatchers, which flew up as we approached, not nearly as tame as the Wrybills.

A large Pied shag flew over once, exposing its clean, white underparts. There were Black shags on perches offshore, and on the beach down the coast, where a number of White-faced herons also fished at the water's edge.

Two New Zealand dotterels were atop the ridge of shells at the edge of the large pan, inland from the point. I stalked them, but they flew up. I was able to photograph one of them later.

Three immature Gannets flew by offshore. "They should be on their way to Australia by now," John said.

Three kinds of gulls were about, the Black-backed, the Red-billed, and the Black-billed. I also saw 3 Black-fronted terns offshore.

We had lunch, I sharing a sandwich with a flock of Red-billed gulls that were attracted to me, and we drove south to the Miranda Estuary, where we drove in past an old, weather-beaten shack to a large pan just makai. This was dotted with over 2000 Wrybills. Just makai was a large flock of over 1000 Godwits, and at least 1500 Pied stilts sat on the shelly beach on the seaward edge of the pan.

We sat down 20 yards away from the Wrybills, and looked for other shorebirds sitting with them. We found at least 17 Curlew sandpipers, 5 Stints, a Banded dotterel in splendid breeding plumage, a Sand dotterel, and later when the birds were on the wide shell bar on the seaward edge, a Ringed plover, a very occasional record here.

A pair of Little terns flew down on the other side of the flock and strutted around each other. Once we spotted a tern with the summer black cap; the pair's caps were white,



with black edges, the winter cap.

As we left the area about four, Ross indicated Banded dotterels to the left. Scattered over the shelly ridges nearby were at least 20 birds in every phase of plumage change from winter to breeding.

List of birds for the day: Old Limeworks Site: Wrybill, 500+; Pacific godwit, 500+; Knot, 200+; Pied oystercatcher, 120; Red-billed gull, 55; Black-billed gull, 52; Pied stilt, 100+; Black-backed gull, 15; White-faced heron, 10; Caspian tern, 4; Black-naped tern, 3; Black shag, 5; Ruddy turnstone, 20; New Zealand dotterel, 4; Australian gannet, 3 immatures, Large pied shag, 1. At Miranda Estuary: Wrybill, 2500+; Pied stilt, 1500+; Pacific godwit, 1000+; Pied oystercatcher, 500+; Knot, 200+; Curlew sandpiper, 17; Banded dotterel, 21; Little stint, 6; Large sand dotterel, 1; New Zealand dotterel, 1; Little tern, 3; White-fronted tern, 3; Caspian tern, 2; Ringed plover, 1; Black shag, 5; Mallard, 3; Western sandpiper(?), 1.

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FIJI TIMES, 11 November 1975: Goshawk Protected (Contributor: Noel L.H. Krauss)

Fiji's only true hawk, the Fiji Goshawk, is now a protected bird. ...The Birds and Game Protection Ordinance has been amended to exclude the goshawk from the list of unprotected birds. There is no list of protected Fiji birds. Only birds on the unprotected list may be hunted and killed. An ornithologist at the Fiji Museum, Mr. Fergus Clunie, said the Fiji Goshawk was unique to this country and was previously the only native bird with no legal protection. He said the species was in no danger at the moment but it was wise to give the goshawk protection. ...Birds of prey in other parts of the world had shown a drastic decline because of the use of agricultural pesticides. Mr. Clunie said this problem existed to some extent in Fiji, particularly with pesticides used in rice growing areas. But he said it was not serious as most of the pesticides used broke down fairly quickly. The general policy throughout the world was to protect birds of prey as they were especially prone to pesticides. They fed on small birds affected by the pesticides and built up a lethal dose in their own system. Mr. Clunie said the goshawk was not a major economic nuisance, although it did take some poultry.

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Field Trip to Kilauea Forest Reserve, Big Island, 4 October 1975 by Larry Katahira

Many thanks to Bishop Estate and Parker Ranch for allowing our group access to Kilauea Forest Reserve.

Before we finally departed the Visitor Center at Hawaii Volcanoes National Park it was about 5:30 a.m. As our group of 16 drove through Keauhou Ranch, introduced birds such as the Mynah, Cardinal, Ricebird, House Finch, White-eye, Skylark, and Pheasants were seen in the pastureland. Golden Plovers, 'Amakihi, 'Apapane, and 'I'iwi were also seen from our jeeps.

Our first stop was in the ranch at approximately 5960 feet elevation about one-half mile west of the IBP site. Above us we saw Nēnē in flights of 4 and 5. We walked a couple hundred yards into a relatively ungrazed Koa-'Ohi'a forest, and immediately saw a male 'Akepa in bright orange plumage flitting through the upper 'Ohi'a branches. The most common native birds in this area were 'Apapane and 'Oma'o. On a few occasions, 'Oma'o appeared on the lower branches of Naio and 'Olapa affording detail observation.

We drove to the IBP study site and hiked into the forest along a logging road. In this montane forest we observed numerous 'Apapane, 'Oma'o, 'I'iwi, and 'Amakihi. A pair of 'Elepaio frequently flew down the Hapu'u fronds displaying their curious behavior. Only 2 species of introduced birds were seen in the Kilauea Forest, the Red-billed Leiothrix and Japanese White-eye. Most remarkable is the high density of 'Oma'o which is considered to be the second most common native bird in this forest.

On a logging road in Keauhou Ranch near the IBP site, 2 Hawaii Creepers were seen foraging for insects on a Koa branch. Four members of the group approached close enough to identify the Creeper's physical appearance which closely resembles the 'Amakihi. In the same vicinity a male 'Akepa was sighted flitting through the upper Koa foliage and branches.

By 11:30 the tradewinds had brought in the usual rain and fog. As we drove down the road we met 2 logging trucks loaded with Koa on their way to the mill. The Kilauea Forest and adjacent ranch land obviously supports an assemblage of native birds, plants, and insects. However, damage from feral animals and the exploitation by men may eventually lead to further decline of Hawaiian wildlife.

Field Trip to Mauna Kea, 8 November 1975 by Mae Mull and Larry Katahira

One group of 16 finally managed to meet at Moohau Park about 6:45 a.m. Besides the usual urban birds some of us saw an unidentified green parrot flying over a banyan tree.

Driving through the rain forest on Saddle Road, we saw 'Apapane, 'Amakihi, a couple of 'I'iwi, and heard a few 'Oma'o. In the vicinity of Pohakuloa we saw 2 Pueo, numerous Mynahs, House Finches, Skylarks, and White-eyes. Driving from Waimea side of the Saddle, Quentin Tomich's group recorded 1 Pueo.

We met at Kilohana (Girls' Scout Camp) then headed up the jeep road to Pu'u La'au. Along this dirt road we sighted California Quails (6), Erckel Francolins (6), Ring-necked Pheasants (3), and numerous Skylarks. On the upper slopes a great distance away we saw a large herd of 50-75 sheep.

At Pu'u La'au we parked our vehicles at Charles van Riper's "research center". There we saw many 'amakihi and heard 1 Palila. Adjacent to this area is a stand of Conifers and Eucalyptus trees where we heard and saw White-eyes, Red-billed Leiothrix, Cardinals, and House Finches.

We separated into smaller groups and walked into the 300 acre sheep enclosure. One group observed at least 10 Palila and 2 'I'iwi. Gary Nishimoto was fortunate to closely watch a single Palila for approximately 20 minutes. Another group found 2 inactive Palila nests (tagged by van Riper) located on the lower horizontal Mamane branches. Mike Scott heard and saw an 'Akiapola'au flitting through the branches of a Mamane tree. We also ran across fresh pig rootings and turkey tracks.

After about an hour we gathered back at our vehicles. Those who did not have a chance to see the Palila were led back into the enclosure by Quentin Tomich. In a confined area of about 5 Mamane trees with green pods we saw a total of 8 Palila, apparently the same ones sighted earlier. On one particular branch were 3 Palila busily breaking the pods and eating one or two seeds before dropping the rest.

Perhaps the highlight of the day was seeing an 'Akiapola'au in the same tree where other Palila were seen. Unbothered by our presence the 'Akiapola'au foraged through the middle and upper branches of a Mamane tree. We approached to within 20-25 feet and were able to see the 'Akiapola'au continually probe under barks and into crevices. During this period of about 5 minutes the 'Akiapola'au had captured and devoured two larvae.

Part of the group drove to the sheep enclosure at Pu'u Nanaha. On the way up at 8,500 feet, 1 'Elepaio in a Mamane tree was seen and at 9,200 feet 3 'Amakihi were seen flying above.

At Pu'u Nanaha numerous Skylarks and 1 Golden Plover were sighted. In this 1 acre sheep enclosure a remarkable recovery of native vegetation is evident. Built about 10 years ago, the enclosure now inhabits many young plants, including Mamane, Naio, Pukeawe, Kukaenene, and various types of grasses. Outside of the enclosure the trees have been sculptured showing a distinct browse line. There is also evidence of a continually receding tree line with many dead trees and no young ones seen in the area. This visual evidence explains why our fragile mountain is slowly dying. The assemblage of native birds are dependent on this Mamane-Naio forest. Restoring these birds to a viable population means creating additional and larger enclosures. Given time, the enclosures will hopefully restore to near pristine conditions and be able to maintain a native ecosystem again.

On the way back to Saddle Road, we visited a Sandalwood enclosure located about a quarter mile below Pu'u La'au. This stand of trees had apparently survived many years of browsing. A fence built by the State protects this former valuable trading resource.

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Field Notes from Robert H. Cooper, Professor Emeritus in Science, Ball State Univ., Ind.

Snow Bunting in Delaware County, Indiana: It was quite a surprise and pleasure to drive into the hangar area of our Cessna Skylane and find that some friends of last summer were down from the Arctic to make us happy again. The Muncie Airport north of town was covered with about six inches of snow on Monday, February 10, 1975. The line boys had plowed the snow from in front of the hangars and in doing so had dug deep enough in spots to leave tufts of grass exposed. As I drove along the front of the different hangars horned larks flew up at intervals. Then I realized a few of the birds looked to be very light in color. Stopping the car and using my binoculars I saw three of the flock were snow buntings (Plectrophenax nivalis). The tan on the crown, shoulders and near the eyes showed beautifully. The yellow of the beak showed well and when they flew the gaudy white patches of the wings were very conspicuous. It was interesting to notice that when the

flock lifted and returned to feed, the light colored snow buntings invariably landed on the snow, not the dark grass patch, and then walked cautiously down from the snow bank to the feeding patch. It was fascinating to watch them catch hold of a little weed or grass stalk and thread it through their beaks, probably to pull off seeds. On Wednesday, June 26, 1974, I had seen snow buntings at Point Hope, Alaska, on the Arctic Ocean shore when I landed our Skylane on the gravel runway. It was a thrill then as it was this week of February here. Two snow buntings were seen again when we went out to the hangar on Wednesday, February 12. They were probably two of the three I had seen on Monday. This delightful bird is sometimes called Snowflake or Whitebird or Snow Lark or Snowbird. I have seen the snow buntings in past years at Barrow, Alaska, on the Arctic Ocean and at Saint Paul Island in the Pribilof Islands in the Bering Sea. Each occasion has been a delight. We have seen them flying around at 1:00 a.m. in the Arctic summer (light all night), singing, then alighting near a hoesetop, tucking their heads under their wings for a "cat nap," then off again flying in all directions and singing their delightful song. We have seen them only one other winter in Delaware County and that was also at the Airport.

It is said that snow buntings have been seen picking feathers from dead gulls in the Arctic in order to get feathers for their nests built in a depression in the soft tundra. The snow bunting is found nesting in areas near the snowy owl. The male makes a display of the white patches on his wings and tail during the courting season. The brownish color on parts of the snow bunting in winter is on the tips of the feathers and these seem to fall away in spring to reveal the clear white of the breeding season. It is said by some that the snow bunting takes only two or three hours of sleep each day in summer. It has been reported within about 150 miles of the north pole by United States Air Force research parties drifting on polar ice cakes.

These little Arctic friends brought back memories of many exciting birding experiences with Ball State students in the Arctic. We shall keep looking for the snowbirds at the Airport especially on snowy, blustery days--the kind they seem to like.

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Field Notes from Ernest G. Holt: Varied Tit--Mrs. Janet Butzine wishes to report that on 16 November 1975 she sighted 4 or more varied tits on the way up Alewa Heights.

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Banded under Grenville Hatch's Permit No. 6520

Original Band No. 527-00010; Reported Band No. 697-80501

Species: Laysan Albatross (Juvenile)

Banded Date: 17 June 1951 by W.E. Hewitt, Jr. at Easter Island, Midway

Recaptured: 19 February 1969, 18 November 1971 and 28 November 1972 (reported Vol.34, No.11, May 1974, p.128) at Sand Island, Midway by H.I. Fisher

Over twenty-one years of roaming the ocean. How much longer? Sad, the Society discontinued banding in 1951. Will someone take over the project and let us know?

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CORRIGENDUM: Vol.36, No.6, Dec.1975, p.76 Junior: change Robert J. O'hara-Hon to Mass.

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Testimony on SR 398/SCR 141 Relating to Ka-loko, Hono-ko-hau National Cultural Park to Senator Jean King, Chairman, Committee on Ecology, Environment and Recreation from President Wayne C. Gagne by Betsy H. Gagne, 7 April 1975

With the present concentration of construction along the shoreline of our State, we can ill-afford in delaying the identification and preservation of the cultural and natural aspects of the unique heritage that is Hawaii. Although the U.S. Department of the Interior was initially cool towards the original plan for a 1,300 acre cultural and natural park at Ka-loko, Hono-ko-hau with a price tag exceeding \$30 million (Honolulu Advertiser Feb. 22, 1975) the scaled-down version to contain about 750 acres of land seems more within realization. The draft environmental statement and proposal for this park reflects this.

All too often the Department of the Interior and the National Park Service has been a whipping boy of those jealous, suspicious or mistakenly fearful of federal "take-over". But, the "proof of the pudding is in the tasting". The National Park Service has been doing a generally magnificent job in Hawaii and in terms of the drawing power of our National Parks and Monuments for tourism alone, they are standout attractions and priceless reservoirs of our natural heritage. The people of Hawaii through the State Legislature need to welcome and encourage these federal efforts. This resolution, if passed, will tell them that. And, we are sure, those who hold the reins on our State budget would only be too happy to see some other agency shoulder most of the financial burden. An added plus for this proposed park is in the fact that it would preserve the habitat for several

endangered species of native shore birds, such as the 'ae'o or Hawaiian Stilt which now numbers a frighteningly small world population of about 1000 individuals.

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Memorandum on list of exemptions to EIS preparation submitted to the EQC by the Department of Land and Natural Resources to Environmental Quality Commission from Vice President Sheila Conant, 6 October 1975: The Hawaii Audubon Society feels that the Department of Land and Natural Resources' (DLNR) proposed exemptions list for EIS (environmental impact statement) preparation should not be approved as it stands at present. While some of the items included, such as replacement of signs, seem to be justified, many items describe activities which could have significant effects on the environment (see list included with testimony).

It seems that this list is so extensive that it might completely exempt the DLNR from having to prepare EIS's on their proposed activities, many of which may have serious environmental effects. Since the intent of the law requiring EIS preparation is to provide a means for evaluating potentially significant environmental effects of human activities, it seems that the issuing of such extensive exemptions would defeat the purpose of the law.

We suggest that no approval be given to the present list, but that a revised, and much more specific list, be resubmitted at a later date.

(A list of items involving activities with potentially significant environmental effects was taken from the listing submitted by the DLNR and submitted in the testimony to the EQC. EQC voted to send the DLNR's list back to them for reconsideration and revision. A new list will be presented and reviewed at a later meeting of the EQC.

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ALOHA to new members:

Junior: Joy & Keith Fujimoto, 856 20th Ave, Honolulu, HI 96816

Regular: Roger Guinee, 3161 Ala Ilima St, Apt 1203, Honolulu, HI 96818

Alexis Higdon, 2759 Round Top Drive, Honolulu, HI 96822

Mr. & Mrs. Carl A. Moon, 1889 Kalaniana'ole Ave, Hilo, Hawaii 96720

Carroll E. Pinckard, Jr., 6601 Walther Ave, Baltimore, Md. 21206 (Reinstated)

Marianne J. Swisher, 3161 Ala Ilima St, Apt 1203, Honolulu, HI 96818

Yaeko M. Yokoyama, 2026 Leiloike Drive, Honolulu, HI 96822

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MAHALO NUI LOA to Waikiki Aquarium for housing our files for the last few years and Bishop Museum for their help until we find a new home. MAHALO!

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To the outgoing and incoming officers and members who actively participated in the Society's endeavors: MAHALO NUI LOA!

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As soon as the new edition of HAWAII'S BIRDS, a field guide, is out, we'll let you know.

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Reprint permitted if credited as follows: from 'ELEPAIO, Journal of Hawaii Audubon Society.

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JANUARY ACTIVITIES:

27 December - Kapaa, Kauai, Christmas bird count. Last year 8 people in 3 parties plus 1 at a feeder recorded 7167 birds of 36 species. This year we would like to increase the number of observers, teams, and coverage of the circle. All interested people are welcome. For information call Fred Zeillemaker (828-1431), P.O. Box 87, Kilauea, HI 96754 or "D" Kawahara (822-3271).

3 January - Big Island Christmas bird count on the southeast slopes of Mauna Loa. For information call Dr. Michael Scott (967-7208), P.O. Box 44, Hawaii National Park, HI 96718 or William Mull (967-7352).

4 January - Lihue, Kauai, Christmas bird count. Last year 2201 birds of 27 species were recorded by 11 observers in 7 parties. All those interested are encouraged to call Mrs. Winona Sears (822-3045), RR 1, Box 214D, Kapaa, 96746

11 January - Field trip to Poamoho trail to study forest birds. Bring lunch, water and if possible, your car. Transportation cost (\$1.00) to be paid to the drivers. Meet at the State Library on Punchbowl Street at 7:00 a.m. (please note time). Leader: Dr. Sheila Conant, 988-6522 (evenings)

17 January - Field trip in the Hilo area to search for shorebirds, migrant ducks and resident waterbirds. Meet at Wailoa Visitor Center parking lot in Hilo at 8:00 a.m. Bring lunch, binoculars and HAWAII'S BIRDS. Leader: Larry Katahira, 967-7416 (Volcano)

\*12 January - Board meeting at Waikiki Aquarium Auditorium, 6:45 p.m. Members welcome.

19 January - General meeting at Waikiki Aquarium Auditorium at 7:30 p.m. Program: A Cooke's Tour of the Southern Line Islands by William Cooke, graduate student, Dept of Zoology, Univ of Hawaii (color slides)

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