NORTHWESTERN HAWAIIAN ISLANDS

0F5

G.H. BALAZS

and Wilson's Storm Petrel) will be taken for stomach content analysis and stomach oil samples:

SHOTGUN

Species	Number
Adelie Penguin	25
Chinstrap Penguin	25
Gentoo Penguin	25
Macaroni Penguin	25
Antarctic Tern	25
Cape Pigeon	25
Snow Petrel	25
Southern Fulmar	125
Wilson's Storm Petrel	25
Black-browed Albatross	5
Giant Petrel	5
Blue Petrel	5
Antarctic Petrel	5
White-chinned Petrel	5
Peal's Petrel	5
Silver-gray Fulmar	5
Prion	5
Arctic Tern	5
S. Black-backed Gull	5
South Polar Skua	5
Brown Skua	5
Blue-eyed Shag	5
American Sheathbill	5
Cape Pigeon	5

CAPTURE AND RELEASE

Adelie Penguin	75
Chinstrap Penguin	75
Gentoo Penguin	75
Macaroni Penguin	75

SPECIAL USE PERMIT ISSUED — Fed. Reg.: 10/25/83, p. 49387

U.S. Fish and Wildlife Service has issued this permit to Easy Rider Corp. for installation of a mooring system at French Frigate Shoals in Hawaiian Islands National Wildlife Refuge. The purpose of the system and anchorage area is to provide safe haven during emergency conditions. "This project should also minimize destruction of coral reef habitat and disturbance to wildlife that may occur when vessels seek shelter at other locations within the Refuge."
Map indicating specific location of mooring buoy at French Frigate Shoals and any additional ifnormatio desired may be obtained from Refuge Manager, Rm 5302, 300 Ala Moana Blvd, Honolulu HI 96850, (808) 546-5608

NOTICE OF FINDING ON A PETITION — Fed. Reg.: 10/25/83, p. 49316
Further Info: John Spinks, Ofc. of Endangered Species, U.S. FWS, Wash, DC 20240

The Service finds that the petition submitted June 22, 1983, by Kangaroo Protection Foundation to reclassify the western gray kangaroo from Threatened to Endangered status does not contain substantial data to warrant further consideration. Effective October 25, 1983.

EMERGENCY RULE — Fed. Reg.: 10/25/83, p. 49245
Further Info: Sanford Wilbur, FWS Regional Office, Lloyd 500 Bldg, Suite 1692, 500 NE Multnomah St, Portland Ore. 97232

Fish and Wildlife Service determines as Endangered the population of woodland caribou (southern Selkirk Mountain herd) found in NE Washington, N. Idaho and So. British Columbia. Effective: October 25, 1983.

PROPOSED RULE — Fed. Reg.: 10/27/83, p. 49667
Comments, must be received by November 30, 1983, in the Office of Scientific Authority US FWS, Wash, DC 20240

People's Republic of China has submitted the giant panda for inclusion in CITIES Appendix III and has proposed its future transfer to Appendix I. The Service requests comments on whether the US should enter a reservation on the Appendix amendment and should support of oppose Appendix I amendment proposal. Presently the Service intends to support both listings.

MARINE MAMMAL ANNUAL REPORT — Fed. Reg.: 10/21/83, p. 48872

The report covers January 1, 1982, to December 31, 1982. Write for a copy to Director (PUB) U.S. Fish and Wildlife Service, Dept. of Interior, Wash. DC 20240

ENDANGERED SPECIES PERMITS ISSUED FOR JULY, AUGUST AND SEPTEMBER 1983

July 1983

International Animal Exchange	10491	07-07
Friedman, Joel M.	10049	07-11
Quail Breeder's Society	X9841	07-11
Zoological Society of San Diego	10470	07-18
Hadfield, Michael G.	10486	07-18
Cheyene Mountain Zoo	10581	07-18
Florida Wildlife Sanctuary	10584	07-18
Peabody Museum	#0622	07-22
Talmadge, Bartlett	10461	07-29
Clem, Truman C.	10552	07-29
Little Rock Zoo Garden	10613	07-29

August 1983

Gibbon & Gallinaceous	10296	08-01
Zoological Society of San Diego	10576	08-10
Quality Taxidermy	1014E	08-10
Roger Wilsams Park Zoo	10485	08-11
McLamb, Lenous	10600	08-11
Jackson Zoo Park	10620	08-12
Oxley, Ron L.	10348	08-15

September 1983

University of Michigan	10687	09-08
Miami Metrozoo	10879	09-12
	10833	09-12
Izu-Mito Sea Paradise	10869	09-16
Toba Aquarium	10690	09-16
Sacramento Zoo	10685	09-19
Division of Fish & Wildlife Department of Natural Resources	10832	09-19
Zoological Society of San Diego	10844	09-27

Additional information on these permit actions may be requested by contacting the Federal Wildlife Permit Office, Box 3654, Arlington, VA 22203, telephone (703/235-1903) or by appearing in person at the Federal Wildlife Permit Office, 1000 N. Glebe Road, Room 605, Arlington, VA, between the hours of 9:00 a.m. and 3:00 p.m. weekdays.

Federal Register: 10/36/83, p. 49554

PERMIT APPLICATIONS

Ministere, Loisir Chase 35 Peche
Jardin zoologique de Quebec
(P 328)
8191 Avenue du Zoo
Charlesbourg, Quebec, Canada

Federal Register: 9/30/83, p. 44876
Comments, within 30 days of previous date, to Asst. Admin. for Fisheries, U.S. Dept. of Commerce, Wash., D.C. 20235

To take for captive maintenance four California sea lions over a one-year period. Rehabilitated animals from stocks of beached and stranded animals will be taken.

Moclips Cetalogical Society
(P311B)
P.O. Box 945
Friday Harbor, WA 98250

Fed. Reg.: 10/24/83, p. 49086
Comments, within 30 days of previous date to Asst. Admin. for Fisheries, NMFS, Dept. of Commerce, Wash D C 20235

To take by potential harassment during census and identification studies, over three years, in Washington, unspecified numbers of: Gray whales, Humpback whales, Dall porpoises, Harbor porpoises, Killer whales, and Minke whales.

Donald Wiggin
ITT/Antarctic Services, Inc.
621 Industrial Ave,
Paramus, NJ 07652

Fed. Reg.: 10/27/83, p. 49712
Comments, by November 28, 1983 to Permit Office, Rm 627, Div. of Polar Programs, National Science Foundation, Wash DC 20550

To enter Specially Protected Area, Palmer Station Vicinity, Antarctica, December 1, 1983, to May 1, 1985 to inspect a survival cache for boating operations.

William Hamner
Dept. of Biology
Univ. of California
Los Angeles, CA 90024

Fed. Reg.: as above

To study transformation of liquids in krill into the stomach oil storage products of various seabird predators, and to document photographically behavior of marine mammals, seabirds, and fish that are krill predators. Applicant requests shotgun collection of 25 specimens of each species for both stomach content analysis and collection of stomach oils. He proposes to collect up to 75 live specimens of each species at sea with a gill net; captured penguins will be forced to regurgitate stomach contents and will be released. Three birds (Antarctic Tern, Snow Petrel

---WELCOME---

SKIP NAFTEL
Captain and General Partner

---COMMENTS---

DOYLE GATES
National Marine Fisheries Service

HIDETO KONO
Hawaii Department of Planning
and Economic Development

SUSUMU ONO
Department of Land
and Natural Resources
for
Governor George Ariyoshi

---BLESSING---

REVEREND ABRAHAM K. AKAKA
Kawaiahao Church

OPEN HOUSE AND BLESSING

M/V EASY RIDER TOO

APRIL 26, 1980

KEWALO BASIN
HONOLULU, HAWAII

Oct. 27, 1981

Dear George,

Received your letter of Oct. 9 today. Mollie forwarded it to me here in Capitola, CA. Gunnar and I left the middle of August, The idea being to enroll him in a public schhol so when college time comes around he'll be a bona-fied resident. We have an apartment, Gunnar is a junion at Soquel High school and with luck, Mollie and Jonah will join us here in early Feb. I am working for the state Dept of Parks and recreation. Obtained the job through a senior citizens organization in Wash. ,D.C. I've been building a darkroom for the past few weeks and will start photo work by next. Jobs at my age are hard to find and I'm lucky to have this.

To answer your questions about Gardner Pinnacles. I remember talk of the existence of Helicopter fuel there by Eugene Kreidler. Seems to me the pilots were from Midway, would scout all the atols for glass balls, and kept the fuel there so they could refuel and return to Midway. I checked my color slides, black amd white and the series in the SB I can't remember why but I remained in the launch, the photos all attest to this. Maybe it was too rough or they wern't planning on being there too long. Anyhow I do remember Kreidler saying that he himself had dumped ore or more drums of fuel. I thought at the time what a deadly trick to pull on anyone. Not sure, but seems that he refered to dumping them on an earlier trip. Kreidler was a real fanatic about "his" islands or atolls Don't know if you have a copy of the Tuesday Dec. 13 1966 issue of SB . The page of photos and story wa s on

Gardner Pinnacles. Several quotes that relate to the military. "The scientists made another discovery this time. The military had blasted off the top of one peak for a latitude and longitude sighting, part of the Hiran system of triangulation and aid to navigation."

"Agnered wildlife officials (Kreidler I'm sure) noted that the military did receive permission from the U.S. Bureau of Sport fisheries and Wildlife to land briefly but not to use explosives or to scare birds "

"the military is our biggest problem" said Eugane Kridler, regional head of the bureau and manager of the refuge.

This just about drains my hea d of recall on Gardner P.

I have my Honda (75) 750 Super sport, that is my recreation, transportation and just about everything else. Now licensed to drive same in Calif. Some months ago I made the trip from Seattle to San Francisco on it about 1000 miles in two days of good hard driving. It's a great sport but a lo nely one.

Hope that Linda and Christian are well and that yo ur situation continues despite recession and Pres. Regan's elimination of all the good things in life. Let me know what happens in your life. I continue to make progress with my Niihau research. Heard anything about the island lately???

Best,

Warren

816 A Balboa St.
Capitola, CA 95010

Easy Rider Too
1050 Koloa Street • Honolulu, Hawaii 96816 • (808) 531-8794

Robert J. Shallenberger, Ph.D.
Supervisory Wildlife Biologist
Refuges/Wildlife Resources
P.O. Box 50167
Honolulu, Hawaii 96850
October 19, 1981

Dear Rob,

In response to your letter received October 15, 1981; After lengthy soul searching and environmental consultations I will, at this time, retract and forego my proposed installation of a temporary mooring within Refuge boundaries at French Frigate Shoals. I do not totally agree with the conclusions of Fish and Wildlife in denying this request but I will give it due process of consideration during my stay at French Frigate Shoals.

I sincerely believe that my concept of temporary or permanent moorings at various locations in the Leeward Islands will serve more purposes than just convenience for the involved vessels. I wish to pursue a Section 7 consultation and an unbiased biological opinion on my original proposal.

As you are aware, the purpose of mentioned proposal is not only to serve my needs but to protect the ecosystems within French Frigate Shoals. Acropora communities are unique to the Hawaiian Island chain; my proposed mooring would and will protect these unique communities. As far as seals and turtles are concerned, I sincerely believe that if harassment or taking should take place I do not think that an imaginary line would make any difference. I assure you that I will take the time to look for a suitable location outside this imaginary line for the mooring and will not violate existing Refuge boundaries.

I would like to solicit the help of your agency and the parties in the Tripartite Coordinating Council to investigate the actual biological effects that my proposed mooring could have on the ecosystem at French Frigate Shoals. I must apologize to you for any trouble I may have caused. I strongly feel that my proposed activity would not hamper or cause damage to any living thing or being at French Frigate Shoals. I believe that a permanent mooring would hold many long term bneefits as far as the ecosystem is concerned, and possibly eliminate the present anchoring habits of fishermen and some state and federal agencies.

Again, I assure you that in all of my activities near the Refuge I will observe my standard practices of no lights or the

jettison of waste into the ocean. The only time I would ever violate Refuge boundaries would be for shelter, considering the safety of the vessel and her crew. I will be looking forward to pursuing this request and will contact you upon our arrival in Honolulu approximately December 10, 1981.

Very truly yours,

Skip

Skip Naftel

GLN:cm
cc. Doyle Gates, N. M. F. S.
Richard Shimura, N. M. F. S.
Kenji Ego, Dept. of Fish and Wildlife
Western Pacific Management Council
Jean Lowman, U. S. F. W. S. Regional Solicitor
George Balas, N. M. F. S.

Easy Rider Too
1050 Koloa Street • Honolulu, Hawaii 96816 • (808) 531-8794

Dr. Robert Schallenberger
Refuge Manager
U. S. Fish and Wildlife Service
300 Ala Moana Blvd., Suite #5302
Honolulu, Hawaii 96850

Dear Rob,

Please regard the following as a brief description and an official notification of my intention to install a temporary mooring at French Frigate Shoals, on or about October 18, 1981. The intention and purpose of this act are not meant, in any way, to disregard or violate the Refuge boundaries or laws. Nor is it meant to harm wildlife of any kind in or associated with the Refuge. As you already know, the ecosystems within the Northwest Hawaiian Islands (N.W.H.I.) Refuge system have my utmost concern, and I assure you that I would never attempt to do anything to endanger wildlife within the Refuge or outside the Refuge for that matter.

The vessels, Mokihana and Easy Rider Too will be working, in tandem, shrimp fishing at French Frigate Shoals in late October and early November. As you already know, the E. R. Too is a seagoing catcher and processing vessel and the Mokihana is solely a catcher vessel. The Mokihana is unable to process and store their catch, therefore, the Easy Rider Too will process the Mokihana's catch. In order to accomplish this, the shrimp must be transferred from one vessel to the other. Sea transfer, even under the best of conditions, prevents somewhat of a risk to both vessels and their crews. It has been proven, both in the foreign and domestic fleets, that sea transfer can take place with risks somewhat minimized if the vessels are able to find a lee. The proposed location at French Frigate Shoals is the best area within the atoll that we can choose with minimal wildlife effects. This location, referring to chart 19402, is 23°46.1'N, 66°14.0'N, being approximately 1½ miles WSW of East Island. In referring to chart 19402 you will notice an anchor in this area, meaning that this area is a recommended anchorage. I intend to drop a 1500 lb. danforth anchor with approximately 150 feet of 3" chain in the sandy area on or about the location of the anchor on the chart. There will be an orange, 62" buoy attached to the chain. Approximately 120 feet of 2½" line will be trailing from this crown buoy and will be marked with red floation buoys. We will be using this mooring to transfer catch and bait between the Easy Rider Too and the Mokihana.

We intend to fish, with both vessels, for thirty days at French Frigate Shoals. If both vessels were to drop anchor every night, the damage to the reef community would be quite extensive. This action would cause sixty, long lasting ecological scars in this area of the Refuge. I feel that, with the above described mooring system, the effects upon the Refuge ecologically are minimized. I assure you that my standard practices of displaying no night lights nor the jettison of rubbish into the ocean will be observed.

I am aware that the present laws and regulations governing the Refuge may not permit the installation of a temporary mooring. But, I feel in my heart, considering my past experiences, that the risk to the wildlife, the ecosystem, the vessel personnel, and the vessels themselves will be minimized through the installation of the mooring. Hopefully, in the future, all fishermen will become more aware of the ecological damages that inocent acts, such as anchoring, cause to the reef communities. Moorings, such as the one described, cause little damage and serve a most needed purpose.

If I can be of any further help in this matter, please feel free to contact me aboard the Easy Rider Too any time. Phone 531-8794.

Very truly yours,

Skip

Skip Naftel

GLN:cm
cc. George Balaz, N. M. F. S.
William Gilmartin, N. M. F. S.
John Naughton, N. M. F. S.
Henry Secuda, Fish and Game Division
Doyle Gates, N. M. F. S.
Richard Shimura, N. M. F. S.
Western Regional Pacific Management Council

KARL W. KENYON
11990 LAKESIDE PL. N.E.
SEATTLE, WASHINGTON 98125

4 Oct '81

Dear George:

Thanks for your note of 30 Sept. With reference to the burial of material of Pearl & Hermes Reef. & dying of Table-top Coral of Gardener Pinnacle, I again talked to Gene Kridler.

We visited Gardner Pinnacle on 16 Sept. 1966. On the top of the large pinnacle we found 9 drums (55 gal.): One each contained diesel & gasoline, 4 contained water & 3 had rusted through & contained the remains of at least 15 birds that had fallen in & starved to death. All drums were rolled off the flat spot & went into the sea. Certainly the small amt. of gas & Diesel could not have created long-term environmental damage – in our opinions. We also cleaned-up a number of yards of elect. wire that the Military had left strung around among the rocks & which had recently entangled & killed a Man-o-war bird.

That is the only time I was ashore on Gardner Pinnacle.

Gene intimated that he had made enquiries about P. & H. Reef burials as you had not told me that this was a confidential querie.

Thanks for the loan of your copy of "Proc. of the Symp. on Status & Res. Inv. in NW H. Is", 24-25 Apr. '80. I return this herewith. Sorry if there's a few brown stains on the cover. These were made when my study ceiling sprung a leak during a rain storm.

Will be interested in any further info. on what goes on in the Green Turtle – Mak Sea Habitat. Best, Karl

P.S. Many thanks for the copy of your excellent "Synopsis of Biol. data on the Green Turtle in the H. Is." This is a valuable summary & I'm very glad to have it.
Best wishes – KWK.

WESTERN PACIFIC REGIONAL FISHERY MANAGEMENT COUNCIL

1164 BISHOP STREET - ROOM 1608
HONOLULU, HAWAII 96813
TELEPHONE (808) 523-1368

May 15, 1981

TO: Chairman, Scientific and Statistical Committee

FROM: Chairman, Ad Hoc Subcommittee to Review Biological Opinion

SUBJECT: Subcommittee Report

The Ad Hoc Subcommittee designated to review the NMFS Section 7 Biological Opinion for the Spiny Lobster Fishery Management Plan met on April 10, 1981, with Council staff. The subcommittee members were Henry Sakuda, Phil Helfrich, Gerald Marten, and Richard Shomura. The subcommittee's report is presented in three sections: conclusions; recommendations; and specific comments on the Biological Opinion.

CONCLUSIONS

1. The Biological Opinion does not present information that would support modification of the Council's proposed conservation and management measures in the Spiny Lobster FMP.

2. The Biological Opinion appears to overstate the risk of interaction between the fishery and endangered and threatened species. The opinion does not give sufficient weight to the fact that in the history of the fishery to date, and in hundreds of observations by researchers and observers, there have been no recorded instances of adverse interaction between the fishery and monk seals, and only one instance of interaction (apparently with no harm) between the fishery and sea turtles.

3. The overstatement of this risk may reflect misunderstandings as to the nature of the fishery and the scope of the FMP. Briefly, the FMP is operative only in the FCZ, which is at least 3 miles from shore and beyond; and affects only fishing for spiny lobster, not other human activities. The fishery has not attracted a large number of vessels in the past, and does not appear likely to attract large increases in the fleet in the future. The Biological Opinion, however, implies that the FMP may result in unauthorized landings on islands, with introduction of rats (p. 15); or may result in harassment of monk seals, with increased effort (number of vessels and/or trips). Control over vessel landings (authorized or not) is beyond the scope of a FMP. Other agencies have authority to regulate such activities.

4. The information in the Biological Opinion does not clearly support the findings that there is "insufficient information" to conclude no jeopardy for leatherback and green sea turtles. The FMP would govern fishing only in the FCZ, where there are occasional transiting turtles. The FMP cannot control landings (emergency or otherwise) on islands. The only nesting site mentioned is at French Frigate Shoals, which has a very low density of lobsters (based on NMFS sample surveys, Table 7.4, FMP) and would presumably attract low levels of fishing effort. The probability of frequent entanglement of sea turtles with lobster gear or other interactions appears to be extremely low.

5. Notwithstanding an early recognition that MSY is not a quota, the Biological Opinion incorrectly reaches the conclusion that OY is either a target harvest level or a quota. This conclusion in turn leads to an expression of concern that lobster stocks could be depleted (p. 18). As indicated in the FMP, however, OY is a best estimate of the range of harvest that can be sustained with a size limit of 7.7 cm CL and other measures. The relevant issue is not the probable level of harvest, but whether the reproductive capacity of lobster stocks will be maintained, and overfishing will be prevented, with the selected size limit in combination with other measures.

6. Information in the Biological Opinion concerning the status of the monk seal population and the causes of declines in the population is presented with more certainty than appears warranted. For example, it is indicated that there have been substantial declines in seal counts at Kure, Midway, Pearl and Hermes Reef, Lisianski, and Laysan; but it is not indicated that the manner, timing, and reliability of counts may have been so different over the years that they are not comparable (see DEIS for Proposed Critical Habitat). The population at French Frigate Shoals is reported to have increased greatly; here, too, there is no indication that counts were made in a comparable fashion. Further, while the Proposed Critical Habitat DEIS acknowledges that census counts should not be taken as population estimates, the Biological Opinion does not so indicate. Finally, the Biological Opinion cites Kenyon (1972) as either attributing (p. 7) or implicating (p. 15) human disturbance as a causative factor for declines at Kure and Midway; but the Biological Opinion does not offer any explanation to account for increases at Necker Island (where the fishery was first concentrated) or at French Frigate Shoals (where there has been a very large amount of research activity). These inconsistencies make it difficult to determine which items in the Biological Opinion are fact; which items are reasonable conclusions based on repeated events or facts; and which items are hypothetical or speculative outcomes based on inference from random events.

7. The Biological Opinion places upon the Council the responsibility for "assuring that the information necessary for a proper assessment of the FMP is collected". Several alternative ways for collection of the data are discussed. This could be taken to mean that NMFS intends the

Council to become involved in monk seal and sea turtle research. The subcommittee believes such research is the responsibility of NMFS and the U.S. Fish and Wildlife Service. Therefore, the subcommittee presumes that NMFS only intended that the FMP should indicate research needs and, if the Council so desires, should indicate a preferred method of compiling the needed information. The subcommittee further notes that the FMP as now written provides a basis for such research and data collection.

8. The Biological Opinion proposes that the FMP include provision for "restricting lobster fishing at any or all of the NWHI for the purpose of investigating and identifying the cause(s) of any incidental mortality" (p. 22). The subcommittee notes the decision of the Council to recognize in the FMP that the Endangered Species Action provides authority for emergency controls to be imposed by the Secretary of Commerce to prevent "taking" of endangered species. The Biological Opinion does not indicate why NMFS deemed it necessary and appropriate for the FMP to duplicate or reinforce this authority.

9. The Biological Opinion contains inaccurate descriptions of current State of Hawaii regulatory measures applicable to fishing in waters under State jurisdiction and to "imports" of fish (pp. 2, 3 & 14).

RECOMMENDATIONS

1. The Biological Opinion should be reviewed by monk seal and sea turtle experts. Further Council action would depend on the review comments received.

2. The Council's proposed conservation and management measures appear to be sufficient to address the concerns expressed in the Biological Opinion with respect to monk seals.

3. The conclusions of the Biological Opinion with respect to sea turtles (i.e., "insufficient information") can be questioned. The information in the Biological Opinion is not sufficient to demonstrate even a low risk of jeopardy to leatherback or green sea turtle mortality or "taking" by the fishery in the FCZ. The Council may wish to request clarification of the NMFS position, depending on comments from sea turtle experts on this matter.

SPECIFIC COMMENTS

1. On page 1, the opinion indicates that impacts on the green sea turtle and Hawaiian monk seal were considered; the opinion later discusses the status of humpback whales (pp.9-10) and leatherback turtles (p. 12), and potential impacts of the plan on sea turtles in general (pp. 15-16, 18-20) as well as green sea turtles specifically (p. 18). It is not clear, therefore, whether the "insufficient information" conclusion is meant to apply equally to green sea turtles and leatherback turtles.

2. State of Hawaii laws and regulations pertain to all fishing for spiny lobster in waters under State jurisdiction. These regulations include size limit, a closed season, gear size limits, and requirements that berried lobster be released and that lobsters be landed whole. These regulations also apply to State waters in the NWHI. Exemption from these seasonal and "whole lobster" regulations can be granted with a special product license issued by the Hawaii Board of Land and Natural Resources. The first full paragraph on page 3 could more clearly describe these current management measures.

3. The second full paragraph on page 4 reflects a misunderstanding as to the relationship of the OY definition, which is non-numerical; and the estimated range of harvests which is likely to be made under the management regime. The OY definition is not linked solely to encouragement of economic development; it reflects consideration of several economic, ecological, and social objectives. This is presented more clearly in the final FMP (Sec. 10.2).

4. The commercial spiny lobster fishery around the main islands also is pursued by SCUBA divers. The first paragraph on page 5 does not include this as a fishing activity.

5. As indicated, Kenyon (1972) is cited as attributing (p. 7) or implicating (p. 15) human disturbance as a cause of monk seal declines at Kure and Midway. It is worth noting that the article which was cited discusses such human behavior as beachcombing and walking with dogs (which in turn would chase seals); but fishing for lobster in the FCZ cannot be equated with these beach activities.

6. It is noted that page 8-10 appear to indicate the high importance of coral sand beaches, reefs, water areas adjacent to reefs and beaches, and nearshore waters to Hawaiian monk seals. The relative importance of the FCZ is not addressed.

7. The cited incident of entanglement and drowning of leatherback sea turtles in foreign gillnets in waters between 41°-43°N. and 175°-179°W. does not appear to be germane to the FMP. This area is far removed from the FCZ, and the lobster fishery involves traps rather than gillnets.

8. The opinion urges the Council to work with the State of Hawaii to develop regulations for State waters complementary to the measures in the FCZ (p. 14). This is being done. It should be emphasized, however, that the NWHI fishery to date has occurred predominately in the FCZ (i.e., beyond State jurisdiction).

9. The opinion expresses concern about the prospect for disturbance by "the presence of fishing vessels in the vicinity of preferred beaches and by crewmen ashore either for recreation or as the result of groundings" (p. 15). While these may be legitimate concerns, they

appear to be beyond the scope of the FMP. Access to the islands is tightly controlled by other agencies. Unauthorized or emergency landings will neither be promoted nor prevented by the FMP. Similarly, the "additional adverse impacts associated with groundings" (p. 15) cannot be prevented by the FMP; the risk of such groundings is present with and without the FMP. Note that the FMP does not propose "landing restrictions" (p. 15), but recognizes the authority of other agencies to control landings. Presumably the monk seal recovery plan being prepared (p. 9) will address this issue in some detail.

10. The opinion cites several authors who have observed monk seals entangled in lines or netting (p. 15). It is noted, however, that there is not a single documented instance available to the subcommittee of a Hawaiian monk seal becoming stuck in a lobster trap or entanglement in trap lines in the NWHI commercial fishery or in research efforts.

11. The cited situation of damage to lobster traps by sea turtles (p. 16) is new information, but it does not suggest harm or hazard to turtles. It suggests only that fishermen could suffer some loss of catch if the same situation arises in the NWHI.

12. The opinion indicates the fishery "has the potential of reducing the lobster populations to levels at which lobsters are no longer available to monk seals" (p. 17). This appears to be only very remotely possible. First, reproductive capacity is expected to be protected by the size limit and other measures. Second, if lobster populations are reduced sharply, the fishery likely will cease due to inadequate economic return long before total depletion of the lobster stocks. Third, there probably are several areas where lobster densities are too low to support commercial fishing, but high enough to support reproduction. Fourth, lagoons and nearshore shallow waters apparently have lobsters of all size classes and both sexes, but would not be subjected to fishing pressure if the Council's recommendations are adopted. In summary, the fishery may conceivably have the ability to decimate the lobster population, but it likely would be prohibitively expensive to achieve this result. More likely is that all lobsters less than 7.7 cm CL, and many lobsters above 7.7 cm CL, will continue to be subject to predation by monk seals under the FMP.

13. The conclusion that achieving the OY from the fishery could result in depletion of the lobster resource reflects misunderstanding of the OY definition and associated numerical range. The critical issue is whether the FMP protects reproductive capacity; if so, then the absolute level of harvest is immaterial so far as the lobster resource is concerned. Again, the range is neither a quota, nor a harvest target, nor a harvest guarantee.

14. The opinion indicates that the Council believes the FMP measures will "preclude" impacts on endangered species (p. 15). It would be more accurate to say the Council believes the FMP measures reduce the risk of impacts to a very low and acceptable level and reduce significantly the probability of impacts in comparison to conditions expected without a FMP, as is noted later in the opinion (p. 19).

Copies: Chairman, Western Pacific Council
Scientific and Statistical Committee Members

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Fisheries Center
Honolulu Laboratory
P. O. Box 3830
Honolulu, Hawaii 96812

CRUISE REPORT

VESSEL: Easy Rider charter cruise, 80-01

CRUISE PERIOD: October 2-17, 1980

AREA OF OPERATION: Northwestern Hawaiian Islands

TYPE OF OPERATION: Personnel from NMFS, working with a commercial lobster boat, Easy Rider Too, photographed the behavior of sublegal and berried spiny lobster and predators under normal commercial fishing operation. Fishing experiment at Bank "66" east of French Frigate Shoals was conducted to estimate stock size and a drifting night-light station was occupied.

ITINERARY:

October 3 - Departed Midway for Maro Reef.

October 5 - Arrived at Maro Reef.

October 6-8 - Worked with Easy Rider Too. Departed for French Frigate Shoals.

October 10 - Arrived at French Frigate Shoals. Made repairs and prepared for handline fishing while waiting out rough sea conditions.

October 11-14 - Fished on Bank "66". Departed for Nihoa.

October 15 - Trolled for live kawakawa and conducted a drifting night-light station. Departed for Kewalo.

October 17 - Arrived Kewalo; end of cruise.

MISSION AND RESULTS:

A. Predator-prey observation.

The alleged predation on sublegal and berried spiny lobster, Panulirus marginatus, thrown overboard from a commercial lobster vessel under working conditions was observed and documented with a 16-mm movie camera. Potential predators following the commercial lobster vessel included the white

ulua, Caranx ignoblis, Galapagos shark, Carcharhinus galapagensis, tiger shark, Galeocerdo cuvieri, and the ono, Acanthocybium solandri. Due to the small number of sublegals caught at Midway and Pearl and Hermes Reef, this experiment was conducted at Maro Reef.

B. Determine fish stock size at an isolated bank by handline fishing.

This experiment was conducted at Bank "66" east of French Frigate Shoals. A survey was conducted around the perimeter of the pinnacle to study the density and distribution of various species. A site was selected on the south side and intense fishing pressure was applied. Changes in catch rate and yield were monitored.

C. Night-light stations.

A night-light station was occupied at French Frigate Shoals while anchored. Opelu, Decapterus macarellus, and two newly hatched green sea turtles, Chelonia mydas, were attracted to the light. A drifting night-light station was conducted at Nihoa when the wind died, but nothing was attracted to the light.

D. Catch and transport live kawakawa to Kewalo Research Facility.

Four kawakawa caught trolling off Nihoa were transported live to the Kewalo Research Facility for various experiments. Several gonads that were examined were not developed enough to induce spawning.

E. Miscellaneous observations and activities.

1. Monk seal census was conducted at Sand Island, French Frigate Shoals (Oct. 10) and at Nihoa (Oct. 15).

2. Otoliths and ciguatera tissue samples were collected at handline stations at Bank "66."

3. The log on Occurrence of Birds, Aquatic Mammals and Fish Schools was maintained daily when traveling from 0800 to 1900.

4. Various fishing activities were photographed and documented on 16-mm movie film.

SCIENTIFIC PERSONNEL: James H. Uchiyama, Chief Scientist, NMFS, SWFC, HL
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Steven H. Kramer, Research Assistant, NMFS, SWFC, HL
John J. Naughton, Fishery Biologist, NMFS, SWR, WPPO

Submitted by: James H Uchiyama
James H. Uchiyama
Chief Scientist

Approved by: Richard S. Shomura
Richard S. Shomura
Director
Honolulu Laboratory

November 5, 1980

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Fisheries Center
Honolulu Laboratory
P. O. Box 3830
Honolulu, Hawaii 96812

CRUISE REPORT

VESSEL: Townsend Cromwell, cruise 77-02-75 (Part V)

CRUISE PERIOD: July 4 - August 17, 1977

AREA OF OPERATION: Northwestern Hawaiian Islands

TYPE OF OPERATION: The National Marine Fisheries Service (NMFS), the Hawaii Division of Fish and Game (HDFG), and the U.S. Fish and Wildlife Service (FWS) participated in the first joint cruise under the terms of the Tripartite Cooperative Agreement for the Survey and Assessment of the Living Resources of the Northwestern Hawaiian Islands. The purpose of this cooperative study is to provide a detailed survey and assessment of the biological resources of the islands to form a foundation upon which to base management decisions concerning long-range uses and preservation of these resources. On this cruise, the NMFS surveyed pelagic tuna resources in oceanic waters and the spiny lobster resource in bottom areas adjacent to the islands. The HDFG surveyed fisheries resources from the nearshore zone to the shoreline. The FWS, with input from the HDFG, surveyed seabird, land bird, and monk seal resources residing on the islands.

ITINERARY:

July 4
- a.m., depart Kewalo Basin. Begin TC-77-02, Part V (A).
- Travel to Nihoa.

July 5
- a.m., arrive Nihoa.
- Inshore fisheries resource surveys, wildlife surveys, offshore trolling survey, and environmental monitoring stations.
- p.m., travel to Necker Island.

July 6 - a.m., arrive Necker Island.

- Inshore fisheries resource surveys, wildlife surveys, offshore trolling survey, and environmental monitoring stations.

- p.m., travel to French Frigate Shoals.

July 7 - a.m., arrive French Frigate Shoals.

to - Inshore fisheries resource surveys, wildlife surveys, offshore trolling surveys, and environmental monitoring stations.

July 9 - p.m., travel to Gardner Pinnacle.

July 10 - a.m., arrive Gardner Pinnacle.

- Inshore fisheries resource surveys, wildlife surveys, offshore trolling surveys, and environmental monitoring stations.

- p.m., travel to Maro Reef.

July 11 - a.m., arrive Maro Reef.

to - Inshore fisheries resource surveys, wildlife surveys, lobster trapping, offshore trolling surveys, and environmental monitoring stations.

July 12 - p.m., travel to Laysan Island.

July 13 - a.m., arrive Laysan Island.

to - Inshore fisheries resource surveys, wildlife surveys, lobster trapping, offshore trolling surveys, and environmental monitoring stations.

July 14 - p.m., travel to Lisianski Island.

July 15 - a.m., arrive Lisianski Island.

to - Inshore fisheries resource surveys, offshore trolling surveys, and environmental monitoring station.

July 18 - Bad weather--inshore fisheries and wildlife surveys cancelled.

- p.m., travel to Pearl and Hermes Reef.

July 19 - a.m., arrive Pearl and Hermes Reef.

to - Inshore fisheries resource surveys, wildlife surveys, lobster trapping, offshore trolling surveys, and environmental monitoring stations.

July 24 - p.m., travel to Midway Islands.

July 25 - a.m., Arrive Midway Islands.

to - Clean up work areas, change NMFS, HDFG, and FWS personnel. End Part V (A).

July 26 - Begin Part V (B). Repair and setting up of scientific gear.

July 27 - Survey of Midway Islands.

- Inshore fisheries resource surveys and wildlife surveys.

- p.m., travel to Kure Island (NMFS).

July 28 - a.m., arrive Kure Island (NMFS).

- Environmental monitoring station.

- Travel to Midway Islands (NMFS). Survey at Midway Islands.

- Inshore fisheries resource surveys, wildlife surveys, offshore trolling survey, and environmental monitoring station.

- p.m., travel to Pearl and Hermes Reef.

July 29 - a.m., arrive Pearl and Hermes Reef.

- Inshore fisheries resource surveys, wildlife surveys, lobster trapping, and offshore trolling

to surveys.

July 30 - Bad weather--inshore fisheries and wildlife surveys cancelled.

August 1 - p.m., travel to Lisianski Island.

August 2 - a.m., arrive Lisianski Island.

to - Inshore fisheries resource surveys, wildlife surveys, lobster trapping, and offshore trolling surveys.

August 3 - p.m., travel to Laysan Island.

August 4 - a.m., arrive Laysan Island.

to - Inshore fisheries resource surveys, wildlife surveys, lobster trapping, and offshore trolling surveys.

August 5 - p.m., travel to Maro Reef.

August 6 - a.m., arrive Maro Reef.

to - Inshore fisheries resource surgeys, wildlife surveys, lobster trapping, offshore and inshore trolling surveys, and environmental monitoring stations.

August 9 - p.m. travel to Gardner Pinnacle.

August 10 - a.m., arrive Gardner Pinnacle.

- Wildlife surveys, offshore trolling survey, and environmental monitoring station.

- p.m., travel to French Frigate Shoals.

August 11 - a.m., arrive French Frigate Shoals.

to - Inshore fisheries resource surveys, wildlife surveys, offshore trolling surveys, and environmental monitoring station.

August 13 - p.m., travel to Necker Island.

August 14 - a.m., arrive Necker Island.

- Inshore fisheries resource surveys, wildlife resource surveys, offshore trolling survey, and environmental monitoring station.

- p.m., travel to Nihoa.

August 15 - a.m., arrive Nihoa.

- Inshore fisheries resource surveys, wildife surveys, offshore trolling survey, and environmental monitoring station.

- p.m., travel to Oahu.

August 16 - Travel to Oahu. Clean up work areas and prepare to end cruise.

August 17 - a.m., arrive Oahu. Calibration of flow meter. Enter Kewalo Basin; end of TC-77-02, Part V (A and B).

MISSIONS AND RESULTS: The objectives of this part of the cruise were to:

A. Conduct underwater transects and use other sampling methods to categorize study areas according to geographical zones and bottom types and thus establish resource sampling stations in nearshore waters (HDFG).

Initial selection and categorizing of certain study areas according to geographical zones and bottom types were made by the use of navigational charts and information obtained from prior studies. Additionally, on-site inspections made during this cruise were used to establish survey and sampling stations. Stations were established wherever feasible in "relatively" protected areas to avoid encounters with sharks. The majority of the stations were established between and along the edges of shallow reefs.

B. Conduct underwater transects to determine species composition and relative abundance of fishes, crustaceans, mollusks, corals, and algae in nearshore waters (HDFG and NMFS).

HDFG conducted a total of 39 underwater transects and 17 general observations to determine species composition and abundance of fishes and other marine life at selected sites in the nearshore waters of Northwestern Hawaiian Islands (from Nihoa to Midway Islands). The 56 transects and observations involved nearshore fish survey, splash zone (shoreline) surveys and algae stations. Bottom composition and coral data were also obtained during the fish surveys.

Preliminary evaluation of the fish survey data indicates that about 150 different species of fishes (139 of which have been identified) were recorded, of which 10 species were observed at all of the survey "islands" (Nihoa to Midway Islands) and included:

1.	Butterflyfish	Chaetodon fremblii
2.	Goatfish (moano)	Parupeneus multifasciatus
3.	Surgeonfish (manini)	Acanthurus triostegus
4.	Surgeonfish (kala)	Naso unicornis
5.	Wrasse (hinalea luahine)	Thalassoma ballieui
6.	Wrasse (hinalea lau-wili)	T. duperreyi
7.	Wrasse	T. purpureum
8.	Moorish idol (kihikihi)	Zanclus canescens
9.	Silversides (piha)	Iso hawaiiensis
10.	Rudderfish (nenue)	Kyphosus cinerascens

A total of 41 species of algae and 12 species of corals have been positively identified. Midway Islands were not surveyed for algae or corals.

Further identification of the fishes, algae, corals, and macro-invertebrates observed and/or collected or photographed is continuing.

NMFS conducted their surveys from shore bases established on Midway and Kure Islands, because of the unavailability of a compressor for the cruise.

After general observations in the different study areas identified characteristic local habitats, detailed assessments of the biota were made along 25-m transect lines.

Generally the fishes at Midway Islands and Kure Island (both are atolls) were found to be species that also occur in the southern part of the archipelago (with two notable exceptions, see below). Nevertheless, the marine communities in these widely separated locations are structured differently. Preliminary assessment of the data indicates that the difference is based largely on a combination of two distinct influences: 1) differing fishing pressures, and 2) differing environmental pressures. Considering these in order:

1. The differing fishing pressures are reflected in the much greater numbers of large predators at Midway and Kure Islands. Jacks (Caranx spp.) exceeding

100 lb are numerous adjacent to the reefs in waters less than 2 m deep, as are the distinctive large terminal male phases of many labrids (e.g., Coris spp., Bodianus bilunulatus, and others). The grouper, Epinephelus quernus, often exceeding 50 lb in weight, is prominent in many areas. The comparative absence of these forms in nearshore waters of the major Hawaiian Islands probably relates primarily to greater fishing pressures there. Similarly, the submarine caves at Midway and Kure house tremendous populations of large Myripristis spp. and Kuhlia sandvicensis. These forms are popular with spear fishermen, which probably accounts for the serious depletion of their populations in most parts of the high islands.

2. The differing relative numbers of certain other fish species in the marine communities of Kure and Midway, compared to communities at the island of Hawaii, appear primarily due to differing environmental pressures. These differing pressures also seem to account for the presence at Midway and Kure of species unknown from the high islands.

Despite the low water temperatures recorded at times of the year (between 15° and 18°C) at least one fish, the wrasse, Epibulus insidiator, which is widespread on more tropical atolls, is relatively common at Midway and Kure while being unknown from the more southerly high islands. On the other hand, the lower water temperatures at Kure and Midway introduce certain temperate-zone aspects to the northern habitats. Particularly notable is the lush growth of fleshy benthic algae on certain lagoon patch-reefs. Various fishes prominent on these reefs, notably the parrotfish, Scaridea zonarcha, are uncommon at the more tropical high islands. Additional evidence of more temperate conditions in certain aspects of the environment at Kure and Midway is the common occurrence there of the spotted beakperch, Oplegnathus punctatus. This is a popular recreational fish in Japan and has relatives in the temperate waters of South America, South Africa, and Southern Australia, but it has previously been unreported from Hawaii.

C. Conduct trammel, cast, or dip netting, or spearing to collect biological specimens and to supplement determination of species composition and relative abundance in nearshore waters (HDFG).

Some 57 specimens of fishes were collected to provide a total of 331 samples for identification, length-weight relationships, stomach content analysis, age (otolith) studies and fish toxin analysis. Some of these specimens will be provided to other agencies including the Bishop Museum, University of Hawaii, National Marine Fisheries Service, and the State Department of Health for analysis and evaluation. It is suspected that a few of the specimens collected may not have been previously reported from the main Hawaiian Islands.

D. Conduct lobster and crab trapping to determine distribution and relative abundance of spiny lobsters and crab species in nearshore waters (HDFG).

Lobster trapping was carried out by NMFS in deeper waters outside the shallow reefs and by HDFG in shallow waters inside or adjacent to the reefs. NMFS set four-trap strings consisting of three NMFS-California lobster pots and one HDFG lobster pot, which is a scaled down version of the California lobster pot. HDFG set traps individually but in groups of 2, 3, or 4 traps. When setting traps in conjunction with NMFS, HDFG usually used one NMFS trap per group and the rest HDFG traps; otherwise, all HDFG traps were used.

A listing of the number of lobster trapping operations by NMFS and HDFG, the number of traps used, and the catch of Panulirus marginatus are given in Table 1.

In general, the inshore catch per trap was less than that for the offshore traps, and the P. marginatus tended to be smaller. One P. penicillatus was taken in an inshore HDFG lobster trap.

While snorkeling on their inshore surveys, HDFG collected several small P. marginatus and large P. penicillatus for measurement and study by NMFS.

HDFG made two sets of four traps each on Maro Reef in an attempt to catch the kona crab, Ranina ranina; however, no catches were made.

Table 1.--Lobster trapping by NMFS in deeper waters and HDFG in shallower waters. Gear code for NMFS is number of trap strings (number of NMFS traps, number of HDFG traps), and that for HDFG is number of groups of individually set traps (number of NMFS traps, number of HDFG traps). Catch is for the number of Panulirus marginatus with the number tagged in parentheses.

Area	Date	NMFS		HDFG	
		Gear	Catch	Gear	Catch
Pearl and Hermes Reef	7/20/77	--	--	1(1, 2)	9(9)
	7/21/77	--	--	2(0, 2)	4(3)
	7/31/77	--	--	1(0, 4)	3(1)
Lisianski Island	8/2/77	--	--	1(0, 4)	2(2)
Laysan Island	7/13/77	2(3, 1)	20(9)	2(1, 2)	0
	8/4/77	2(3, 1)	30(11)		
Maro Reef	7/11/77	2(3, 1)	64(7)	2(1, 2)	16(0)
	8/6/77	2(3, 1)	45(25)	1(0, 4)	18(10)
	8/7/77	2(3, 1)[1]	8(2)	1(0, 4)	15(9)
	8/8/77			1(0, 4)	20(20)

[1]One set of traps was lost.

E. Conduct wildlife inventories and surveys of seabirds, endangered landbirds, sea turtles, and monk seals, with emphasis on food-prey relationships (HDFG and FWS).

Seabird surveys were conducted on all islands on both legs of the trip recording species diversity, and stage of nesting as well as abundance. Band numbers for sooty terns and blue-faced boobies, with a few regurgitant samples, were taken on Lisianski Island, Laysan Island, and French Frigate Shoals. In addition, some offshore seabird census techniques were tried and feeding flocks recorded.

Landbird census focused on the Laysan finch on Laysan Island and Pearl and Hermes Reef utilizing established census transects. Laysan duck counts were also made around the inner lagoon of Laysan Island. Nihoa finch and millerbirds were surveyed along established transects on Nihoa.

All sea turtle sightings were recorded as to location and size of the turtle throughout the trip. Green turtles hauled out on islands were included in the normal seal surveys. One turtle census was made by boat around Lisianski noting 26 sighted along the one round island transect 20-30 yd offshore. Just off the beach at Lisianski, a 10-ft tiger shark was seen in fast pursuit of what we believed to be a turtle. Stomach analysis of an 8-ft tiger shark caught at Laysan produced four fledgling Laysan albatross. Several green turtle tags were read at Pearl and Hermes Reef.

Monk seals were surveyed on all islands on both legs of the trip, recording number, sex, and age whenever feasible so as to cause no disturbance to the seals. Larger islands allowed landing and survey from the interior whereas smaller islands often necessitated surveys from a boat. A summary of the results of this survey is given in Table 2. A large adult seal with gooseneck barnacles on the neck and back was seen around the ship one evening while anchored off Maro Reef. This same seal was observed eating the internal organs of a dead 4-ft gray reef shark tied off the stern of the ship. Two seal tags were read on the second leg of the trip at Gardner Pinnacles and French Frigate Shoals.

Table 2.--Monk seal survey by FWS and HDFG.

Location	Number of seals observed (unweaned pups) First leg (7/4-26)	Second leg (7/26-8/17)
Nihoa	12	6
Necker Island	30	(no survey)
French Frigate Shoals	223 (22)	222 (11)
Gardner Pinnacles	6	4
Maro Reef	6	4
Laysan Island	199	ca. 200 (2)
Lisianski Island	87	80
Pearl and Hermes Reef	26	25
Midway Islands	3	2 (1)
Total	592 (22)	543 (14)

F. Conduct offshore trolling surveys for tunas and other pelagic species (NMFS).

The trolling surveys were conducted using nine trolling lines with three 6 oz lead head lures on the port outrigger, three 4 oz lead head lures on the starboard outrigger, and three 2 oz lead head lures directly off the stern. Feather colors were red and white, or yellow, barred, and white. The surveys were conducted at 7 knots per hour roughly between the 30- and 100-fathom depth contours around each of the emergent islands visited on the cruise.

The best catches of kawakawa, Euthynnus affinis, and yellowfin tuna, Thunnus albacares, occurred where bottom depth increased rapidly. Most tuna schools were not accompanied by bird flocks, and fishing under bird flocks was generally unproductive. However, birds were abundant in the areas yielding good catches. Yellowfin tuna were generally taken in deeper waters than were kawakawa, and the largest sized individuals of each species were generally taken in deeper waters. Even though not specifically sought, a fair number of wahoo, Acanthocybium solandri, were taken.

When trolling in depths shallower than 30 fathoms, large white ulua, Carangoides ajax, were commonly taken. We suspect that trolling in depths shallower than 30 fathoms with heavy trolling gear would have resulted in much larger catches of this species.

In order to study the migration of tunas in this area, all viable kawakawa, yellowfin tuna, wahoo, and skipjack tuna, Katsuwonus pelamis, were tagged using small dart tags and stainless steel applicator needles. Attempts to use a tagging gun and clips of anchor tags were not very productive.

Samples of the edible portion of yellowtail or kahala, Seriola dumerilii, and rainbow runner or Hawaiian salmon, Elagatis bipinnulatus, were collected for testing for ciguatera poisoning. Otoliths were collected from kawakawa and wahoo for age and growth studies.

Statistics on the catch, number tagged, otolith samples taken, and ciguatera samples taken by species and by island area are given in Table 3. Combining all areas, 10 different species were captured:

Kawakawa	Euthynnus affinis
Skipjack tuna	Katsuwonus pelamis
Yellowfin tuna	Thunnus albacares
Wahoo	Acanthocybium solandri
Mahimahi	Coryphaena hippurus
Rainbow runner	Elagatis bipinnulatus
Yellowtail	Seriola dumerilii
White ulua	Carangoides ajax
Blue crevally	Caranx melampygus
Barracuda	Sphyraena helleri

Table 3.--Statistics on trolling catch, number tagged, otolith samples taken, and ciguatera samples taken by species and island area.

Area	Species	Catch	Number tagged	Otolith samples	Ciguatera samples
Pearl and Hermes Reef	Kawakawa	58	54	--	--
	Skipjack tuna	5	2	--	--
	Yellowfin tuna	170	139	--	--
	Wahoo	12	1	10	--
	Mahimahi	1	--	--	--
	Rainbow runner	6	--	--	1
	White ulua	21	--	--	--
	Total	273	196	10	1
Lisianski Island	Kawakawa	93	73	10	--
	Yellowfin tuna	10	7	--	--
	Wahoo	3	--	1	--
	White ulua	10	--	--	--
	Total	116	80	11	
Laysan Island	Kawakawa	180	151	13	--
	Yellowfin tuna	60	29	--	--
	Wahoo	9	1	2	--
	Skipjack tuna	9	6	--	--
	Rainbow runner	2	--	--	2
	Yellowtail	4	--	2	2
	White ulua	5	--	--	--
	Blue crevally	5	--	--	--
	Barracuda	12	--	--	--
	Total	286	187	17	4

Table 3.--Continued.

Area	Species	Catch	Number tagged	Otolith samples	Ciguatera samples
Maro Reef	Kawakawa	90	54	10	--
	Yellowfin tuna	3	--	3	--
	Wahoo	2	--	2	--
	Rainbow runner	1	--	1	1
	Yellowtail	13	--	4	4
	White ulua	10	--	--	--
	Blue crevally	7	--	--	--
	Total	126	54	20	5
Gardner Pinnacles	Kawakawa	13	11	1	--
	Yellowfin tuna	3	3	--	--
	Total	16	14	1	
French Frigate Shoals	Kawakawa	167	140	12	--
	Skipjack tuna	7	3	--	--
	Yellowfin tuna	10	7	--	--
	Wahoo	1	1	--	--
	Blue crevally	3	--	3	3
	Total	188	151	15	3
Necker Island	Kawakawa	109	72	11	--
	Skipjack tuna	5	2	--	--
	Yellowfin tuna	3	3	--	--
	Wahoo	2	--	2	--
	Mahimahi	1	--	--	--
	Total	120	77	13	
Nihoa	Kawakawa	158	124	9	--
	Skipjack tuna	1	--	--	--
	Yellowfin tuna	9	7	--	--
	Wahoo	9	7	--	--
	Total	177	138	9	
Total	Kawakawa	868	679	66	--
	Skipjack tuna	27	13	--	--
	Yellowfin tuna	268	195	--	--
	Wahoo	38	10	17	--
	Mahimahi	2	--	--	--

Table 3.--Continued.

Area	Species	Catch	Number tagged	Otolith samples	Ciguatera samples
	Rainbow runner	9	--	1	4
	Yellowtail	17	--	6	6
	White ulua	46	--	--	--
	Blue crevally	15	--	3	3
	Barracuda	12	--	--	--
	TOTAL	1,302	897	93	13

A trolling survey was conducted inside the reef at Maro Reef using two trolling lines with 1 oz lead head lures trolled from the HDFG's 21-ft skiff. A number of kawakawa schools were seen and fished within the reef, generally adjacent to shallow coral heads. A total of seven kawakawa were tagged and released.

G. Collect plankton and forage organisms with plankton nets and midwater trawls in offshore waters (NMFS).

Midwater trawl hauls were completed at the offshore environmental monitoring stations at French Frigate Shoals (23°44'N, 166°48'W), Lisianski Island (26°11'N, 173°24'W), and Kure Island (27°50'N, 176°02'W). These stations were carried out at night using a Cobb pelagic trawl. Substantial gear failure occurred at the Kure Island station making it impossible to complete the last station at Nihoa.

Inshore stations, consisting of 100-m deep oblique tows of a 45-cm bongo net with 0.505 µ mesh netting and cod end and an XBT cast to 450 m were completed at seven daylight and five environmental monitoring stations.

Offshore stations, consisting of 200-m deep oblique tows of a 45-cm bongo net with 0.505 µ mesh netting and cod end, an XBT cast to 750 m, and a CTD cast to 1,000 m, were completed at four daylight and nine night environmental monitoring stations.

H. Conduct as time allows deepwater lobster trapping to determine availability and relative abundance of demersal fish and shellfish (NMFS).

Covered under D.

SCIENTIFIC PERSONNEL: First crew (July 4-25)

Robert A. Skillman, Chief Scientist, Fishery Biologist
Robert B. Moffitt, Research Assistant

Brent Giezentanner, Wildlife Biologist, FWS

Henry Sakuda, Chief Scientist, Marine Section Chief, HDFG
Fred Ball, Aquatic Biologist, HDFG
Brian Kanenaka, Aquatic Biologist, HDFG
Alvin Katekaru, Aquatic Biologist, HDFG
Henry Okamoto, Aquatic Biologist, HDFG
Dennis Shinno, Aquatic Biologist, HDFG
David Woodside, Wildlife Biologist, HDFG

Second crew (July 27-August 17)

Robert A. Skillman, Chief Scientist, Fishery Biologist
Darryl T. Tagami, Research Assistant

Richard A. Coleman, Wildlife Biologist, FWS

Paul Kawamoto, Chief Scientist, Aquatic Biologist, HDFG
James Murphy, Fisheries Technician, HDFG
Henry Okamoto, Aquatic Biologist, HDFG
Eric W. Onizuka, Aquatic Biologist, HDFG
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Tony Chess, Fishery Biologist, NMFS, Southwest Fisheries Center, Tiburon Laboratory
Edmund Hobson, Fishery Biologist, NMFS, Southwest Fisheries Center, Tiburon Laboratory

Submitted by: Robert A. Skillman
Robert A. Skillman
Chief Scientist, Part V

Approved by: Richard A. Shomura
Richard S. Shomura
Director, Honolulu Laboratory

September 2, 1977

University of Hawaii at Manoa

Department of Zoology
Edmondson Hall • 2538 The Mall
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December 14, 1979

MEMO TO: Interested Fish Scientists

FROM: James D. Parrish, Leader
Hawaii Coop. Fishery Research Unit

SUBJECT: Available Specimens from French Frigate Shoals

We returned in November from French Frigate Shoals with a large number of frozen specimens of fish of many species. A rough list from field notes is attached. In many cases we have a fair range of sizes and both sexes, including some terminal males. Although many fish were speared, most are otherwise in good condition, mostly with life colors. These are now in our frozen storage in Edmondson Hall.

Over the next several months we will work these fish up, preserving guts and some other viscera and some otoliths for further study, discarding most of the remaining carcasses after taking the data we want. We have already made arrangements with NMFS regarding tissue samples they would like for ciguatera work. If you have use for any of the specimens aside from what we need from them (e.g. for photographs, taxonomic work, tissue samples etc.), feel free to contact me to see if we can work out some shared use of the material (telephone 948-8350).

J. D. Parrish

JDP:mi
Att.

FRENCH FRIGATE SHOALS

E/TIME OCT - NOV 79

OBSERVER PARRISH/TAYLOR SEAGENT PROJECT NI/R-4

COMMENTS: SPECIES LIST OF FISH CAUGHT

Sub-Total	SPECIES	Rank	Total		SPECIES	TOTAL
	Decapterus macarellus ?		1		Synodus saurida sp. gracilis	1
	Gnathanodon speciosas		1		Conger cinereus	1
	Caranx melampy.		8		Gymnothorax sp.	3
	Caranx "ignobilis"		1		Moray eel	2
	Gymnothorax undulatus		38		Gymnothorax eurostus (?)	4
	Fistularia sp.		1		Aulostomus chinensis	8
	Adioryx diadema		43		Adioryx spinifer	2
	Apogon spp.		206		Flammeo summa	4
	Lutjanus vaigiensis		1		Myripristis sp.	7
	Mulloid. flavolin.		5		Lutjanus kasmira	1
	Mulloid. vanico.		6		Plectropops lima	1
	Parupen. bifasc.		2			
	P. chrysery.		9			
	P. multifasc.		82			
	P. pleurostigma		25			
	P. porphyr.		2			
	Kyphosus ciner.		10			
	Centropyge potteri		9			
	Chaetodon fremb.		26		Chaetodon auriga	3
	C. miliaris		68		C. quadrimaculatus	1
	C. ornatiss.		1		C. Kleini	1
	C. trifasciatus		2		C. ephippium	2
	C. unimacul.		1		C. lunula	1
	Forcipiger flav.		3			
	Abudef. abdomin.		7			
	C. ovalis (chromis)		18			
	Dascyllus albisella		6			
	Plectroglyph. john.		1			
	Pomacen. jenk.		84			
	Anampses cuv.		21		Anampses chrysocephalus	7
	Bodianus. bilun.		52			
	Cheil. rhodochrous		51		Cheil bimaculatus	1
	Coris flavov.		14		Coris venusta	13
	Epibulus insid.		3		Hemigteron otus lecluse	1
	Macropharyngodon		13			
			4			

FRENCH FRIGATE SHOALS - Apr

DATE/TIME

OBSERVER

COMMENTS: SPECIES LIST OF FISH CAUGHT

Sub-total	SPECIES	Rank	Total		SPECIES				TOTAL		
	Pseudocheil. evanidus		1								
	Stethoj. balt.		16		Turtle pieces ?						
	Thalass. ball.		83								
	T. duperreyi		61								
	Gomphosus varius		1								
	Scarus perspic.		23		Scarus sp.				1		
	Scarus lauia		24		Calotomus spinidens			?	4		
	Cirrhitops fasc.		1								
	cirrhites pinnulatus		1								
	Cheilodactylus vittatus		2								
	Acanth. achilles		3								
	A. dussumieri		1								
	A. nigroris		21								
	A. triosteg us		5								
	Ctenoch. strig.		16								
	Naso lituratus		5								
	N. unicornis		7								
	Zebras. flavesc.		2								
	Zanclus cornutus		4								
	Taeniañotus triacanthus		2								
	Pervagor spilos.		11		Cantherhines verecund.				1		
	Canthig. jactator		81								
	C. rivulata		1								
	Ostracion meleagris		1								
	Scorpaena sp.		3								
	Scorpaenopsis brevifrons		1								
	Octopus		1								
	Gastropod		1								
	slipper lobster		1								
	Hermit crab		30								
	Crab		5								

The New Grounds
Slimbridge
Gloucester
GL2 7BT

Tern Island, French Frigate Shoals, Hawaii.

With the Compliments of

Jane Fenton

The Resolutions drafted at Costa Rica have all been sitting at Morges awaiting action. Earl has asked me to deal with them and I will go through them as soon as they arrive. Meanwhile I hope this letter will fill the gap.

cc: Dr.F.Wayne King
Dr.George Balazs
Richard Fitter
Earl Baysinger

JF: 1.6.79

From : Sir Peter Scott CBE DSC

THE NEW GROUNDS
SLIMBRIDGE
GLOUCESTER GL2 7BT

Tele : Cambridge (045-389) 333
Cables : Wildfowl Dursley

May 25th 1979

Dear Mr Giezentanner

Tern Island, French Frigate Shoals, Hawaii

At the recent meeting of the IUCN Survival Service Commission in Costa Rica members were concerned to hear of the U.S. Fish and Wildlife Service proposal to establish a commercial fishing station on Tern Island, which is part of the Hawaiian Islands National Wildlife Refuge, when the Coast Guard LORAN Station closes on 1 July 1979

Over 95% of the green turtles breeding in the Hawaiian chain occur at French Frigate Shoals and the area also contains a large concentration of breeding Hawaiian monk seals. The SSC is concerned that the proposed fishing station might jeopardise the wildlife in the area, in particular these two species which are protected by the U.S. Endangered Species Act. It would seem therefore inappropriate to set up such a station within a National Wildlife Refuge and the Commission would urge the U.S. Fish and Wildlife Service to make a very careful assessment of the situation before proceeding with this proposal.

Yours sincerely,

Peter Scott.

Chairman
Survival Service Commission

NEW YORK ZOOLOGICAL SOCIETY

New York Zoological Park
New York Aquarium

Bronx Zoo
Bronx, New York 10460
Telephone: (212) 220-5100

Center for Field Biology and Conservation
Osborn Laboratories of Marine Sciences

2 May 1979

Jane Fenton
The New Grounds
Slimbridge
Gloucester GL2 7BT

Dear Jane:

During the SSC meeting in Costa Rica a resolution was drawn up condemning the establishment of a commercial fishing station Tern Island at French Frigate Shoals, one of the units of the Hawaiian Islands National Wildlife Refuge (see the enclosed correspondence). Has the resolution or a letter been sent either from Sir Peter or from Morges? If not, would it be possible to have a letter sent immediately to Brent Giezentanner (U.S. Fish and Wildlife Service, 300 Ala Moana Boulevard, P.O. Box 50167, Honolulu, Hawaii 96850).

Sincerely,

Wayne King

Enc.
cc: G. Balazs
E. Baysinger

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Fisheries Center
Honolulu Laboratory
P. O. Box 3830
Honolulu, Hawaii 96812

December 31, 1979

CRUISE REPORT

VESSEL: Townsend Cromwell, cruise 79-05 (TC-86)

CRUISE PERIOD: December 6-12, 1979

AREA OF OPERATION: Kawaihae coast of the island of Hawaii and Penguin Banks (Figure 1).

TYPE OF OPERATION: Vessel shakedown and testing experimental bottom longline and newly designed shrimp pots in waters of the Hawaiian Islands.

ITINERARY: December 6 - Departed Kewalo Basin, Honolulu.

7 - Arrived Kailua-Kona, Hawaii to embark Commander John D. Stachelhaus and depart for operations off Kawaihae.

12 - Arrive Kewalo Basin, Honolulu. End of cruise.

MISSIONS AND RESULTS:

A. Conduct bottom fishing operations using experimental bottom longline to determine its effectiveness for capturing snappers, groupers, and carangids, and establish standard operational procedures for its use on future cruises.

1. Two types of bottom longline gear were set during the cruise. The first type consisted of single hook droppers with 100 hooks to a set (Figure 2), and the second type consisted of 5 hooks to a dropper with 100 hooks to a set (Figure 3).

a. Kawaihae. Two sets with the single hook dropper bottom longline and three sets with the five-hook dropper bottom longline were made off the Kawaihae coast in depths ranging from 60 to 120 fathoms. A total of six fish were caught off Kawaihae:

three Pristipomoides filamentosus, two Aphareus rutilans, and one Gymnothorax berndti.

b. Penguin Banks. One set using the five-hook dropper bottom longline was made at Penguin Banks in 60-85 fathoms. A total of six fish were caught at Penguin Banks: one P. filamentosus, 1 P. sieboldii, two Etelis marshi, and two E. carbunculus.

2. In conjunction with the bottom longline operations, six handline stations were occupied in an attempt to locate fish concentrations. Three stations were off Kawaihae and the remainder on Penguin Banks. A total of 16 fish were caught by handline: 3 P. filamentosus, 2 P. zonatus, 4 P. sieboldii, 5 E. marshi, 1 E. carbunculus, and 1 Epinephelus quernus.

B. Conduct trapping operations using the newly designed shrimp pots to determine their effectiveness for capturing caridean shrimp in waters ranging from 100 to 600 fathoms.

The new shrimp traps are constructed in the shape of a "kamaboko" or cylinder cut in half, lengthwise and measure 63.5-cm wide, 91.4-cm long, and 43.2-cm high. The frames, made of welded 0.6-cm diameter reinforcing bars, are wrapped with 2.5- x 1.3-cm, 18-gage welded wire. Two entry cones with 10.2-cm openings are located at each end of the traps with the cones extending 30.5 cm into the traps. The body of the traps are wrapped with either canvas or nursery saran (50% shading). The traps used formerly were rectangular in shape, 61.0-cm wide, 91.4-cm long, and 45.7-cm high. As in the new traps, the frames were made with welded 0.6-cm diameter reinforcing bars and had two entry cones, one at each end. The traps were covered with 1.3- x 1.3-cm hardware cloth and the body of the traps was wrapped with burlap. The shrimp traps are set in depths of 150 to 500 fathoms, often on sloping bottom very close to deep "drop-offs." On past cruises, several strings (four traps to a string) of the old rectangular traps were lost when set near deep "drop-offs." These traps probably were pushed by currents and either slid or tumbled over the deep "drop-offs." The new traps, which have a "half-moon" top and a flat bottom, offer less resistance to currents as compared to the old rectangular traps, and are less likely to slide or tumble on the bottom.

Four shrimp trap stations were occupied, all off Kawaihae, in depths from 183 to 460 fathoms. One string consisting of four traps was used at one station, three strings were set at a second station, and four strings were set at two stations. The shrimp catch included 2,405 Heterocarpus laevigatus, 2,333 H. ensifer, and 3 unidentified shrimp. In addition, 2 congrids, 2 synophobranchids, 2 starfish, and 42 assorted crabs were caught in the traps. Shrimps were caught at all stations occupied.

C. Calibrate temperature (-5° to 45°C) and depth (to 400 m) digital indicator, check recorder output, and establish standard operational procedures for its use on future cruises.

Due to the late delivery of the digital indicator and recorder output, this operation was cancelled.

D. Collect fish tissues for ciguatoxin studies.

Sets of tissue samples for ciguatoxin study were collected from 27 fishes. A set of tissue samples consisted of material from (a) dorsal anterior musculature, (b) ventral musculature, (c) gonad, and (d) postventral musculature. Samples were taken from 26 lutjanids and 1 serranid.

E. Other observations and activities.

1. All bird flocks and fish schools encountered during daylight hours were recorded. Three bird flocks with unidentified fish schools were sighted en route to and from Kawaihae. One bird flock with unidentified fish school was sighted off Keahole Point. All bird flocks encountered were small flocks numbering 75 birds or less.

2. Surface trolling for pelagic fishes was conducted during daylight runs. In 49.5 line-hours of trolling, no strikes were recorded.

SCIENTIFIC PERSONNEL: National Marine Fisheries Service, Southwest Fisheries Center, Honolulu Laboratory

Paul M. Shiota, Chief Scientist, Research Assistant (December 6-12)
Victor A. Honda, Research Assistant (December 6-12)
Reginald M. Gooding, Fishery Biologist (December 6-12)
Robert B. Moffitt, Research Assistant (December 6-12)
Linda C. Hubbell, Research Assistant (December 6-12)

Pacific Tuna Development Foundation

Walter N. Ikehara, Cooperating Scientist (December 6-12)

Submitted by: Paul M. Shiota
Paul M. Shiota
Chief Scientist

Approved by: Richard S. Shomura
Richard S. Shomura
Director, Honolulu Laboratory

Attachments

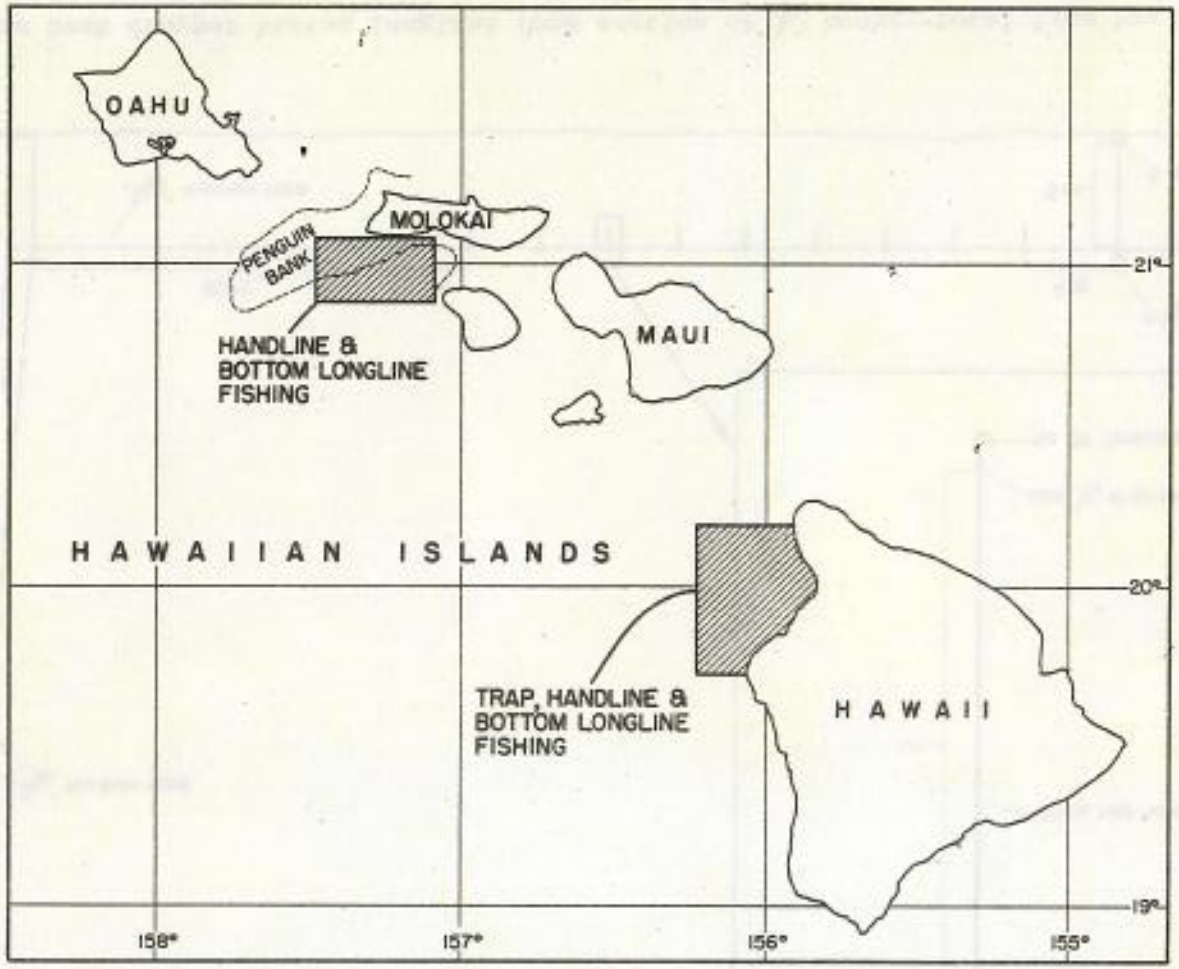


Figure 1.--Area of operation, Townsend Cromwell, cruise 79-05 (TC-86).

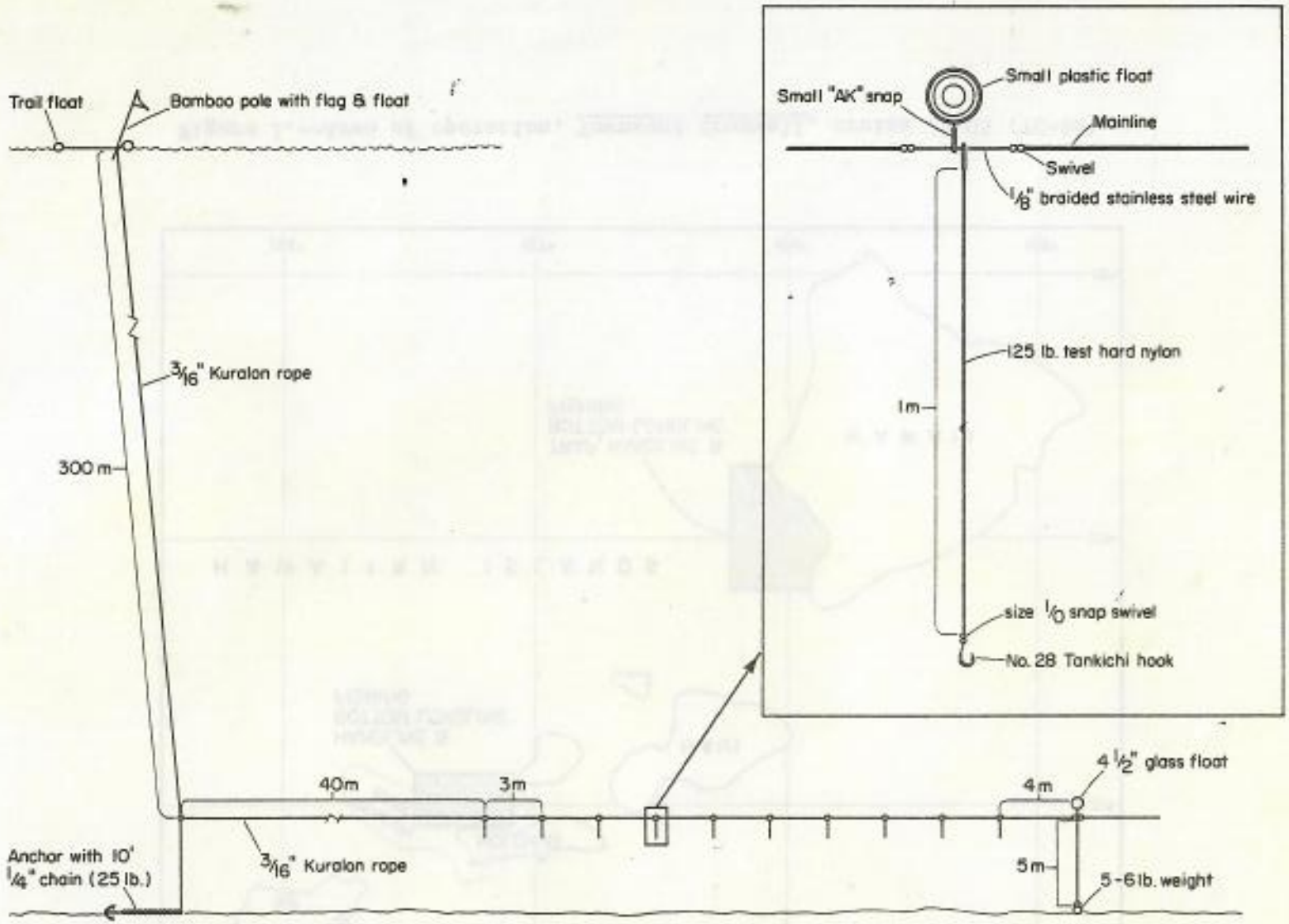


Figure 2.--One hook dropper bottom longline (one section of 10 hooks--total line has 10 sections).

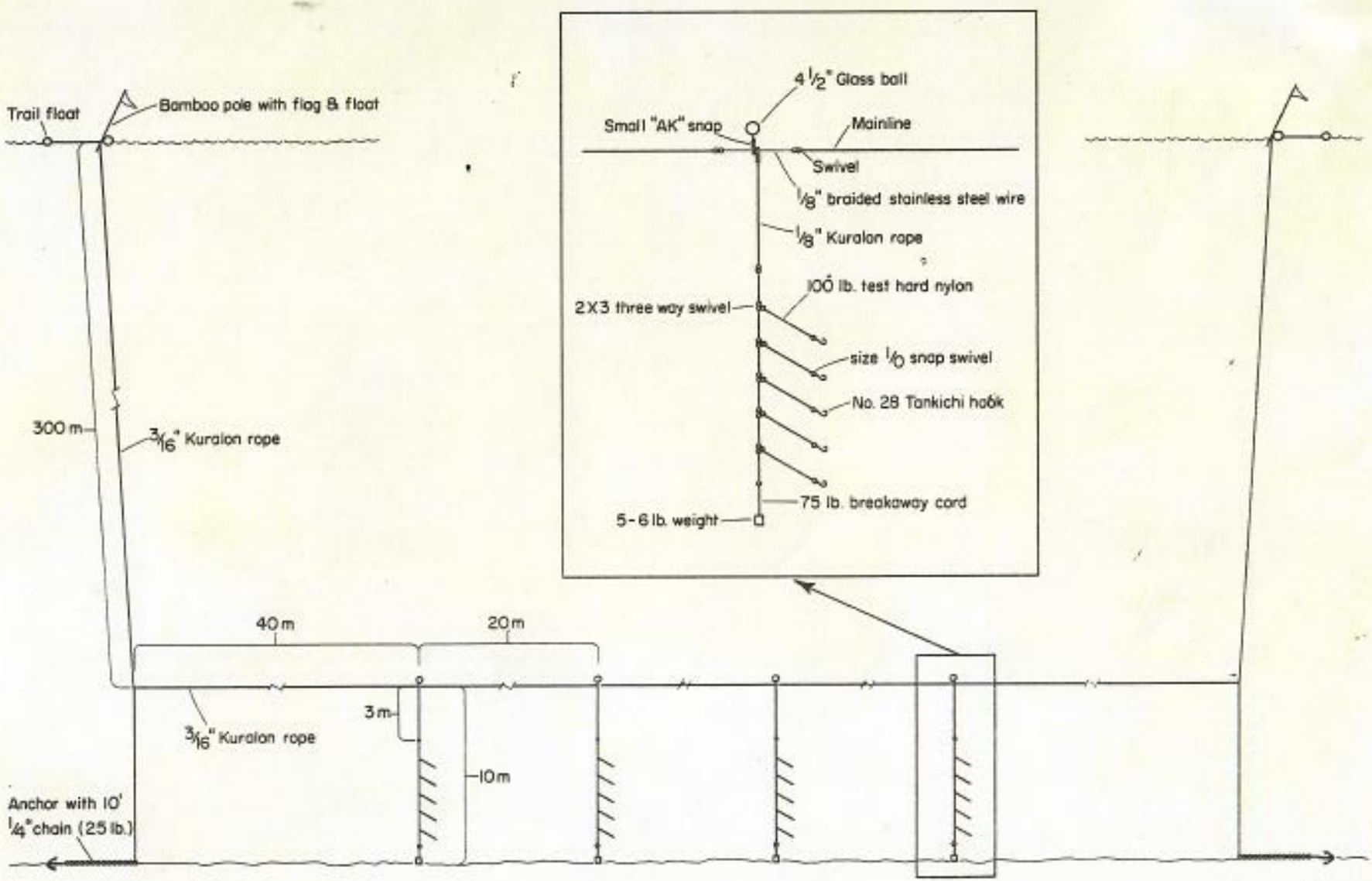


Figure 3.--Five hook dropper bottom longline (showing 4 droppers--total line has 20 droppers).

Mr. George Balazs

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Fisheries Center
Honolulu Laboratory
P. O. Box 3830
Honolulu, Hawaii 96812

October 23, 1979 F142:HSHY

TO: Distribution

FROM: Heeny S. H. Yuen, Vessel Coordinator, Honolulu Laboratory

SUBJECT: Townsend Cromwell cruise schedules

Enclosed is a revised schedule of cruises for the research vessel Townsend Cromwell for FY 1980.

Enclosure

Revised October 22, 1979

TOWNSEND CROMWELL CRUISE SCHEDULE

Fiscal Year 1980

Cruise No.	Days Start	Days End	Days at sea	Shore days	Days between cruises	Area and type of operation
TC-79-04 (TC #85)	continued	10/25/79	23	2		The Samoas - aggregation objects; insular resources
	10/26/79	12/02/79			38	Shipyard, Honolulu
TC-79-05 (TC #86)	12/03/79	12/11/79	9			Hawaiian Islands
	12/12/79	1/02/79			22	In port, Honolulu
TC-80-01 (TC #87)	01/03/80	03/06/80	58	6		Eastern tropical Pacific - porpoise survey
	03/07/80	03/23/80			17	In port, Honolulu
TC-80-02 (TC #88)	03/24/80	05/14/80	47	5		NWHI - Insular resource survey
	05/15/80	05/27/80			13	In port, Honolulu
TC-80-03 (TC #89)	05/28/80	07/31/80	59	6		NWHI - Part I. Bird survey; Part II. Nearshore resource survey
	08/01/80	08/13/80			13	In port, Honolulu
TC-80-04 (TC #90)	08/14/80	(09/30/80)	44	4		NWHI - Part I. Productivity studies; Part II. Insular resource survey (continues into FY-81)
	Totals		240	23	103	366

United States Department of the Interior

FISH AND WILDLIFE SERVICE
300 ALA MOANA BOULEVARD
P. O. BOX 50167
HONOLULU, HAWAII 96850

IN REPLY REFER TO:
PIA

OCT 16 1979

A copy of the attached correspondence is provided in recognition of your current or potential involvement/interest in one or more of the items addressed.

Sincerely,

Pacific Islands Administrator

Attachments

CONSERVE AMERICA'S ENERGY

Save Energy and You Serve America!

PIA

OCT 5 1979

Western Pacific Regional Fishery
Management Council
1164 Bishop Street, Room 1608
Honolulu, Hawaii 96813

Attn: J. Marr, Executive Director

Dear Mr. Marr: This is in response to your memorandum dated September 4, 1979 requesting response to Mr. Alika Cooper's questions.

Item 3. WWhy aren't domestic fishermen allowed access to the Leeward Islands, especially French Frigate Shoals?"

French Frigate Shoals and other Leeward Islands were included in the Hawaiian Islands Reservation for the Preservation of Native Birds in 1909 by Executive Order 1019. In 1940, Presidential Proclamation No. 2416 changed the Hawaiian Islands Reservation to the Hawaiian Islands National Wildlife Refuge. The National Wildlife Refuge System Administration Act of 1966 provides guidelines for the management of National Wildlife Refuges. Under this, the only uses which the Secretary of the Interior is authorized to permit are those uses which "are compatible with the major purposes for which such areas were established." In other words, uses which can be permitted on the Hawaiian Islands NWR are only those which are compatible with the use of the refuge as a preserve and breeding ground for native birds. Commercial fishing is not known to be a compatible use. However, a 5-year study of wildlife and fisheries resources in the Leewards is now being conducted. If the results of this study show that commercial fisheries is a compatible use, then legally the Secretary could authorize it.

Item 4. "Why is the bombing of Kaula and Kahoolawe allowed and what are the effects?"

In February 1978, the Division of Law Enforcement of the U.S. Fish and Wildlife Service in Honolulu was advised that jet aircraft from Kaneohe Marine Corp Air Station had deopped several bombs on a sooty tern colony on Kaula Island. The incident was investigated and referred to the U.S. Attorney's office in Honolulu for consideration for

for prosecution. The U.S. Attorney's office has, to date, filed no charge.

The U.S. Navy has applied to the U.S. Fish and Wildlife Service for a permit that would allow the take of migratory birds on Kaula Island incidental to bombing operations. The Fish and Wildlife Service directed the Navy to enter into formal discussions (as required by Section 7 of the Endangered Species Act) with National Marine Fisheries Service to resolve any real or potential conflicts with endangered species found on or around Kaula Island. On September 13, 1979, a biological opinion was rendered by National Marine Fisheries Service and on September 25, 1979, Vice Admiral McVee agreed to accept the time constraints on bombing at Kaula Island that were imposed by National Marine Fisheries Service. The Fish and Wildlife Service is now considering the pros and cons of the issuance of a migratory bird permit.

The Fish and Wildlife Service is not aware of any Fish and Wildlife Service enforced laws being violated by the bombing and/or shelling of Kahoolawe. The National Marine Fisheries Service biological opinion of the bombing of Kahoolawe stated..."there is no indication that the continued use of Kahoolawe as a target island is likely to jeopardize the humpback species, provided that the Navy restricts live ordnance detonation to the existing target area."

Item 15. "American Indian Religious Freedom Act of 1978 effects all concerned with fisheries."

The National Marine Fisheries Service has provided your office information on this point. We concur with their statement.

Although the above items respond to the items you have marked for our reply, we have the following additional comments on issues raised in the subject Alika Cooper letter.

Page 2, paragraphs 4 and 5 of the letter are discussed in part in Item 3 above, but obviously the entire issue of the refuge boundary is more complex. We are currently drafting a more comprehensive statement on the boundary. This will be available for public distribution following a legal review by our Solicitor and should be ready after the first of the year.

Page 2, last paragraph, and Page 3, paragraphs 1 and 2 are not substantiated historically or legally. Evidence confirms the historic presence of Hawaiians on Nihoa and Necker, but we are aware of no archaelogical evidence to indicate that Hawaiians lived on French Frigate Shoals or even knew of its existance. Similarly, legal evidence does not substantiate Cooper's remarks on government. Hawaii, by its cession to the United States at the time of annexation, relinquished to the United States all title and rights in Hawaii on public or crown lands. Accordingly, the effect of Executive Order 1019 setting aside lands of certain of the Leeward Islands, including Tern Island, was that title to all such lands was and is in the United States and such land was not subject to disposition by the Territory of Hawaii.

Page 3, paragraph 3, first sentence states that "French Frigate Shoals especially, is rich in fish resources." The State Division of Fish and Game is studying this as part of their research under the tripartite agreement, and they should be able to evaluate what fish resources are actually at French Frigate Shoals and in what quantities.

If we can contribute additional material to your consolidated response to Alika Cooper, please let us know.

Sincerely yours,

Maurice H. Taylor

ACTING Pacific Islands Administrator

LCummings/JBartee/Taylor:mb:10-5-79

Territory of Hawaii
Board of Commissioners of Agriculture and Forestry
Honolulu

DIVISION OF FISH AND GAME

RESOLUTION NO. 7

DECLARING THE HAWAIIAN ISLANDS NATIONAL WILDLIFE REFUGE A WILDLIFE REFUGE

WHEREAS, on December 27, 1951 the Board of Commissioners of Agriculture and Forestry, Territory of Hawaii, and the Fish and Wildlife Service, U. S. Department of Interior, did enter into an agreement for the management of the Hawaiian Islands National Wildlife Refuge; and

WHEREAS, the Fish and Wildlife Service in said agreement did authorize the Board of Agriculture and Forestry to designate lands and waters of the Hawaiian Islands National Wildlife Refuge as a refuge for the protection of migratory birds and other wildlife under laws and regulations of the Territory of Hawaii; and

WHEREAS, in accordance with Regulation 15, Division of Fish and Game, Board of Agriculture and Forestry, Section 1, this Board may by resolution accept any area of land, either public or privately owned, for management as a refuge for the mammal and bird wildlife found thereon for the purpose of preserving, protecting and propagating such wildlife.

NOW, THEREFORE, BE IT RESOLVED, that those islands to the north and west of Kauai known as the Leeward Islands and designated as the Hawaiian Islands National Wildlife Refuge by Presidential Proclamation of July 25, 1940, be declared a refuge and be subject to the provisions of Regulation 15, Division of Fish and Game, Board of Agriculture and Forestry.

Adopted April 25, 1952, by the Board of Commissioners of Agriculture and Forestry.

/s/ Colin G. Lennox
COLIN G. LENNOX, PRESIDENT
Board of Commissioners of
Agriculture and Forestry

Make copies

George Balazs

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Fisheries Center
Honolulu Laboratory
P. O. Box 3830
Honolulu, Hawaii 96812

CRUISE REPORT

VESSEL: Townsend Cromwell, cruise 79-03 (TC-84)

CRUISE PERIOD: Part I: 18 June-10 July 1979
Part II: 10 July-3 August 1979

AREA OF OPERATION: Hawaiian Archipelago

TYPE OF OPERATION: Part I. Personnel from the National Marine Fisheries Service (NMFS) and Sea Grant Program, University of Hawaii (SGUH), participated in the assessment of primary and secondary productivity of the waters of the Hawaiian Archipelago.

Part II. Personnel from NMFS and the Hawaii Division of Fish and Game (HDFG) participated in a survey and assessment of the fisheries resources of the Northwestern Hawaiian Islands (NWHI). Nearshore fish communities and harvestable resources were studied by HDFG while offshore demersal and pelagic fishery resources were studied by NMFS.

ITINERARY:

June 18 - Departed Honolulu for the island of Hawaii to begin a series of environmental stations to assess primary and secondary productivity.

27 - Arrived Honolulu to disembark and embark scientific personnel. Departed Honolulu to continue productivity survey.

July 9 - Arrived at Midway.

10 - SGUH personnel disembarked. End of Part I. HDFG personnel embarked. Began Part II. Departed Midway for Pearl and Hermes Reef to begin assessment of fishery resources.

August 3 - Arrived at Honolulu. End of cruise.

MISSIONS
AND
RESULTS:

A. Conduct environmental stations to study plankton and productivity of the Hawaiian Archipelago using an extensive field sampling program to evaluate differences in the distribution of hydrographic conditions, nutrient levels, particulate matter, plankton stocks, and productivity rates between the island of Hawaii and Midway Islands (SGUH).

Fifteen environmental stations were completed at pre-selected locations and six additional stations were conducted at intermediate locations.

1. Thirty-two CTD casts were conducted to obtain day and night profiles on temperature and salinity with depth.

2. Thirty-five XBT casts were made to obtain temperature-depth profiles.

3. Thirty-two hydrocasts were completed to obtain water samples for analysis of nitrite, nitrate, phosphate, particle size of suspended matter, chlorophyll a, and phaeopigments.

4. Fifteen productivity buoy operations were completed for C^{14} assimilation determinations.

5. Fifteen photometer readings and 15 Secchi disc casts were made.

6. Plankton samples were collected with 71 neuston tows, 15 vertical plankton hauls, 31 bongo tows, 17 tows using a 6-ft Isaac-Kidd trawl, and 7 Cobb trawl hauls.

7. Seventeen assessments of sound scattering by organisms were conducted.

B. Conduct surveys of nearshore fish communities and assess harvestable resources in nearshore waters (HDFG).

1. Fifty-four underwater transect stations were occupied in the NWHI to determine fish species composition, densities, and habitat type.

2. One hundred seventy-eight Caranx ignobilis were tagged and released to determine their movement and growth rates.

3. Surveys were conducted at Gardner Pinnacles, Necker Island, and Nihoa to assess opihi, Cellana spp., population densities in these areas.

4. Fish specimens were obtained for information on morphometrics, stomach content, gonad development, ciguatoxin, and age determination.

C. Conduct surveys of offshore demersal and pelagic fishery resources (NMFS).

1. Trolling

There were 22 direct trolling operations totalling 671.6 line-hours of trolling. Catch consisted of 108 kawakawa, Euthynnus affinis, 44 yellowfin tuna, Thunnus albacares, 6 skipjack tuna, Katsuwonus pelamis, 11 wahoo, Acanthocybium solandri, 4 mahimahi, Coryphaena hippurus, 1 rainbow runner, Elagatis bipinnulata, 1 Pacific blue marlin, Makaira nigricans, and 11 white ulua, Caranx ignobilis. There were 21 incidental trolling operations totalling 344.1 line-hours of trolling. Catch from these operations consisted of 4 kawakawa, 10 yellowfin tuna, 4 skipjack tuna, 3 wahoo, and 1 mahimahi.

2. Trapping

There were 11 lobster stations occupied during the cruise utilizing both lobster pots and fish traps. The total number of lobster pots retrieved during the cruise was 239 in 31 strings. The total number of fish traps retrieved was 114 in 31 strings. A total of 520 spiny lobster, Panulirus marginatus, were captured, of which 341 were not berried and were of legal size. Taape, Lutjanus kasmira, were caught in fish traps as far northwest as Maro Reef.

Five shrimp trapping stations were occupied during the cruise with a total of 32 traps in 8 strings being set. Only 23 traps in 6 strings were retrieved. Depths of retrieved traps were 180, 300, 380, and 475 fathoms.

3. Handlining

Nine handline stations were occupied during the cruise. Two of these stations were during the morning, one in the afternoon, and six were occupied during the evening beginning around sunset. Figures on total effort are 18.3 hours and 224.5 hook-hours. Total catches were: 17 hapu'upu'u, Epinephelus quernus, 10 ehu, Etelis marshi, 8 opakapaka, Pristipomoides filamentosus, 3 gindai, Rooseveltia brighami, 1 kahala, Seriola dumerilii, 1 kalikali, P. sieboldii, and 4 Promethichthys prometheus.

D. Other observations and activities (NMFS).

1. Length-weight morphometrics were taken on 520 spiny lobster, Panulirus marginatus, and 170 slipper lobster, Scyllarides squammosus and Parribacus antarcticus.

2. All fish captured during trolling and handline operations were measured, weighed, and when possible, sexed. The ovaries of 115 female fish were preserved and stomach contents of 140 specimens were frozen. Heads of 12 specimens were retained for otolith extraction at the Honolulu Laboratory.

3. Tissue samples were taken from 31 fish specimens for ciguatoxin analysis. Twenty-nine of these samples were from handline stations, 1 (L. kasmira) from a trapping station and 1 (Epinephelus bipinnulata) from trolling.

4. Fish flesh samples were taken from 13 bottom fish for analysis by the Hawaii Department of Health for heavy metals and pesticides.

5. Eight kilograms of shark liver were obtained for Dr. Y. Hokama, University of Hawaii, John A. Burns School of Medicine, for ciguatera research.

6. The fifth walking leg of approximately 250 spiny lobster, Panulirus marginatus, was obtained for genetic studies by Dr. James Shaklee, Department of Zoology, University of Hawaii.

7. Approximately 63 kg of moray eels were obtained for Robert DeLong, Marine Mammal Division, Northwest and Alaska Fisheries Center, NMFS, Seattle.

8. Pelagic squid specimens from five locations were obtained for Dr. R. E. Young, University of Hawaii, and the U.S. Fish and Wildlife Service for bird stomach content analysis.

9. Blood samples from 14 wahoo, A. solandri, and liver samples from 11 wahoo were obtained for Anthony Lewis, Australian National University, Canberra A.C.T., Australia.

10. Thirty-nine berried spiny lobster, P. marginatus, were obtained for fecundity studies by the Honolulu Laboratory.

11. A bottom depth survey was conducted at Northampton Seamount.

12. The Occurrence of Birds, Aquatic Mammals and Fish School Log was maintained throughout the cruise from 0600 to 2000.

13. Six night-light stations were conducted while anchored. At only one of these stations, located at French Frigate Shoals, did sizable quantities of fish, Decapterus pinnulatus and Trachurops crumenophthalmus, appear. Three night-light stations were occupied while drifting and on two of these stations, small numbers of squid were obtained.

SCIENTIFIC PERSONNEL:

Parts I and II
Fletcher V. Riggs, Chief Scientist, Fishery Biologist, NMFS, SWFC, HL (18 June-3 August)
Victor A. Honda, Research Assistant, NMFS, SWFC, HL (18 June-3 August)

Part I
Vernon Asper, Cooperating Scientist, SGUH (27 June-10 July)
Scott Birdwhistell, Cooperating Scientist, SGUH (18 June-10 July)
Andy E. Jahn, Cooperating Scientist, SGUH (18-27 June)
Robert M. Nicholson, Cooperating Scientist, SGUH (18 June-10 July)
F. Randy Shuman, Cooperating Scientist, SGUH, (18 June-10 July)

James P. Szyper, Cooperating Scientist, SGUH
(18 June-10 July)
Satoru Taguchi, Cooperating Scientist, SGUH
(18 June-10 July)

Part II

Brian Kanenaka, Cooperating Scientist, HDFG
(10 July-3 August)
James Koenig, Cooperating Scientist, HDFG
(10 July-3 August)
Shugo Masuda, Cooperating Scientist, HDFG
(10 July-3 August)
Dennis Shinno, Cooperating Scientist, HDFG
(10 July-3 August)
Leonard L. Torricer, Cooperating Scientist, HDFG
(10 July-3 August)
Dennis Yamase, Cooperating Scientist, HDFG (10 July-3 August)

Submitted by:

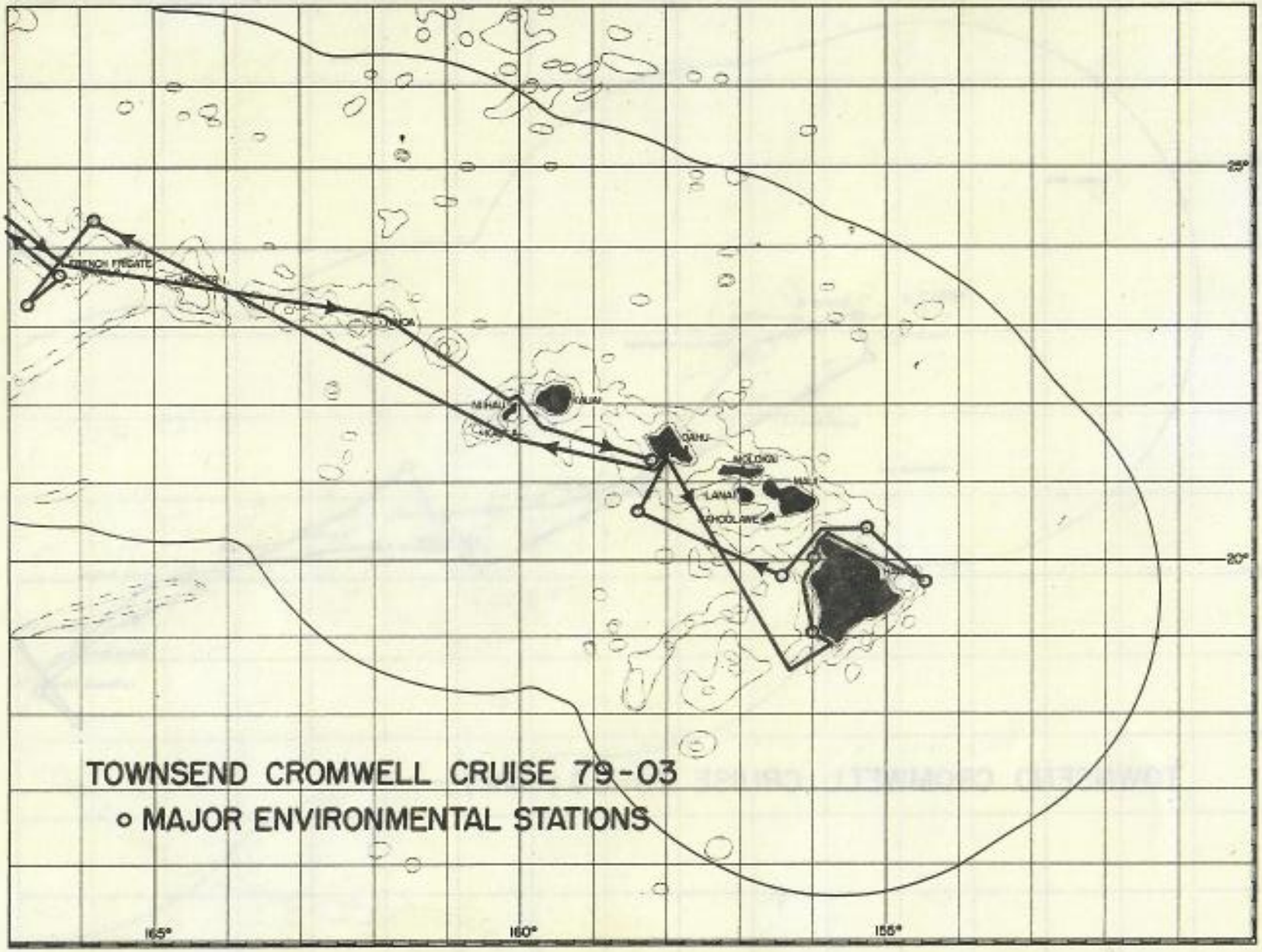
Fletcher V. Riggs
Chief Scientist

Approved by:

Richard S. Shomura
Director, Honolulu
Laboratory

Attachment

August 20, 1979


TOWNSEND CROMWELL CRUISE 79-03
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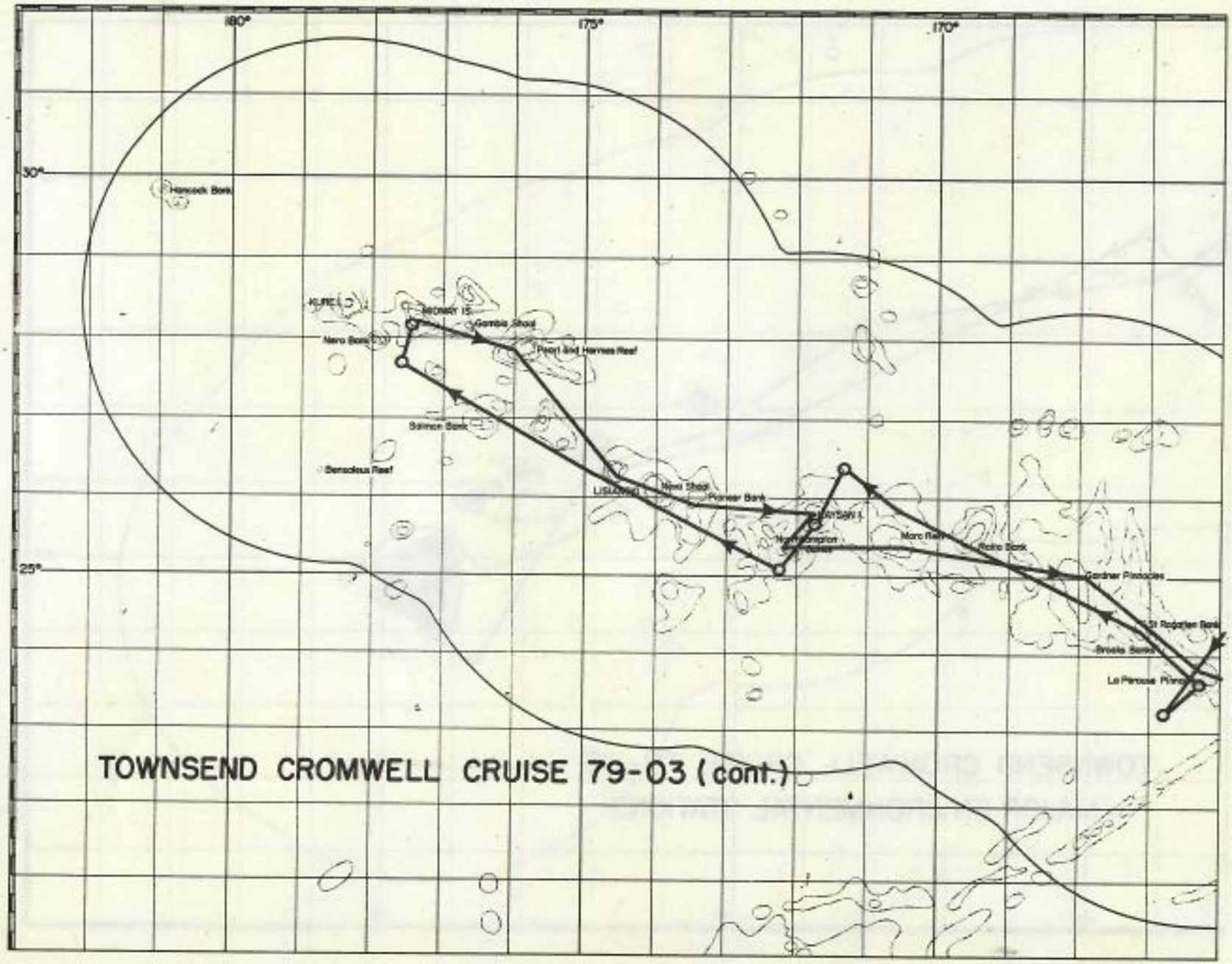
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175°
170°
30°
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Hancock Bank
Nero Bank
Pearl and Hermes Reef
Salmon Bank
Pioneer Bank
Marc Reef
Gardner Pinnacles
Brooks Banks
TOWNSEND CROMWELL CRUISE 79-03 (cont.)

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Fisheries Center
Honolulu Laboratory
P. O. Box 3830
Honolulu, Hawaii 96812

Date: February 15, 1979 Reply to Attn. of: F142:RAS

To: Participants, Northwestern Hawaiian Islands Study

From: Robert A. Skillman, Coordinator, NWHI Study

Subject: Summary of 16 January 1979 meeting

The January meeting of the NWHI Study group was held on the 16th at the Honolulu Laboratory. Subsequently, a short meeting was held on the 26th to resqlve some problems with the Townsend Cromwell cruise schedule.

The first order of business was a seminar on progress on the study of coral communities by Richard Grigg, University of Hawaii Sea Grant Program. During November 1978 on an Easy Rider cruise, Dr. Grigg, Steven J. Dollar, and Michael T. Palmgren conducted the most recent survey of coral communities; concurrently Ted Hobson, Tiburon, NMFS, investigated the fish communities. Dr. Grigg described the results of this survey, and one of the most dramatic findings occurred at French Frigate Shoals. Two coral species, which are common in tropical habitats but not described from Hawaii until recently, were found to be abundant and even dominant in some locations. This finding led to the hypothesis that isolation may be more important than temperature in determining the coral structure in Hawaii. Realizing that it may be premature to draw conclusions from surveys of only 4 islands out of 14 in the archipelago, Dr. Grigg felt that he should still discuss the marked differences among the island coral and algae communities. These differences are exemplified by the variation of the species mixture from island to island and by the increase in the species diversity from the southern islands of the archipelago to the northern islets. Also, these differences seem to be related to the degree of maturity or the existence of an unbalanced state, which it is hypothesized could be due to the amount of protection from wave action. The difficulty of putting this hypothesis into a testable form, including whether to measure some average of wave action, a sum of wave energy, or anomalous wave occurrences that might be catastrophic to the coral and algae communities, was discussed; however, no definitive conclusion was reached. It was argued that significant differences among the coral and algae communities should be carried through the trophic levels to the fish communities and that such an occurrence would suggest the need for implementing island by island management regimes by the Western Pacific Regional Fisheries Management Council and the State of Hawaii. In response to a

question about how the survey sites were chosen, Dr. Grigg responded that they were selected on the basis of their favorability for coral growth; a sandspit or mud flat would certainly be an unfavorable area and would not be sampled.

It was suggested that scheduling the monthly meetings to start at 0800 to 0830 on Wednesdays would result in better attendance by Sea Grant and Fish and Game personnel. No February meeting was scheduled. The next meeting will be scheduled after the visit by Taivo Laevastu, and the progress on the ecosystems model has been evaluated.

It was announced that the University of Hawaii Sea Grant Program's site review is scheduled for 13 and 14 February, with the NWHI programs being scheduled for review at 0915-1140 on 13 February.

Dr. Grigg presented a schedule for Sea Grant's use of the Easy Rider during the remainder of FY 1979, viz. 8-24 June for inshore and offshore fish sampling, 14-30 September for offshore fish and marine turtle investigations, and 7-30 October for reef community surveys. Funding for 50 of the 66 sea days has been obtained.

The cruise schedule of the Townsend Cromwell was discussed but no progress was made during the first meeting. By the second meeting, most of the problems with respect to TC-79-02 had been resolved. Jed Hirota's cruise plan for his productivity work that was originally drawn up for December will be submitted for Part 1, 30 March-27 April 1979. James Uchiyama and Craig Harrison have completed the coordination of their projects for Part II, 28 April-4 June 1979.

The Hawaii Division of Fish and Game portion could not be carried out concurrently. It was decided that this cruise should also be split into two parts:

- Part I. Productivity

  22-23 sea days, with a 3-day overlap with HDFG
  Approximately 18 June-10 July
  4 NMFS staff
  5 Sea Grant staff

  Part II. Nearshore resource surveys

  24-25 sea days
  3 NMFS staff
  5 HDFG staff
  1 USFWS staff
  (1-2 ship crew members will be required)

This schedule will require an increase from 40 to 47 sea days, which can be obtained by taking 1 to 2 days from subsequent cruise and inport periods. I will work out the exact details of this and issue a new version of the Townsend Cromwell cruise schedule.

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Fisheries Center
Honolulu Laboratory
P. O. Box 3830
Honolulu, Hawaii 96812

Date: January 8, 1979

Reply to Attn. of:

To: Participants, Northwestern Hawaiian Islands Study

From: Robert A. Skillman, NWHI Study

Subject: Notice of January 1979 meeting

The November 11th meeting of the NWHI Study group was poorly attended and nothing of substance was discussed or accomplished.

The next monthly meeting will be held at 1000, Tuesday, January 16, 1979, in the Seminar Room, Honolulu Laboratory. Dr. Richard W. Grigg will present a seminar on the results of his recent work on the corals of the NWHI. We will also discuss the cruise schedule of the Townsend Cromwell. The Hawaii Division of Fish and Game has mentioned that there may be a slight problem with the time scheduled for their cruise, and the breakdown of the Cromwell in December and the resultant cancellation of Dr. Jed Hirota's productivity cruise has caused scheduling problems.

MONITOR

THE CONSERVATION, ENVIRONMENTAL AND ANIMAL WELFARE CONSORTIUM

Suite 506
1785 Massachusetts Ave., N.W.
Washington, D.C. 20036

(202) 223-1397

Director
Office of Endangered Species
Fish and Wildlife Service
U.S. Department of the Interior
Washington, D.C. 20242

Dear Sir:

The following Monitor groups wish to express opposition to the application of Charles van Riper III under the Endangered Species Act of 1973 to capture 50 individuals of the Laysan Finch (Psittirostra cantans) for malaria experiments.

Humane Society of the United States
International Fund for Animal Welfare
Audubon Naturalist Society of the Central Atlantic States, Inc.
International Primate Protection League
Fund for Animals, Inc.
Society for Animal Protective Legislation
Let Live
American Littoral Society, Chesapeake Chapter
Rare Animal Relief Effort
Sierra Club, National Wildlife Committee
Washington Humane Society

Dr. Richard Warner has already performed similar experiments, inducing avian malaria in the Laysan Finch (The Condor, 70:101-120, 1968); these experiments proved that the species is highly susceptible to the disease in tests. A section of Dr. Warner's study published in The Condor cited above, "Avian Malaria induced in the Laysan Finch" concluded the following after laboratory analysis was conducted for Plasmodium in the exposed group in which all birds had heavy infections of avian malaria: "1. the Laysan Finch, and probably the Drepaniidae in general, are extremely susceptible to avian malaria; and 2. three nights of exposure to the night mosquito were sufficient to produce lethal infections of Plasmodium, given the Culex density present at the time." The study Dr. van Riper proposes, as outlined in the Permit Application(PRT 2-900-C07) does not differ in substance from the study already done by Dr. Warner. Therefore, from a scientific standpoint, the proposed study is only a repeat of research done previously from which reliable data was obtained.

Another aspect of Dr. van Riper's application which the Monitor groups object to, is the disposition of the birds once collected. A four-year study to ascertain results obtained by Dr. Warner in a fraction of that time seems unrealistic. The proposed transport of the birds from Hawaii to Newfoundland "for analysis" and thence to a "continental university" is highly irregular. The only birds which would be expected to survive the proposed induced malaria experiments would be a control group, whose size is not mentioned in the application. Should there be survivors of the exposed

group, they should not be removed from Hawaii, since they would present a disease threat to other birds with which they might come into contact. The birds will be used for "behavioral experiments" when taken to a continental university (which is not specified by name); the behavioral experiments are not described. It would appear that Dr. van Riper plans to use the surviving birds to his discretion in unnamed locations, and they would become his personal property.

The Permit and Exemption Policy of the Endangered Species Act of 1973 specifies that permits be granted only if they will not "operate' to the disadvantage of such endangered species, and will be consistent with the purpose and policy set forth in Section 2 of this Act." Dr. van Riper's experiments will not comform to these regulations since the Laysan Finch's susceptability to malaria has already been proven and the study will in no way seek protection of the species as a whole from the possible spread of malaria to populations in the wild.

We therefore urge that this permit not be granted.

Sincerely,

Craig Van Note

Craig Van Note
Executive Vice President

CVN:/gc

ACTION IN FEDERAL REGISTER

Monitor Meeting - August 15, 1977

PERMIT APPLICATIONS Dept. of Interior Fish & Wildlife

1. Charles van Riper III
Dept. of Zoology
University of Hawaii
Honolulu, Hawaii 96822

Permit Number: 2-900-C07 Endangered Species

Request: The Laysan Finch (Psittirostra cantans); to collect and transport 50 individuals from Laysan to Hawaii and then to St. John's University, Newfoundland. Birds will be used for scientific study - individuals will be exposed to malaria and then analyzed for the disease, and those taken to Newfoundland, for other blood parasites and asundry viral infections. Birds will be randomly taken, and no sex discriminated against.
Applicant will be working under a cooperative Park Service grant to University of Hawaii from Hawaii National Park Birds will be housed at the aviaries in Hawaii National Park during the three years of study. No birds will be allowed to escape. Remaining birds, at end of study, will be taken to Newfoundland for analysis, and then to a continental university where applicant plans to teach. Birds will be used for behavioral experiments. All individuals that succumb to disease will be postmortemed and analysis made of internal parasites and other maladies; bodies will be disposed of through incineration.
Hawaii National Park has 4 outdoor aviaries and he plans to construct a number more. These are 15 by 9 by 4 foot cages and can be walked into. He plans to screen the outsides against possible mosquito entry.
Applicant worked on Palila (Psittirostra bailleui) for PhD dissertation.
Containers used in transportation will be those the USDA and other agencies use for transportation of avifauna. Cases used to transport Palila in previous permit will be used in this project.

Date of PublicationF.R. Vol. 42, No. 154 August 10. 1977 pp 40489-90.

Comments Due: Spetember 9, 1977.

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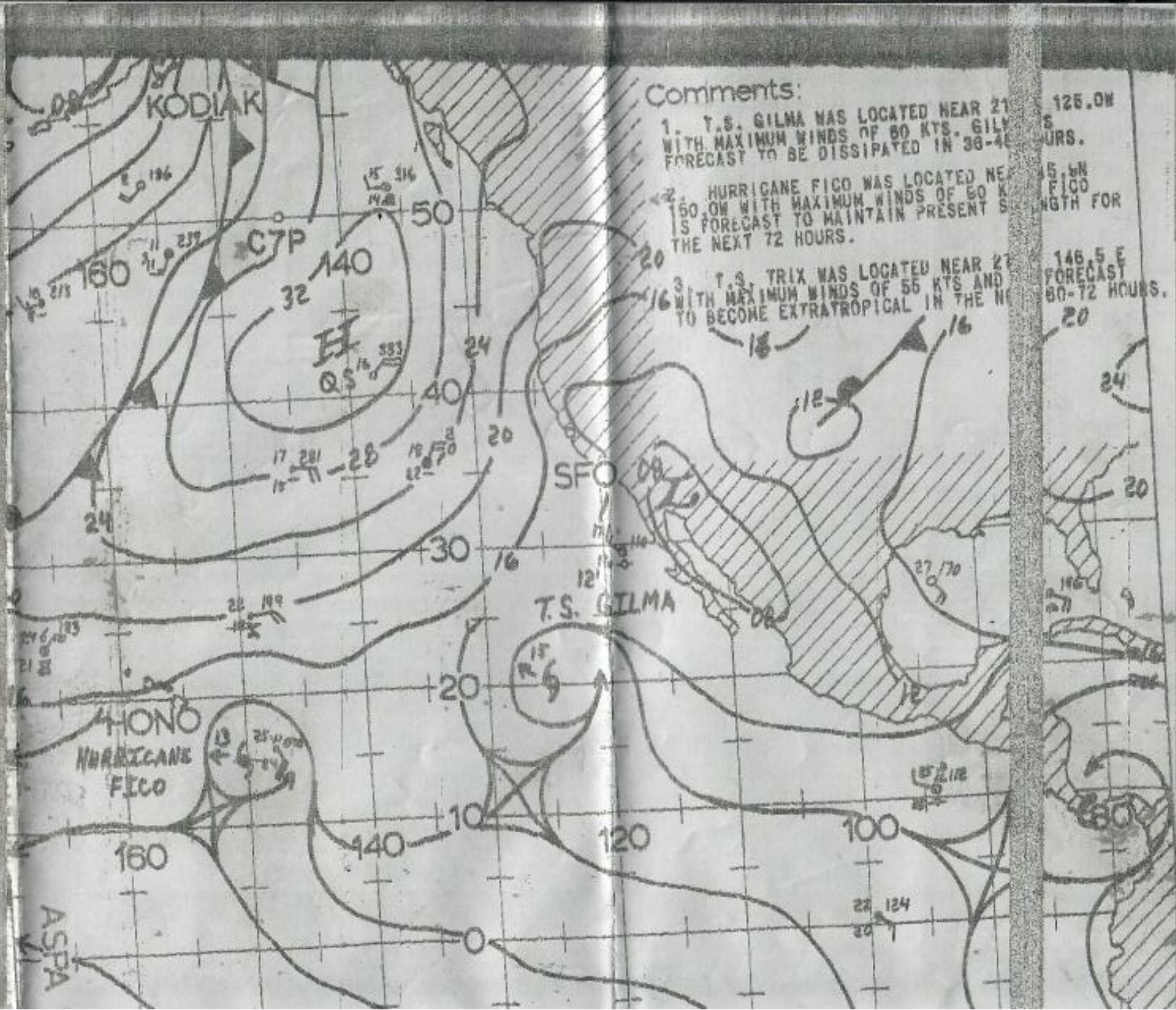
2. Happy Acres Farm
C.R. Covington, owner
Rte. 3, Box 491
King, N.C. 27021.

Permit Number: PRT 2-941-07 Endangered Species

Request: To purchase Swinhoe hens and Elliott hens - pheasants for purpose of breeding from breeders in New York,

(continued)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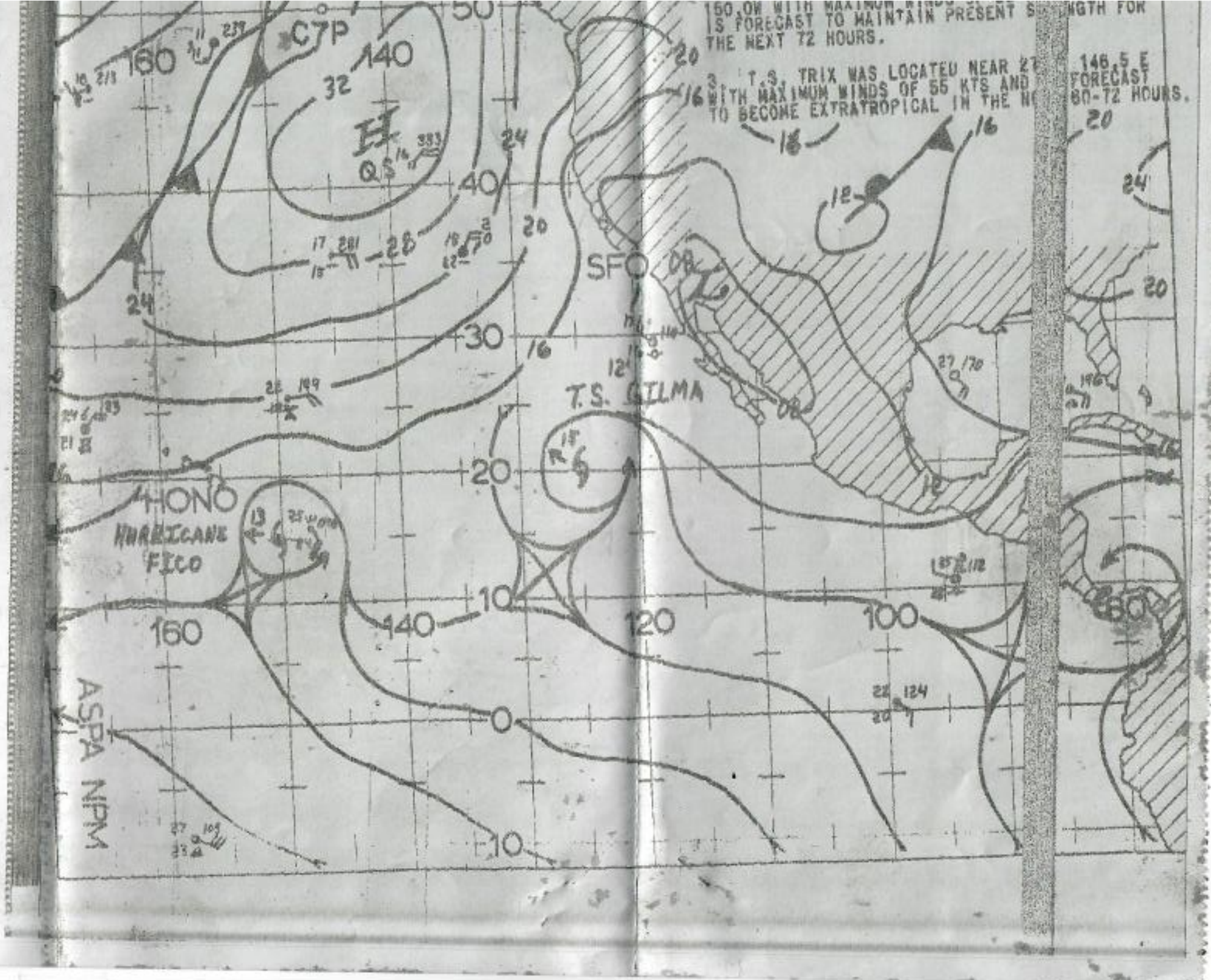
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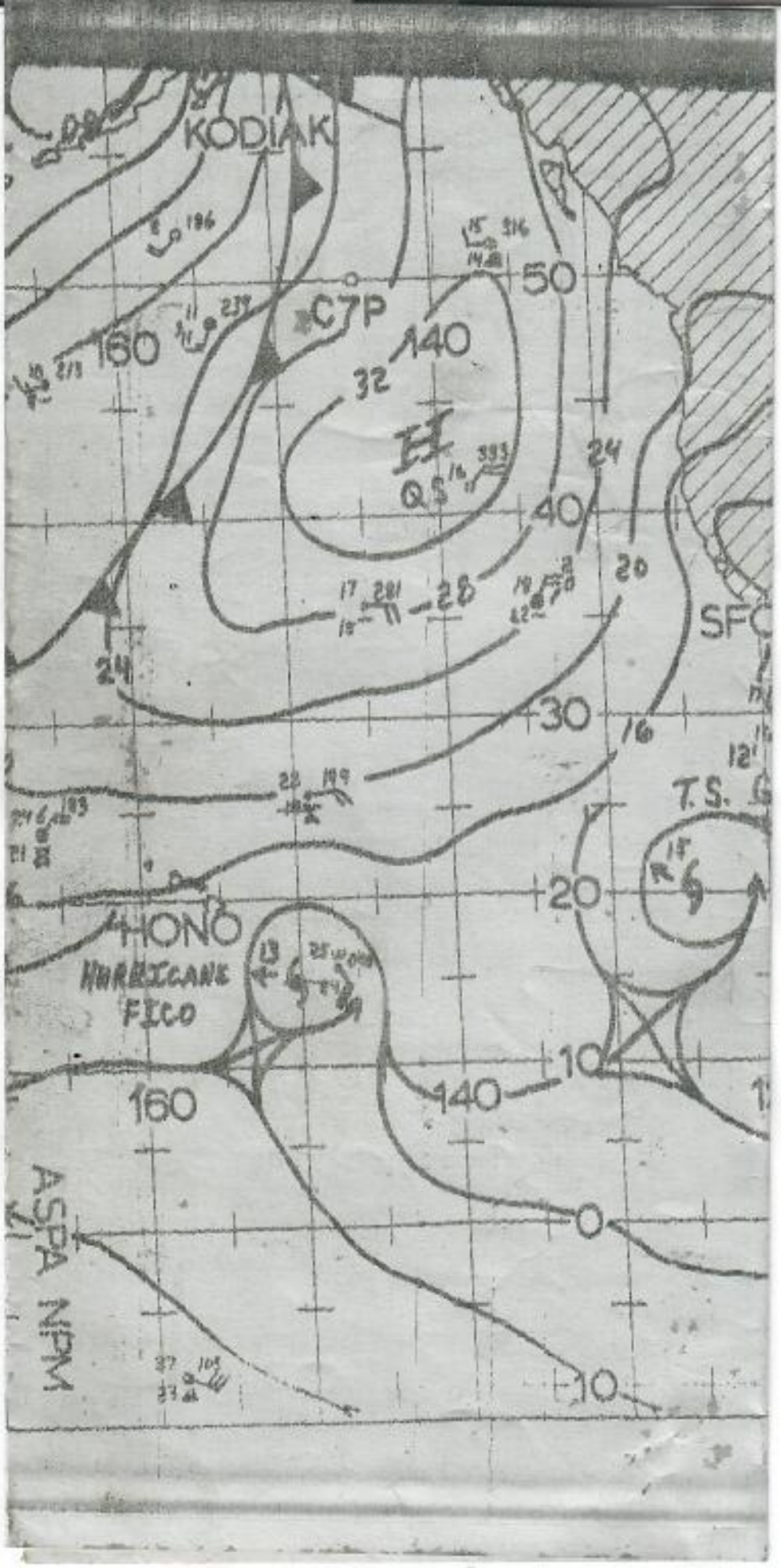
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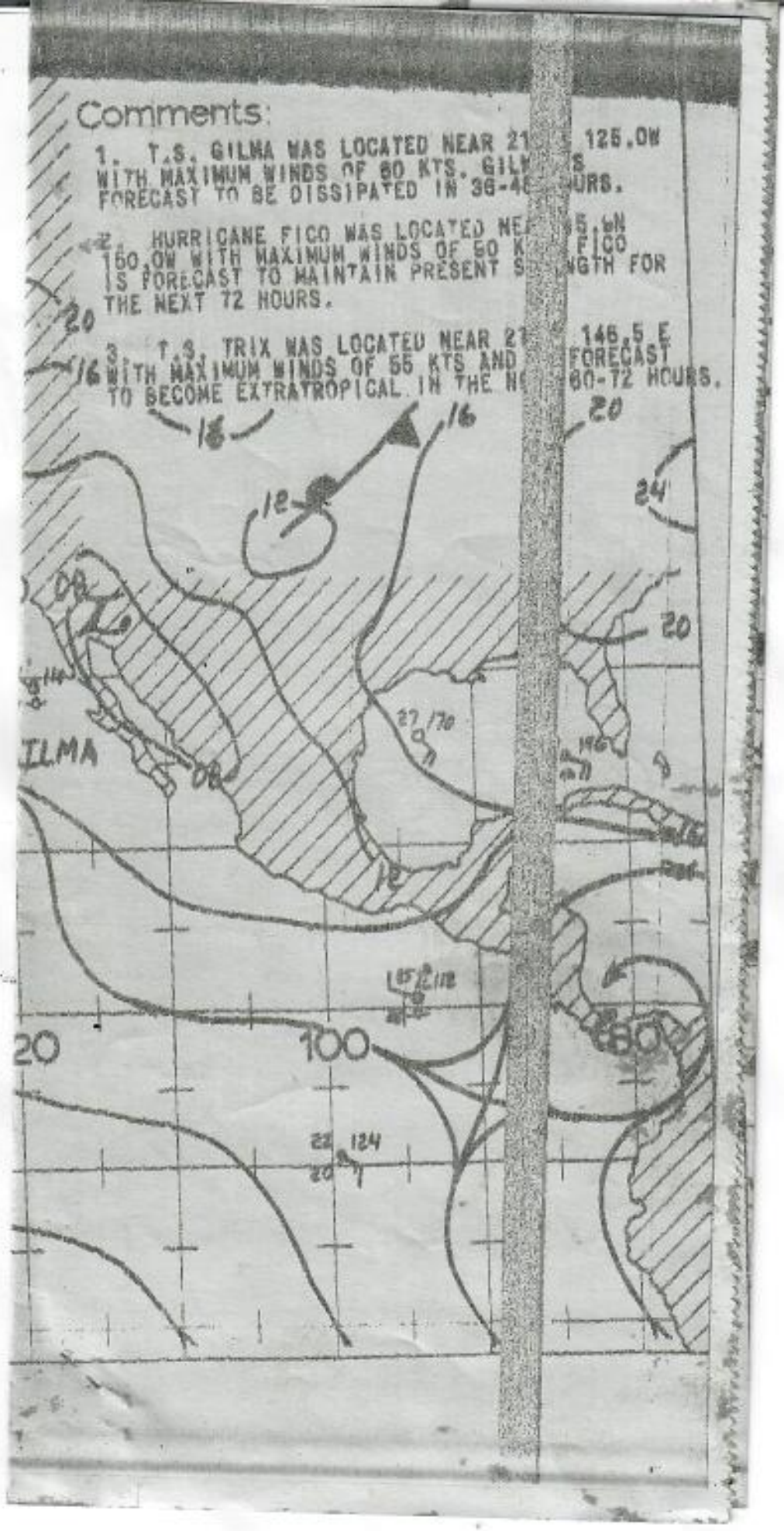
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NATIONAL MARINE FISHERIES SERVICE
Southwest Fisheries Center
Honolulu Laboratory

December 20, 1977

TO: PARTICIPANTS, TOWNSEND CROMWELL CRUISE 78-01

Subject: Pre-cruise meeting

There will be a pre-cruise meeting in the conference room at the Honolulu Laboratory on Wednesday, January 4, 1978, 0900.

Distribution

Capt. Gelb
Lt. Kaiser
R. Shomura
R. Uchida
T. Otsu
R. Barkley
R. Gooding
B. Ito
W. Matsumoto
T. Kazama
D. Tagami
G. Higashi
M. Queenth
R. Grigg
M. Palmgren
A. Vala
G. Balazs HIMB

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SURVEY
Pacific Marine Center

December 14, 1977

Commanding Officer
NOAA Ship TOWNSEND CROMWELL

Cruise Instructions: TC-78-01 (TC-78) - NW Hawaiian Island Survey

Part I - 6-13 January 1978
Part II - 16 January - 6 March 1978
Part III - 8-15 March 1978
Part IV - 16-19 March 1978

1. SCHEDULE

The NOAA Ship TOWNSEND CROMWELL will be engaged in the National Marine Fisheries Services (NMFS) projects as follows:

Part I - Drogue and animal distribution studies at Middle Bank.

Part II - Resource assessment of demersal and pelagic fishery resources and collection of environmental data over seamounts, banks, and offshore grounds of the Northwestern Hawaiian Islands from Middle Bank to Hancock Seamount.

Part III - Drogue and animal distribution studies at Middle Bank.

Part IV - Release and anchor aggregation device off the Island of Hawaii.

6 January - Begin Part I. Load vessel and depart Kewalo Basin. Head for Middle Bank and work in area.
13 January - Arrive Kewalo Basin. End Part I. Load vessel.
16 January - Begin Part II. Load vessel and depart Kewalo Basin. Head for calm, deep waters to test Furuno net sounder using the Cobb or Noreastern trawl.
- Return to Kewalo Basin; Richard Uchida and Bill Miller disembark. Depart Kewalo Basin for Nihoa and work up chain to Midway Islands. (Midwater trawl, bongo, CTD, traps, handline and trolling.)
1 February - Arrive Midway Islands; Araha Vala disembarks.
3 February - Depart Midway Islands. Richard Grigg will board prior to departure. Head for Hancock Seamount and work around Kure and Midway Islands.

13 February - Arrive Midway Islands, R. Grigg disembarks.
15 February - Depart Midway Islands and work down the chain, Balazs will board prior to departure.
6 March - Arrive Kewalo Basin. End Part II. Unload vessel.
8 March - Depart Kewalo Basin. Head for Middle Bank (Part III).
15 March - Arrive Kewalo Basin. End Part III.
16 March - Depart Kewalo Basin. Head for area south of Hawaiian Islands. Begin Part IV.
- Depart Kewalo Basin to monitor objects A, E, C, and D.
18 March - Set objects off Kona and depart for Kewalo Basin.
19 March - Arrive Kewalo Basin. End Part IV.

2. SCIENTIFIC OBJECTIVES

Parts I and III

a. Measure currents around and over Middle Bank (22°42'N, 161°02'W) with drogues, to determine whether a Taylor column of relatively stationary water is present over the Bank.

b. Sample biota on and over the Bank, and in surrounding waters, to determine whether their distributions correspond to the observed current patterns.

Part II.

The objectives of this part of the cruise are as follows:

a. Conduct bottom trawling- midwater trawling, and trap and handline for fish, crab, and lobsters to determine their distribution, availability, and relative abundance.

b. Collect plankton and forage organisms with bongo net and Cobb pelagic trawl to determine the distribution and relative abundance of the organisms sampled.

c. Collect oceanographic data with XBT and CTD casts for environmental studies.

d. Conduct direct and incidental trolling to determine the availability and relative abundance of tuna and other pelagic species.

e. Conduct dredging for precious corals to determine their distribution and availability.

f. Conduct shark fishing at selected areas.

Part IV

a. To monitor anchored objects off Oahu and Lanai.

b. To anchor two fish aggregating objects off Kona.

3. SCIENTIFIC PERSONNEL

Part I

Reginald M. Gooding, Chief Scientist, Fishery Biologist, NMFS, SWFC, HL
Bernard M. Ito, Research Assistant, NMFS, SWFC, HL
Katherine Muzik, Visiting Investigator, Smithsonian Institution, Wash.,D.C.

Part II

Thomas S. Hida, Chief Scientist, Fishery Biologist, NMFS, SWFC, HL
Glenn R. Higashi, Research Assistant, NMFS, SWFC, HL
Martina K. K. Queenth, Research Assistant, NMFS, SWFC, HL
Darryl T. Tagami, Research Assistant, NMFS, SWFC, HL
Richard N. Uchida, Fishery Biologist, NMFS, SWFC, HL (16 January)
_____, Research Assistant, NMFS, SWFC, HL
Richard W. Grigg (3-13 February), Cooperating Scientist, Sea Grant, University of Hawaii
Michael Palmgren, Cooperating Scientist, Sea Grant, University of Hawaii
William Miller, Service Manager, Konel-Furuno, San Francisco (16 January)
Araha Vala, Cooperating Scientist, Division of Fisheries, Papua New Guinea (16 January-2 February)
George H. Balazs, Cooperating Scientist, Hawaii Institute of Marine Biology, University of Hawaii (15 February-6 March)

Part III

Reginald M. Gooding, Chief Scientist, Fishery Biologist, NMFS, SWFC, HL
Bernard M. Ito, Research Assistant, NMFS, SWFC, HL

Part IV

Walter M. Matsumoto, Chief Scientist, Fishery Biologist, NMFS, SWFC, HL
Thomas K. Kazama, Research Assistant, NMFS, SWFC, HL

4. OPERATIONAL PLANS:

Parts I and III

a. Upon arriving at Middle Bank, drop a marker buoy over the estimated center of the Bank area, then place drogues 1 to 2 miles away from the 50-fathom line at the W, SW, NE, and SE quadrants; place fifth drogue over center of Bank (as determined from echo sounding data) and relocate marker buoy to center if necessary. Monitor drift of all drogues relative to anchored marker taking fixes at about 1-hour intervals until upstream buoys have moved past Bank, or until it is clear that currents are weak or variable (about 36-48 hours).

b. Based on observed drift of drogues, the Chief Scientist will select three to five sampling areas on the Bank, and one to three areas in deep water, for biological sampling using traps, handlines, and other bottom-oriented gear; trolling at appropriate times; and midwater sampling gear (1-m nets, Isaacs-Kidd midwater trawl). For Ms. Muzik (Smithsonian Institution), sample corals with weighted tangles as she may request.

c. If clear-cut patterns are found, either in the currents or the distribution of biota, drogues may be redeployed at the discretion of the Chief Scientist, during or after biological sampling, to further define the patterns of flow near and over the bank, particularly within the Taylor column if one is present.

Part II

a. Personnel from the Honolulu Laboratory will inspect the XBT launcher and recorder, CTD probe and recorder, ship's log, thermosalinograph, and Furuno net sounder (transmitter, receiver, and recorder) prior to sailing. Any malfunction will be reported to the vessel's crew, who will be responsible for taking corrective action.

b. Bottom trawling will be conducted over selected grounds at stratified depths when the grounds are determined to be trawlable.

c. Trapping will be conducted at selected localities for lobsters, crabs, and fish. The lobsters will be tagged and released in the general area of capture.

d. Zooplankton samples will be collected at designated stations established around the islands and banks.

e. Cobb trawl samples will be collected at designated stations.

f. Midwater trawling utilizing the Noreastern trawl with the Furuno net sounder will be conducted when significant traces of "fish" appear on the depth recorder.

g. Oceanographic observations will include XBT cast at selected stations and CTD casts at designated offshore stations.

h. Incidental trolling will be conducted on daylight runs whenever feasible. All viable troll-caught tunas and tunalike fishes will be tagged and released. Direct trolling may be conducted whenever feasible.

i. Colored pictures of trawl-caught fishes and invertebrates will be taken whenever feasible.

j. Coral drags will be conducted at selected locations.

k. Shark fishing will be conducted at selected intervals.

Part IV

a. Depart Kewalo Basin at 0700 and monitor fish aggregating objects A, E, and C. Monitoring will include surface trolling around objects, fishing with cut bait, making underwater observations via bow chamber, depth recorder, and glass box or face mask, sea conditions permitting. Scouting for fish schools and bird flocks will be done at a radius of 3 miles from the objects.

b. Two objects will be anchored off Kona at preselected sites.

5. FOREIGN FISHING VESSEL SIGHTINGS

Sightings of foreign fishing vessels will be reported per PMC OPORDER 1-01.09.

6. BATHYTHERMOGRAPH LOG

A bathythermograph log, NOAA Form 77-22, will be maintained by the Chief Scientist. The scientist on watch will fill out the bathythermograph trace readings from the CTD or XBT recorded for each station. The bridge will supply the environmental information for each station. The data will be transmitted via Coast Guard radio. The logs and original data will be retained by the Chief Scientist at the end of the cruise and forwarded to NODC.

7. MARINE POLLUTION MONITORING PROJECT

The ship's officers will maintain a watch and log per Project Instruction entitled "Integrated Global Ocean Station System (IGOSS) Marine Pollution Monitoring Pilot Project" dated June 2, 1975.

8. WEATHER OBSERVATIONS

A Ship's weather observation form, NOAA Form 72-1, will be maintained during the cruise by the ship's officers. The data will be relayed to the Weather Service via radio, and the original data will be set by the ship's crew to the Weather Service at the end of the cruise per PMC OPORDER 2-07.

9. NAVIGATIONAL CONTROL

Primary control during the project will be OMEGA, loran A/C, supplemented by radar, visual, etc.

10. MARINE OPERATIONS LOG

A Marine Operations Log, NOAA Form 77-2, will be maintained by the ship's officers during the project per PMC OPORDER 2-08. The Chief Scientist and the Commanding Officer will work out the details regarding forms required by the project for each of the operations, such as trawling, fish trapping, handlining, trolling, XBT, etc., so as to integrate them into the Marine Operations Log.

11. BIRD, AQUATIC MAMMALS, AND FISH SCHOOL LOG

During the project the officers will maintain a watch and log occurrences of birds, aquatic mammals, and fish schools on forms provided by the Honolulu Laboratory.

12. RECORDS ANNOTATION

Chartlets--Ship's officers will supply the Chief Scientist with chartlets of all stations that he requests.

13. COMMUNICATIONS

Activity reports and position reports will be sent to the Director, Honolulu Laboratory daily. The Chief Scientist may require communications with the Honolulu Laboratory via the SSB KAB during the cruise.

14. EQUIPMENT LIST

a. Furnished by vessel:

Furuno net sounder
XBT launcher and recorder
CTD probe and recorder
Thermosalinograph
Boston whaler and 20-hp outboard motor
Winch with minimum of 500 fathoms of 3/16-inch wire
Handline gurdies

b. Furnished by project:

Drogues, consisting of current cross, 10 fathoms of line, a float to support the cross, plus a mast equipped with radar reflector; a radio buoy will be attached to float. Six units (one spare) (For Parts I and III only.)
Coral dredges
Norwegian fish trawl complete with bridles, floats, and roller gear (2 sets)
Trawl doors (2 pairs for the Norwegian fish trawl)
Cobb midwater trawl complete with bridles and floats (2 sets)
Trawl doors (1 pair for Cobb midwater trawl)
Fish traps (20)
Lobster traps (40)
Crab traps (10)
Handlines (6 sets)
Bongo net, ring, bridle, flowmeter, and 100-lb weight or vane (2 sets)
Chest freezers (3)
Salinity sample bottles
XBT probes
Assorted specimen jars and Liquipaks
Isopropal alcohol

Formalin
Floy anchor tags (2,000 tags and tagging guns (3 guns) with spare needles)
Lobster and fish calipers (2 each)
Frozen mackerel and squid
Extra weights for traps, tools, plastic buckets, tubs, ropes, and other equipment and gear necessary to accomplish cruise missions.
Shark lines

15. CRUISE REPORT

The Chief Scientist and Commanding Officer are required by Section XI of NOAA Directive 17-17 to submit a joint cruise report to the Director, PMC. The report will be submitted by the Commanding Officer and addressed to Director, PMC. It shall include the following information:

a. Cruise title
b. Cruise period
c. Area of operations
d. Actual itinerary
e. Deviations from Project Instructions
f. Breakdowns and incidents
g. Personnel list (actual)
h. Disposition of data
i. Statement that Chief Scientist will supply a separate report entitled "Cruise Results" which will become a part of the cruise report.

16. CRUISE RESULTS

The Chief Scientist will submit the cruise results according to SWFC procedures and distribute through normal mailing list, including Director, PMC (3 copies) and Commanding Officer, TOWNSEND CROMWELL (2 copies), within 30 days of the completion of the cruise.

17. MONTHLY SHIP ACCOMPLISHMENT REPORT - BIO

The report while at sea will be transmitted by radio to the port secretary for typing during this project. The original will be forwarded to C7, a copy to CPM12, and a copy for the ship's file.

18. TIME AND ATTENDANCE REPORTS

The time and attendance reports will be transmitted via radio to the port secretary while the ship is at sea. The overtime and penalty pay information will also be radioed to the port secretary so information can be included on the time cards.

19. DATA DISPOSITION

a. All data gathered by the ship's personnel that is desired by the Chief Scientist will be released to him.

b. A complete ROSCOP II, NOAA Form 23-24, will be completed within the 30-day time frame by the Chief Scientist and distributed as required through the Honolulu Laboratory.

c. All completed XBT logs, NOAA Form 77-22, with appropriate tapes shall be submitted to NODC for transmittal to IGOSS by the Chief Scientist.

Eugene A. Taylor
Director, Pacific Marine Center

Richard S. Shomura
Director, Honolulu Laboratory

Distribution:

Chief Scientists
F14, Director, SWFC
F142, Director, Honolulu Laboratory
C7
CPMx6, Farrar
CPM12
CPM443, TOWNSEND CROMWELL
CPMx21

Germany, 15 per cent	$12,869.88
Great Britain, 30 per cent	25,739.76
Italy, 4 per cent	3,431.97
Netherlands, 4 per cent	3,431.97
Norway, 3 per cent	2,573.98
Russia, 2 per cent	1,715.98
Sweden, 2 per cent	1,715.98
United States of America, 15 per cent	12,869.89
Total expense	85,799.20

Up to June 30, 1915, the amounts due the United States from the following countries on account of the patrol for the season of 1914, have been received: Belgium, Canada, Denmark, Great Britain, Italy, Norway, and Sweden.

Special services.

Algonquin.—At the request of the State Department, the *Algonquin* was detailed to convey the United States consul at large on a tour of inspection of the various consular offices in the West Indies. The cutter left San Juan, P. R., on February 10, 1915, and had called at most of the ports indicated in the itinerary when it became necessary to direct her return to San Juan to assist in enforcing neutrality laws at that port. During this cruise the cutter visited the following ports: Santiago and Guantanamo, Cuba; Matthewtown, Great Inagua Island; Cockburn Harbor, Caicos Island; Salt Cay and Turks Island; Puerta Plata, Santa Barbara, Sanchez, Romana, San Pedro de Macoris, San Domingo and Azua, Dominican Republic; Jacmel, Aux Cayes, Jeremie, Petit Goave, and Port au Prince, Haiti.

At the request of the War Department the *Algonquin* proceeded to Puerta Plata, Dominican Republic, and received on board 184 Porto Ricans. Many of the refugees were so weak and emaciated from starvation it was necessary to assist them over the gangway, and five were taken aboard in chairs. Everything was done during the trip to alleviate their distress and make them as comfortable as possible; benches were improvised and secured about the decks; swinging cots were suspended from ridge ropes for the many small children, and the weak and sick were placed on cots. The *Algonquin* sailed from Puerta Plata July 20 and arrived at San Juan the following day.

Thetis—At the request of the Department of Agriculture the *Thetis*, in March and April, 1915, made an extended cruise to Bird Island, Laysan Island, Lisiansky Island, Ocean Island, and Midway Island to make an inspection of the bird reservations and ascertain the condition of the flocks. The weather was stormy almost the entire cruise and great difficulty was encountered in making landings on some of these islands. In several instances the officers and crews were obliged to swim to reach the beach. On Laysan Island it was

found that raiders had been ashore and slaughtered the birds in great numbers, their carcasses being strewn all over the surface of the island. From various indications it was evident the raid was made about the middle of January.

Bear.—This vessel arrived in San Francisco November 11, 1914, having completed a cruise of 11,318 miles since she left that port on April 6, 1914. On her way north she stopped at Seattle, Wash., and took on board the northern mail and supplies for various departments of the Government. Stopping en route at Unalaska and St. Paul Island she proceeded at once to Nome, arriving there at 10.40 p. m. of June 1, the first vessel to arrive at that port since the close of navigation the season before. After landing mail she returned to the southward and westward in order to develop the ice conditions and report them to the fleet of steamers due to arrive at Nome with passengers and freight. She was thus instrumental in furnishing sailing directions for a number of steamers who were waiting to get through the ice fields. Subsequently trips were made to Port Clarence, Siberia, and Point Barrow during the summer. On all these occasions various kinds of work were performed for the Bureau of Education and for the Department of Justice. On three occasions assistance was rendered to stranded vessels. At Point Barrow she took on board a number of destitute seamen from the wrecked schooners *Transit* and *Elvira* and transported them to Nome. At the request of the Canadian Government, the *Bear* while returning from Point Barrow made an attempt to rescue the survivors of the Canadian Polar Expedition which had been wrecked in the steamer *Karluk* near Wrangel Island in the Arctic Ocean. Stormy weather with thick fog and heavy snow squalls was experienced, and after several days of unsuccessful effort to break through the heavy ice it was deemed advisable to return to Nome to replenish the coal before making further attempt to rescue the shipwrecked men. After a delay of four days at Nome, due to bad weather, sufficient coal was received on board and the *Bear* started again for Wrangel Island on September 5. On September 8, in latitude 69° 55′, longitude 175° 30′, a schooner was sighted, which proved to be the gas schooner *King and Winge*. Owing to her light draft this vessel had succeeded in landing at Wrangel Island, where eight members of the expedition were found, together with one Eskimo, his wife and two children. The survivors were transferred to the cutter and being in a very exhausted condition were all placed under the care of the surgeon. When the *Bear* came south at the close of navigation the shipwrecked men were landed at Vancouver, British Columbia.

In the report of his northern cruise the commanding officer of the *Bear* calls attention to the wholesale slaughter of walrus in Arctic waters outside the territorial limits, both by American and foreign

Treasury - Annual Reports 1915

FINANCES

BASKING TURTLES - LAYSAN

DATE/TIME	NO. TURTLES	SIZE/SEX	SITE	COMMENTS
8/30/77 2000	1	AQ	(Ross) GRAVE POINT	Left hind limb ½ missing — deep scratches in shell — MOON FULL — FAT HIND QUARTERS
9/1/77 0005	1	AO♂	#2377 NE point	large, clean shell, no tags or injuries

OBSERVATIONS OF FEEDING TURTLES (LAYSAN)

DATE/TIME	NO. TURTLES	SIZE	SITE	REMARKS
8/31	1	~ 20"	off beach rocks	- post wreck? S W side
9/1 2PM	3	2 small juvenile, 1 Adult	off NE point	
8/31	1	juvenile	off stern of E Rider	
9/2	1 (sleeping)	juvenile	in cave in ER anchorage	
9/2	1	juvenile (?)	asper patty - followed for ~ 80 yards - NE off rock close to shore.	

TOTAL NO. Turtles observed - 7 (6 JUV 1 A)

8/31 WEDNESDAY — up around 3AM shooting the shit with Naftel —

0730 Awake — Ashore on Laysan about 9AM — With Bryan to NW location of "nests" — June 5, 6, 7 = 2x with excavations, one site with tracks only. First, going around island, by 2 logs just into vegetation zone, beach morning glory (June 7) — 2 pits, 1 small, 1 large, fine odd almost powdery sand (sample taken) — Excavated larger one — nothing.

~ 25 yards East — June 5 or 6 "nest" — shallow excavation — nothing

~ 50 yards further East — May 20

~ up higher on beach — July 20 — considerable excavation — nothing —

~ August 20 — Cross Point 2 — looks good

chronological

May 20 — 1 pit (low on beach)
June 5 or 6 — 1 pit — shallow
June 7 — 2 pits (1 large, 1 small)
July 20 — 1 pit (large) high on beach
Cross Point — 2 pits (1 large, 1 small)

Kawakawa - very likely a small stock - a population of species

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Fisheries Center
Honolulu and La Jolla Laboratories
P. O. Box 3830
Honolulu, Hawaii 96812

Honolulu Laboratory-National Marine Fisheries Service
Pelagic Fisheries Resources
Robert A. Skillman

I. Motivation for assessing pelagic fisheries resources.

Since the commercial fisheries vessels began going up to the NWHI primarily to fish for spiny lobsters and various bottom fishes, we have been receiving reports on the great abundance and large size of kawakawa, kahala, and white ulua. Our original intent therefore was to assess the commercial potential of pelagic species, particularly the kawakawa, for nearshore harvesting. Because of the likely competition between these pelagic fishes and seabirds for prey, we are considering food prey studies in addition to the zooplankton work being performed at the Lab. We are aware of the potential recreational utilization of some of the resources but have not designed any studies in this area as yet.

II. Objectives of the study.

The objectives of the study are to assess the relative abundance of the pelagic fishes, particularly the kawakawa, and to address the interaction of this species with the seabirds of the refuge.

III. Research activities.

Trolling transects to determine relative abundance of pelagic species. Separation of stocks through study of age-class structure, age and growth, morphometrics, genetics, and movement of tagged individuals. Interaction of pelagic fish species with seabirds through stomach analysis.

IV. Findings to date

The best catches of kawakawa and yellowfin tuna occurred where bottom depth increased rapidly. Seabirds were abundant in the areas yielding good catches, but successfully fished tuna schools were seldom accompanied by actively working bird flocks. Yellowfin tuna were generally taken in deeper waters than were kawakawa, and the larger sized individuals of each species were generally taken in deeper waters.
The total catch for 164 hours and 58 minutes of trolling was 845 kawakawa, 266 yellowfin tuna, and 1,277 for all species landed on the last cruise. The catch rates in individuals per hour trolled

STOMACH ANALYSES - SMALL TURTLES - TURTLE PARTS ?

were 5.12 for kawakawa, 1.61 for yellowfin tuna, and 7.74 for all species. Kawakawa were most abundant at Nihoa (13.20/hour), Necker (8.88/hour), French Frigate Shoals (9.00/hour), and Laysan (8.37/hour). A total of 897 fishes were tagged (679 kawakawa, 195 yellowfin tuna). Otoliths were collected from 66 kawakawa, but these have not been aged as yet.

9 June 1977 Boardapproved.

SEMINAR WORKSHOP
ON THE
NORTHWESTERN HAWAIIAN ISLANDS COOPERATIVE STUDY

22 November 1977

RESEARCH PROGRAMS - Hawaii Division of Fish and Game

Nearshore Fisheries Resources (Outline)

I. INTRODUCTION

A. Objectives
B. Description of Cruise

II. SURVEY PROCEDURES

A. General Description
B. Selection of Stations
C. Survey Methods
D. Collection of Specimens and Samples

III. RESULTS

A. Transect Conducted
B. Species Composition and Samples

IV. PROBLEMS ENCOUNTERED

A. Sharks
B. Turbid water areas
C. Lack of suitable landmarks
D. Species identification

V. PROGRESS OF STUDY

A. Transect data
B. Specimens and samples
C. Future needs

P&H - Lisiansti - MARO

24 TRANSECT - 150-200 yds.

15 DIAMOND

17 GEN. Obser.

Summary Report on cruise will be available soon -

MOP stomach contents analyses

Change in Hawaiian monk seal populations 1958 to 1977.

Island 1913	1958 [1]	1976	1977	Percent [2] change
Kure	142	29	52	(-) 71
Midway	76	1	5	(-) 96
Pearl & Hermes	338	26	43	(-) 90
Lisianski	281	127	106	(-) 59
Laysan	326	186	212	(-) 39
French Frigate	43	195	223	(+)386

NECKER ?

1/ Rice, D.W. 1960. J. Mammal. 41(3):376-385.

2/ Percent change is calculated from the average of the 1976 & 1977 as follows:

$$\text{Percent Change} = \frac{|C_{58} - \bar{C}_{76\text{-}77}|}{C_{58}}$$

Where: C_{58} is the island census from 1958, and

$\bar{C}_{76\text{-}77}$ is the mean of the island censuses for 1976 and 1977.

Techniques

Helicopter

Tag data

1959

[1964 - 1973 USFW]

— contact w/ Fishing Gear

— Rukele

R.L. DeLong/ November 1977

Population structure of Hawaiian monk seals in Northwestern Hawaiian Islands, 1976 and 1977.

Island Date	Data Source	Adults	Sa/Juv	Pups	Pups/Ad	J-Sa/Ad
French Frigate						
1976	3/	135	81	53	.393	.600
1977	7/	154	63	50	.325	.409
Laysan						
1976	3/	116	80	40	.345	.690
1977	6/	112	120	42	.375	1.071
Lisianski						
1976	1/	79	28	20	.253	.354
1977	2/& 5/	79	26	15	.190	.329
Pearl& Hermes						
1976	3/	22	4	4	.182	.182
1977	2/	28	9	6	.214	.320
Midway						
1976	1/	1	0	0	.000	.000
1977	2/	3	1	1	.333	.333
Kure						
1976	1/	26	0	6	.231	.000
1976	4/	26	0	13	.500	.000
1977	2/	19	1	4	.211	.053

1/ 1976 monk seal survey report, Processed report, NWFC
2/ 1977 monk seal survey report, Processed report, NWAFC
3/Current information on Hawaiian monk seal, Bergen FAO Meeting, Sept. 19
4/ Memo to A.M.Johnson, 13 October 1976: 1976 pup production on Kure.
5/ July 1977 survey by Brent Giezentanner, H&PINWR, USFWS, Honolulu.
6/ 1977 Census summary for Laysan Island, Brian and Pat Johnson, Honolulu.
7/ Data from Mark J. Rauzon, DCR, FWS, Anchorage.

R.L. DeLong/November 1977

Seminar Workshop

on the

NORTHWESTERN HAWAIIAN ISLANDS COOPERATIVE STUDY

22 November 1977

US Fish and Wildlife Service
J. Brent Giezentanner, Refuge Manager
300 Ala Moana Blvd., Room 5302
PO Box 50167
Honolulu, Hawaii 96850
(808) 546-5608

FWS Outline - Seabird and Monk Seal Surveys

I. Cooperative Study Responsibilities

A. "To study and assess avian resources of the Hawaiian Islands National Wildlife Refuge that will include determining a base-line magnitude of the marine birds, an inventory of food utilized, major feeding areas, and consumptive rates."

B. "Make an assessment of the potential effect of commercial and recreational fishing upon the associated marine birds in cooperation with the other agencies who will be assessing the fish resources."

C. Cooperate with the National Marine Fisheries Service and Hawaii Institute of Marine Biology by continuing surveys of the Hawaiian monk seal and green sea turtle to determine current status of these species.

II. Progress to Date

A. Developed: Research Plan for Study of Seabird Resources in the Northwestern Hawaiian Islands. Prepared by Robert J. Shallenberger, Ph.D., Wildlife Biologist, Temporary, USFWS. June 1977.

This paper presents in detail the following work tasks we hope to accomplish in order to provide an adequate data base upon which to evaluate the potential impact of commercial fishing on seabird populations in the Northwest Islands.

Work Tasks:

1. Literature Survey.
2. Patterns of Abundance and Distribution of Hawaiian Seabirds.
3. Nesting Locations and Breeding Populations of Seabirds in the Northwest Islands.
4. Breeding Cycles and Patterns of Colony Occupation.
5. Recent and Historical Trends in Seabird Productivity.
6. Natural Limiting Factors Affecting Seabird Populations.
7. Man-related Influences Affecting Seabird Populations.
8. Nesting Habitat of Seabirds and Interrelationships of Different Species.
9. Impact of Human Activity at Sea on Seabirds of the Northwest Islands.
10. Patterns of Food Preference and Feeding Methods of Hawaiian Seabirds.
11. Abundance and Distribution of Seabird Prey and the Role of Seabird Prey in the Marine Ecosystem.
12. Predictive Evaluation of Commercial Fishing Activities in the Northwest Islands.
13. Synthesis of Data Relating to the Potential Impacts of Commercial Fishing on Seabird Resources of the Northwest Islands.

B. An Annotated Bibliography of the Northwestern Hawaiian Islands compiled by Edwin H. Bryan, Jr. (final draft being typed).

This report includes an historical and geographical description of the islands in the Northwestern chain as well as an extensive annotated bibliography of the region including published research performed to date.

C. Bibliography of Pacific Islands Research compiled by Documentation Research Associates under contract to USFWS, Washington, DC.

D. Appointment of Craig Harrison, USFWS, OBS, Anchorage, Alaska, as the Seabird Biologist, GS-11, Career-Seasonal for the Pacific and Hawaiian Islands Refuges. Harrison is scheduled to begin work NLT January 1, 1978.

E. Cursory seabird census of the Northwest Hawaiian Islands completed by refuge personnel aboard the T. Cromwell (July 4 - August 17, 1977). Number and stage of nesting noted for all species. Census of five endangered species: Laysan duck, Laysan finch, Nihoa finch, Nihoa millerbird, Hawaiian monk seal; and one threatened species, green sea turtles was completed. Data on seals and turtles turned over to appropriate researchers. This seabird census was restricted due to the expectation of a seabird biologist position who would later dictate the degree and fashion of seabird work on the islands.

III. Problems Encountered to Date

A. Endangered Species Act and the Marine Mammal Act restrict activities onand around islands in the Northwestern chain. Five endangered species are present: Laysan duck, Laysan finch, Nihoa finch, Nihoa millerbird, and Hawaiian monk seal; and one soon to be "threatened" species, green sea turtle.

B. Seabird Biologist position not approved and selected until late November, 1977; thus restricting all prior seabird research activities.

C. Anticipate logistic support problems:

1. Need more than one billet on the T. Cromwell cruises to the Northwestern islands.

2. Need to make daylight pelagic seabird counts between islands, perhaps necessitating daytime travel toward next island instead of the normal evening travel.

3. Additional support as determined by Seabird Biologist.

D. Anticipate need of technical support in analysis of seabird prey species (gullett analysis). Perhaps Sea Grant would help out in this fashion.

E. Will require logistic support for periodic long-term camps at Laysan, Lisianski, possibly French Frigate Shoals, Necker, and Nihoa.

J. Brent Gustafson