

INTRODUCTION OF TRIPARTITE AND SEA GRANT RESEARCH PROGRAMS
IN THE NORTHWESTERN HAWAIIAN ISLANDS

Richard S. Shomura

Director of Southwest Fisheries Center Honolulu Laboratory, National
Marine Fisheries Service, NOAA, P.O. Box 3830,
Honolulu, Hawaii 96812

Mr. Chairman, distinguished guests, Northwestern Hawaiian Islands (NWHI) symposium participants, ladies and gentlemen. I am indeed honored to be invited to make a few introductory remarks to open this symposium.

I am sure all of you are aware that the NWHI study is still an ongoing and active program and that this symposium is primarily a mechanism to evaluate and assess the results achieved to date. We need this mid-stream pause to avoid the triple-S disease--Shomura's should've syndrome--a disease which is characterized by a feeling, after the fact, that we should've done this, or should've done that.

Before providing you with some background information on the rationale for the NWHI investigation, I would like to briefly describe the NWHI and state the general objectives of this study.

First, to clear up some nomenclatural problems, the string of islands under investigation is commonly known as the Leeward Islands. Since Leeward is such a nondescript term and could refer to one of several leeward islands located throughout the world, I prefer to follow the State of Hawaii's lead and refer to this part of the Hawaiian Archipelago as the NWHI.

The NWHI are made up of a group of low, rocky islets and coral atolls extending more than 1,000 miles in a northwesterly direction from Nihoa Island to Kure Atoll. Geologically, the NWHI are markedly different from the main Hawaiian Islands. The main islands on which we live are of recent geological vintage, volcanic in origin, and are characterized by high mountains and relatively large land masses. These large land masses--the main islands--even before discovery by man, contained a wide variety of plants and animals. In contrast, the NWHI include a relatively impoverished land fauna, in a limited terrestrial habitat.

Today, many people would describe much of the NWHI area as pristine. Historically, this was not the case. In the late 1800s entrepreneurs began mining operations for guano at Laysan and Lisianski Islands. The non-pristine situation was aptly described in an article which appeared recently in a local newspaper. Besides giving an account of the primitive living conditions on Laysan, there is a description of the havoc caused by the introduction of rabbits on Laysan Island. In addition to mining, others set up harvesting bases to collect feathers of seabirds. In the late 1920s pearl shells were harvested from the lagoons of Pearl and Hermes Reef.

To protect the birds of the NWHI, President Theodore Roosevelt in 1909 designated the area as "The Hawaiian Islands Bird Reservation." In 1940 the area was redesignated "The Hawaiian Islands National Wildlife Refuge" and in 1966 the refuge became a part of "The National Wildlife Refuge System." The State in 1952 also designated the area as a State wildlife refuge.

The NWHI are part of an interesting maze of ownership and jurisdiction. All of the islands from the Big Island to Kure are part of the Hawaiian Archipelago. With the exception of Midway all of the islands are considered part of the State of Hawaii. With the exception of Midway and Kure all of the islands of the NWHI are a part of the Hawaiian Islands National Wildlife Refuge. While the NWHI can be considered legally part of the State of Hawaii, the actual administration of the islands rests with the Fish and Wildlife Service since all except Kure and Midway come under the Wildlife Refuge System. For the management of fish and wildlife on Kure, I believe the State has adopted a policy that is essentially in consonance with Federal regulations.

The NWHI are a classical example of the problems mankind presently faces in allocating access to and availability of resources. Decisions on allocation inevitably must be made in the general framework of "what's best for the nation." Since mankind in this case primarily refers to the citizens of Hawaii and the rest of the nation, we will need to identify the players.

Who are the players with interest in the NWHI? First, there is the naval force on Midway. The Navy command on Midway fluctuates in size depending upon the world military situation, but they generally keep a low profile. The Coast Guard is currently on Kure Island maintaining a loran station. Until last year the Coast Guard also occupied French Frigate Shoals where they maintained a loran station. This station was phased out in 1979. The third group includes the commercial and recreational fishing interests. It should be pointed out that commercial fishing in the NWHI took place before the World War II years. Much of the fishing activity, however, was confined to the lower sectors of the NWHI. Then there is also the interest in the NWHI of the scientific community. The first scientific study of the NWHI was undertaken by the U.S. Fish Commission in 1902 on the research vessel Albatross. Since 1902 research in the NWHI has been sporadic. After nearly three decades of little or no scientific activity in the area, Paul Galtsoff, a fishery biologist in the old U.S. Bureau of Fisheries, undertook an investigation of Pearl and Hermes Reef in 1930. Finally, among the cast of players is a segment of society which has a deep interest in conserving and preserving the fauna and flora of the NWHI.

What are the resources of interest to these special interest groups? First, the military is simply interested in Midway Islands as an operational base, although at one time they were deeply interested in the avifauna. Their interest in the avifauna was primarily in trying to eliminate albatross or at least to discourage the nesting of albatross on the aircraft runway. The fish and invertebrate resources of the NWHI are of interest to the commercial and recreational fishing community. These resources are not completely understood in terms of availability and abundance.

There are many species of seabirds that live and nest in the NWHI. There are also several endemic land birds associated with these islands. These include the Laysan duck, Laysan finch, Nihoa finch, and the Nihoa millerbird. Among the seabirds are the familiar Laysan albatross, black-footed albatross, frigatebird, noddy tern, boobies, shearwaters, and a handful of other species.

For marine mammals, the NWHI is home for the endemic Hawaiian monk seal. The Hawaiian monk seal is presently on the endangered species list, since there is some evidence that the population is declining. Because the number making up the total population of seals is in the order of hundreds and certainly less than several thousands, there is cause for concern. Finally, there is the green sea turtle which nests in the NWHI and is currently on the threatened species list.

All of my ramblings to this point leads up to the general objective of why we are studying the NWHI. Even if society in general was not interested in the area, the isolated nature of the Hawaiian Archipelago and the fact that it is in the outer reaches of the Indo-Pacific fauna would in itself be of tremendous scientific interest and inquiry. The fact that various segments of society have expressed interest in the area, some with conflicting views, makes our investigation even more crucial and necessary. I would like to think that our overall objective is to gain knowledge and understanding of the NWHI marine ecosystem to provide decisionmakers with a sound basis for the utilization or non-utilization of the resources of the area.

I've often wondered what will happen to the NWHI if and when the ice caps melt as has been predicted. If the melting ice caps were to appreciably raise the sea level in the NWHI will the Hawaiian monk seal, if not extinct by then, adapt to a rocky shore habitat? How about the poor green sea turtle that needs to dig her nest in sand; she will find "tough sledding" on rocky shores. Finally, will the albatrosses be able to adapt, possibly ending up nesting on the slopes of Haleakala? Returning to the realities of the present, what we need to know about the resources today is how much is available, and of more importance, the interactions of the various components of the ecosystem. Although we need a quantitative measure of the resources available in the area, it is more important to know what effect the various components of this ecosystem have on each other. What are the pressure points? Is the abundance of the Laysan albatross controlled by availability of food or is it associated with other environmental factors such as temperature?

The process by which we embarked on this study may be of interest to some of you. The Honolulu Laboratory in 1973 went through a major reorganization. In Federal Government circles a major reorganization usually means a cut in budget and a reduction in force. These two things took place in 1973 and the Lab was in a demoralized and chaotic condition. In an early planning session I had with several key staff members we agreed that one way to revitalize the Lab was to embark on a new program, a program that would generate interest, be high on the scale of regional or national needs (this in light of the budget situation) and one which had appeal and could be "sold" through the system. Since we

could see the problems that were beginning to surface within the NWHI, it seemed like a study of the NWHI would be important, have high visibility, and would be a program that could generate fiscal support. In the early 1970s preservationists were gathering support to close the NWHI to all human activities; others with commercial inclinations were beginning to be concerned that fishing access to the NWHI would be closed off. The Navy at Midway remained silent and the Coast Guard kept trying to accommodate the many State and Federal regulations and guidelines that control the area.

A quick review of the literature revealed that very little was known of the fauna and flora of the NWHI. It distressed me a bit when I realized that we at the Honolulu Laboratory knew more about the resources of the tropical equatorial Pacific, the pelagic waters of the North Pacific, and even the resources of the Indian Ocean than we did the resources of the NWHI.

In late 1973 we undertook some preliminary field work in the NWHI on the NOAA research vessel David Starr Jordan. Encouraged by our early findings we began a major push through our budgeting cycle to obtain funds to carry out a long-term program. We were successful to a limited extent. We recognized that in the Federal climate of the mid-1970s, obtaining funds and personnel ceilings were difficult. Realizing that the Honolulu Laboratory could not do the entire job properly, I approached the Fish and Wildlife Service, the State Fish and Game, and the University of Hawaii Sea Grant College Program about pooling our collective resources and undertaking a cooperative investigation of the NWHI. I received immediate and positive responses from the Fish and Wildlife Service and Fish and Game. From Sea Grant I received neither a positive nor a negative response. I guess one could say the suggestions of cooperative effort that I made at the Sea Grant advisory meetings fell on deaf ears. In fairness to Sea Grant, the program at that time was embroiled in a tremendous task of reorganizing its aquaculture program. Since that was Sea Grant's largest program at that time it probably took up all of the energy the Sea Grant leadership could then generate.

In any event, I met with Fish and Wildlife Service and Fish and Game officials to scope out a cooperative program. We decided to allocate the research areas pretty much in line with organizational responsibilities; thus, the Fish and Wildlife Service was to undertake research responsibility for the seabirds, Fish and Game for the nearshore fishery resources, and the Honolulu Laboratory for the slope, banks and offshore resources. We found out later that the National Marine Mammal Laboratory of the Northwest and Alaska Fisheries Center, National Marine Fisheries Service in Seattle had research plans for monk seals. In the meantime, we continued to plan cruises to the NWHI from 1975 to 1978. To formalize the cooperative research agreement we developed a document that detailed the plans for the various agencies in a tripartite agreement to conduct research in the NWHI. Although the agreement was signed in 1978, the cooperative research was initiated much earlier. Incidentally, as of mid-1979 the Honolulu Laboratory was given the responsibility for research on Hawaiian monk seals and green sea turtles.

Returning to Sea Grant involvement, or lack of involvement, the best thing that happened to the Sea Grant Program was the return of Dr. Jack Davidson to Hawaii in 1977. An equally fortunate event was the return to the University in late 1977 of Dr. Rick Grigg, who had spent a year in Washington, D.C. Rick was eager to resume his research activities and approached me about some sea time on our research vessel to collect data on precious corals in the NWHI. I took this opportunity to give Rick a long discourse, expressing my disappointment with Sea Grant for its lack of involvement in the tripartite study. As you can probably guess, Rick, with support from Jack Davidson, quickly prepared a NWHI package for Sea Grant support.

As evidenced by its current deep involvement with this symposium, Rick was successful in influencing Sea Grant to become a full partner in the NWHI studies. The studies currently being supported by Sea Grant are complementary to those being carried out by the other three agencies. In their study of primary productivity and the oceanographic environment in the NWHI, Sea Grant is filling a major research gap.

During the presentations today and tomorrow you will be hearing about some extremely interesting and exciting research. I believe some of the results will turn out to be major contributions toward our understanding of tropical reef ecosystems.

In closing, it is my hope that the final product of this cooperative undertaking will be a monograph bearing a title something like "The NWHI-- An Ecosystem Successfully Dissected and Analyzed." Furthermore, I would like to see a paperback version of this monograph entitled "Everything you wanted to know about the NWHI but were afraid to ask."

Thank you.