TRUST TERRITORY OF THE PACIFIC ISLANDS
OFFICE OF THE DISTRICT ADMINISTRATOR
**Marine Resources Division**
YAP, WESTERN CAROLINE ISLANDS 96943

CABLE ADDRESS
DISTAD YAP

March 25, 1975

George H. Balazs
Hawaii Institute of Marine Biology
P.O. Box 1346
Kaneohe, Hawaii 96744

Dear George,

Its been quite a while since we corresponded on the subject of turtles. However, a recent letter of yours in the Pacific Islands Monthly once again reminded me of your activities.

I was quite suprised to learn of turtles appearing at French Frigate shoals with U and V shaped notches cut into the marginal plates. Perhaps you remember that I told you of our activities at West Fayu Atoll beginning in 1972. To date we have released over 500 hatchlings (average size at release 85-90 mm straight carapace length). It is inconceivable to me that your turtles are my turtles. Nevertheless, my crew at West Fayu reported capturing two females at West Fayu in May, 1974 with the same markings.

We notch our turtles on the third marginal plate, ritht side, directly over the rear flipper. They are notched when approximately two weeks old, and have not experienced any ill-effects during the remaining time from notching to release.

This is truly a mystery. Perhaps you could tell us how large the mature French Frigate turtles were. I believe that those of the central Carolines are a bit larger when they begin nesting. I have published an article on green turtles and their relationships with man in the central Carolines (Micronesica, December 1974) and will send you a copy for your files as soon as they are received. Meanwhile, let me know your thoughts about these notched turtles.

By the way, the man who was helping me in 1972 at West Fayu (the same who accompanied me to Hawaii that year and I believe was with us on your boat one evening for dinner) is presently in Hawaii assisting Ben Finney of the East-West Center with their canoe project. Please contact him, Pius Piailug, through Dr. Ben Finney and appraise him of these developments.

Sincerely,

Mike A. McCoy
District Fisheries Officer

cc: Chief, Marine Resources.
District Administrator, Yap

TRUST TERRITORY OF THE PACIFIC ISLANDS
OFFICE OF THE DISTRICT ADMINISTRATOR
**Marine Resources Division**
YAP, WESTERN CAROLINE ISLANDS 96943

CABLE ADDRESS
DISTAD YAP

March 8, 1976

Mr. George H. Balazs
Fr. Marine Biologist
Hawaii Institute of Marine Biology
P. O. Box 1346, Coconut Islands
Kaneohe, Hawaii 96744

Dear George,

Thanks for the copy of your comments to Robert Schoning regarding listing of green sea turtles on the endangered species list. Also, thanks for mentioning the situation vis a vis traditional usage of turtle in the central Caroline Islands.

I hope to step up our investigations this coming season, how that I have a boat with which to work. Attached is a fact sheet regarding the vessel; and it will give you an idea of what has kept me busy for the past 24 months or so. I am presently acting as captain, along with other chores as Fisheries Officer here. Fortunately, I have Jesse Marehalau hired as an assistant now, and he is taking alot of the load, Jess graduated from Chaminade in Hawaii about a year ago, and did some work at the NMFS lab with Tom Hida and others; he also worked at Sand Island with Virginia (Nancy) Wong.

Anyway, I have a boat, and we have to fish with it to make money for operations. I just returned from Ngulu atoll, where we spotted numerous greens in the lagoon, and nests on the reef islands of the atoll. In February this is a strange occurance (unless the Ngulu nesting turtles are tied in with the Yap and Palau populations: distance is only 65 miles). I will begin tagging as soon as social problems with people there can be worked out. Meanwhile, with all of the organizations you are working with, is there any $$ around which would help us with exploratory turtle work? Margie Falanruw and I have formed the Yap Institute of Natural Science and Janss has helped us get it registered as a non-profit corporation to comply with US tax laws. We could be a tax write-off for a donor, if thats the way people do things. Let me know if you know of anyplace or anyone who might be interested. Even a few hundred dollars to help with boat expenses would be a start. Thanks, and keep me informed of your work in Hawaii.

Sincerely,

Mike McCoy
District Fisheries Officer, Yap

cc: Chief, Marine Resources, Saipan
Jim McVey, MMDC

MMC/sso

THE YAP DIVISION OF MARINE RESOURCES AND YAP DISTRICT FISHING AUTHORITY ARE PROUD TO ANNOUNCE THE COMMENCEMENT OF OPERATIONS ABOARD


MFV LIOMARAN

FISHING IN THE OUTER ISLANDS OF YAP DISTRICT AND BASED IN YAP, WESTERN CAROLINE ISLANDS. TO BE OPERATED IN THE BEST INTERESTS OF THE PEOPLE OF YAP DISTRICT BY THE YAP DISTRICT FISHING AUTHORITY. P.O. BOX 338, YAP, WESTERN CAROLINE ISLANDS 96943.

VESSEL SPECIFICATIONS:
LENGTH: 53 ft.
WIDTH: 18 ft.
DEPTH: 6.5 ft.
LIGHT DISPLACEMENT: 49 tons
HULL MATERIAL: Ferro-cement
POWER: Twin D3304 Caterpillar diesels
REFRIGERATION: Thermo-King Blast Freeze and Holding Unit. -20 degrees F
ELECTRONICS: radar, SSB radio, VHF radio, Furuno Depth Recorder, Benmar Depth recorder, Loran A/C
BUILT BY: Honiara Marina and Shipyard Co. Ltd of Honiara, Solomon Islands
LAUNCHED: September, 1975
CREW ACCOMMODATION: For eight
SPEED: 8.5 knots
FISHING GEAR: Snapper reels for bottom fishing: surround and assorted nets for use in uninhabited atolls and banks. Near-reef and off-shore trolling gear.
TOTAL ACQUISITION COST: $130,000.00

FUNDS MADE AVAILABLE THROUGH THE CONGRESS OF MICRONESIA, P.L. 5-10 AND SUBSEQENT FUNDING. YAP MARINE RESOURCES AND THE YAP DISTRICT FISHING AUTHORITY WOULD PARTICULARLY LIKE TO THANK THE YAP DELEGATION TO THE CONGRESS OF MICRONESIA, THE CONGRESS RESOURCES AND DEVELOPMENT COMMITTEE, AND THE YAP OFFICE OF THE DISTRICT ADMINISTRATOR FOR THEIR FAITH IN AND SUPPORT OF THIS PROJECT.

**MICRONESIAN MARITIME AUTHORITY**
P.O. BOX D; KOLONIA, PONAPE
EASTERN CAROLINE ISLANDS. 96941

June 17, 1982

Mr. George Balazs
University of Hawaii at Manoa
Hawaii Institute for Marine Biology
P O Box 1346
Haneohe, Hawaii 96744

Dear George:

Thanks for the copy of the letter regarding turtles in the outer islands. As you can see from the attached, I also have my sources of information regarding the taking of turtles in the outer islands. The situation is a bit more complicated than it first appears. However, be assured I am collecting what information I can on the taking of turtles by the field trip ship for future action (I hope). I honestly can't address the cruelty aspects of how turtles are handled. They all end up eaten, and while the method by which they are captured, trussed, and later killed may be cruel to some, its an expedient based on the time of travel required to get the turtles back to the island, and the manner in which they will be transported.

I have information from Yap and Truk that the government vessels are assisting in the taking of turtles for shipment back to the outer islands, and in some instances to the State centers. What usually happens is that a canoe will be at the turtles island capturing turtles, and the field trip ship either plans its arrival to coincide with an abundance of captured turtles, or happens on the scene when they are available. This latter point is important (to show that it is premeditated and not on a coincidental basis). I have not been able to find out for sure which it is. There are several officials involved in this, and usually it is difficult to put the responsibility on whoever it is. These officials are powerful politically, and are using the opportunity to transport turtles on the field trip to show the outer islanders that they are helping them out.

Thus, I hope you can appreciate that the situation is a bit more complicated than it might first appear. If all turtles were being returned to the State Center for sale, then it would be fairly easy to attempt to curtail the practice.

In fact, Ponape has taken steps in this direction, (but will probably revert to old ways when the expatriates who are pressing it depart). On the other hand, when the majority of turtles are being returned to the outer islands where they would be destined anyway (for local consumption in accordance with past practice), then the situation becomes one of showing how the use of field trip ships is actually detrimental in the long run. Thats pretty hard to explain to outer islanders in the face of 30 or 40 turtles that will be consumed locally and not put onto the market.

I honestly don't have a solution for the situation. I am in contact with many of the personalities involved, but on different issues, and have no real "legal" basis on which to express my opinions. The top-level people who may or may not be involved are of course concerned with how outer islanders perceive the assistance being given them by the government. Transportation of 30 or 40 turtles is considered assistance, and can be valuable at the ballot box.

Its a situation that must be taken care of locally. No amount of letter writing or complaining can be done from the outside. I am bringing the problem to the attention of people in the outer islands, in the hope that they in turn will instigate the necessary requests to the State Center to curtail the practice. That will be tough.

Sincerely,

Mike A. McCoy
Executive Director, MMA

2 June 1982

Mike McCoy
Micronesian Maritime Authority
P.O. Box D
Kolonia, Ponape
F.S.M. 96941

Dear Mike:

I don't know if you are still doing a turtle survey but for the record -- during the last voyage of the Micro Spirit (trip began on 24th April) approximately 48 turtles were taken from Pig (latter part of April--early part of May; I'm not sure of the exact date; I've forgotten). I think all the turtles captured were females. The 26+ I saw off-loaded on Satawal were females and the remaining turtles on deck were females. Some eggs were taken also as I saw a few baskets of these hanging around the deck.

Apparently during the Micro Dawn's trip to Satawal/ Lamotrek (about a week before the arrival of the Spirit???) verbal reports indicate that at least 30 turtles were taken from Pig(?).

Approximately 80 turtles taken within a two week period; quite a lot, yes?

Working with Margie is as interesting as ever. I like it.

Take care of yourself.

Love,

Irene

**MICRONESIAN MARITIME AUTHORITY**
P.O. BOX D; KOLONIA, PONAPE
EASTERN CAROLINE ISLANDS, 96941

June 27, 1983

Mr. George Balazs
National Marine Fisheries Service
P O Box 3830
Honolulu, Hawaii
96812

Dear George:

During the past few months there has been a writer at Satawal Island studying canoe navigation. He has kept me abreast of his activities and has stopped here both coming and going to Satawal. Prior to his departure for the island I asked him to keep a record of turtle captures during his stay there. The writer, Steven Thomas, has given me a listing of numbers of turtles, but has omitted several important things, such as sex of the animals catured and location of capture for some. Nevertheless, his stay for 4 months fills another gap in the information, and I send it along for your "bits and pieces" file. Of interest is the comparison of numbers of turtles taken to the island by government vessels, and those taken by canoe.

| Date | Number of Turtles captured | How Transported | Origin | Remarks |
|---|---|---|---|---|
| 3/8/83 | 3 | Govt.ship | unknown | Steve says vessel Micro Spirit brought 3 to Satawal but had captured 7 total. |
| 3/18/83 | 5 | 2 canoes | W.Fayu | Consumed on Satawal |
| 4/1/83 | 8 | unstated | Lamotrek | Assume 8 were taken Lamotrek/Elato and transported back to Satawal |
| 4/6/83 | 2 | Govt.ship | unknown | On deck of Caroline Islands |
| 4/9/83 | 2 | 1 canoe | W. Fayu | brought to Satawal and consumed. |
| 4/10/83 | 1 | ------ | Satawal | Taken at NW side of island, unstated whether nesting or captured in water. |

| | | | | |
|---|---|---|---|---|
| 4/15/83 | 5 | Canoe | Pikelot | Brought to Satawal by canoe from Tamatam. They captured 14 while on Pikelot; assume some consumed, some sent back to W. islands of Truk on canoes. |
| 4/15/83 | 7 | govt ship | Pikelot | Micro Dwan took 7 to Pulap Island, Truk. |
| 4/15/83 | 3 | canoe | Pikelot | Satawal canoe took 3 to Satawal following month. |
| 5/7/83 | 2 | ---- | Satawal | Catured on NW side of Satawal; unstated whether nesting or captured in water. |
| 5/2/83 | 1 (Hawksbill) | canoe | Satawal | People in canoe captured small (20") hawksbill floating in water. |
| 5/10/83 | -0- | canoe | Satawal | pursued 2 in water, but escaped. |
| 5/13/83 | 1 | ---- | Satawal | Caught on NW side of island unstated whether nesting or caught in water. |
| 5/22/83 | 9 | canoe | W. Fayu | Brought to Satawal by 2 canoes. |

I will write Steven and try and get some details from him. We didn't have much time to go over this list during his short stay here a few days ago.

Sincerely,

Mike A. McCoy
Executive Director, MMA

**MICRONESIAN MARITIME AUTHORITY**
P.O. BOX D; KOLONIA, PONAPE
EASTERN CAROLINE ISLANDS, 96941

November 10, 1983

Mr. George Balazs
National Marine Fisheries Service
P O Box 3830
Honolulu, Hawaii
96812

Dear George:

Thank you for the letters and correspondence with Yap. I am a bit surprised that nobody has asked my input on the "turtle ranching", particularly since Gawel and I are the only ones that have ever done it. Alot of research and work has taken place since the initial work in 1972 and 1974. The concept of "ranching" has come under fire in recent years as more and more information came to light regarding basic turtle biology. You are in a better position to cite the sources, but essentially I believe that there were fears expressed regarding dis-orientation (lack of imprinting) on young who were raised on ranches and then released. After discussions with Archie Carr and others I concluded that while nobody could refute the ranching concept completely, a hedge would be to release 50% of all hatchlings immediately. This 50% would be protected from preators to the water's edge, thus statistically increasing their survival potential over totally unassisted hatchlings. This would require careful monitoring of nests, not an impossible job on an island the size of W. Fayu. Following are my specific comments regarding the proposal:

1. Five pens of the size noted for 1,000 turtles is too few pens. Maximum number of turtles per pen should not exceed 50-70, or the inhabitants of one nest. Feeding frenzies can increase mortiality with a large number of turtles enclosed in a small space, as you know.

2. The requirement of 25-30 lbs. of fish per day for the 1,000 turtles assumes they eat the same amount over the period of captivity. This of course is not correct, and their appetites will increase with size. But since there is no specific time period given for hatchling release, I can't estimate food requirements.

3. A duration of 3 months is insufficient to cover the entire nexting season. My estimates are that the nesting probably occurs for at least 6 months, commencing in April, for W. Fayu, and longer for other islands.

4. A tagging component is totally missing from the proposal. It should include tagging of all mature females (as well as males which can be captured) and release to determine number of nesting periods per year.

5. What to do with the protein expectations of Satawal Island during the turtle season when assumedly turtle meat is available for subsitance? We tried to get around this in 1972 by supplying about 1,000 lbs of rock-salt (the kind used for making brine on commercial fishing vessels) so that inhabitants can salt fish and transport to Satawal. Unfortunately, a portion of the salt was used on turtle meat as well. Arrangements would have to made beforehand with the chiefs of the islands concerned on a solution to this problem.

6. Choosing participants from the outer islands is very important. While it doesn't have to be reflected in the plan, inhabitants of those islands which traditionally own the turtle island(s) in question would have to compose the team. Inhabitants from other islands could cause problems. It is also important in this regard to encourage the chiefs and inhabitants of the island(s) so that they feel the project is one they can participate in, not something mandated from the outside. For Satawal and W. Fayu I know this will be no problem, as they have asked me for years to renew the effort we started in 1972.

In sum, I would support the concept of the work, however think that alot more planning needs to be put into the final execution. A five-year plan of action, with a progressive program based on results from previous year's work would be required. The sociological aspects alluded to above would have to be handled carefully. While I realize such detail may not be necessary for the document under review, certain aspects must be worked out ahead of time. I think that they can eliminate specific reference to the numbers of hatchlings involved, as cycles of nesting have produced varying numbers of turtles at different islands over the past 10 years. The 5-year plan of action could address this problem adequately. If you have any other questions or thoughts, let me know. I will be away from Ponape from November 24-December 16.

Sincerely,

Mike A. McCoy
Executive Director, MMA

cc: Mike Gawel, FSM R & D

# Palau nabs 2 ships for illegal fishing

By SUZETTE KIOSHI
Daily News Staff

PALAU — Palau government officials recently seized two more privately owned Taiwanese fishing vessels caught illegally fishing within its territorial waters.

The vessels, Rosa I and Rosa III, were spotted on Helen's Reef on Jan. 21 by police on board a field trip vessel to the southwest islands.

According to Vic Uaerbelau, assistant attorney general, the vessels had "numerous trochus shells and reef fish" in their holds when they were seized.

Bond hearings for the two ships were held Friday, and each captain will be released on $10,000 cash bail or $20,000 surety. The 28 crew members of the ships must post $1,500 cash bail or $3,000 surety per person. A trial date has not been set.

According to Uaerbelau, the captains and crew members are charged with illegal entry into Palau waters and illegal fishing.

Uaerbelau says investigation is continuing into whether the ships were using explosives while fishing. Other charges may be filed when the investigations are completed.

In October, a report was received by the government that two fishing vessels were using explosives at Helen's Reef, but the vessels escaped the territorial waters as government officials approached them.

Uaerbelau says they suspect the two ships now in custody may be the same ships spotted in October.

The two ships had permission to fish in Palau in October, but they didn't clear themselves with the government when they left, as is required when permits are issued.

Another vessel, the Rosa II, was seized on Dec. 19 when it was found inside Malakal Harbor without proper papers, said Uaerbelau. Attorney General Russ Weller is in Taiw negotiating for the shi release.

Under Palau law, in add tion to the ships' owne forfeiting the ships, the ca tains could be fined a ma imum of $50,000.

PACIFIC DAILY NEWS, Tuesday, January 31, 1984

## Directors become consultants



Two former high ranking officers within the Department of Public Safety began new jobs Monday as consultants to DPS Director Judith P. Guthertz, according to a police official.

Henry F. Taltano, a colonel and former acting DPS director, and Gregorio G. Perez, a former DPS director, are serving as consultants to Guthertz for police operations.

Perez was the department's director whose 18-month tenure was marked by massive investigations into police corruption.

PACIFIC DAILY NEWS, Wednesday, February 1, 1984

96 Mt. Auburn St. Cambridge, MA 02138 (617) 497-9028 • 28 Kent St. Newburyport, MA 01950

31 OCT '84

GEORGE -

NOTE OF INTEREST FROM SATAWAL -

THINGS LOOKING UP -

Mike

(IN JAPAN NOV 3-15 ; SUVA FIJI : DEC 7-16)

# THE NAVIGATORS

330 Essex St.
Salem MA. 01970
U.S.A.

Oct 14, 1984

Mike McCoy
Director,
Micronesian Maritime Authority
Kolonia, Ponape
Federated States of Micronesia, 96941

Dear Mike:

Hope all are well in Ponape. I left Satawal on the student run, met my wife in Guam and we took a trip to Honkong, Shanghai, Beijing, Singapore and Bankok. Now back in the cold northeast and hard at work.

All was well on Satawal when I left. I had a great visit and am done with my research for the time being. Sam and I are hoping to get funding for another film concentrating on Satawal alone. Mau wants to do an educational film of Appalu which will remain in Micronesia and be shown in the schools. Funding is very tough right now and the immediate prospects are--well--nonexistant. It will probably be a long slow part time process.

A bit of news you will be interested in is that Piailug convinced the chiefs to re-institute the taboo on taking small turtles and eggs. There is now a fifty dollar fine for transgression. Mau wanted me to ask you to arrange for a roll of mesh wire (about one inch squares) and a bunch of re-bar to be shipped out to him on Satawal so he can build another turtle pen on Pigale. I assured Mau I would write to you. Incidentally during the three months I was on the island we took a total of about 30 turtles, two of them Hawksbill. I can reconstruct an exact count if you wish.

I gave your tape of The Navigators to Piailug and will replace it when I can get a chance to get into Sam's studio and dub one. Sorry for the delay but there is now a video machine on Satawal and the film has been shown there. Mau feels it has piqued some interest in navigation.

That's about all for now. Keep in touch.

Sincerely yours,

Stephen Thomas

PLEASE SEND TO ME IF YOU HAVE NEWSLETTER AMENDMENTS

MIKE A. McCOY, EXECUTIVE DIRECTOR
MICRONESIAN MARITIME
P. O. Box D
Ponape, E. Caroline Islands 9694

George,
While it doesn't have any bearing on the situation, I think you should know that the Ben Sablan mentioned in the letter you sent is the guy withwhom I have had problems with in the past. He used to be an employee in Ponape before I arrived, and they sent him on full government pay & government leave to Oregon State for his education. After 2 years of hearing practically nothing from him and then getting a curt letter from him, I terminated his leave (which was in excess of government regulations anyhow). He has never forgiven me, and I've heard of a few things he has said behind my back which are not very complimentary. Needless to say, I feel vindicated as he quit his job in CMNI and is now a politician like so many others. Anyway, you should know about this situation in case it ever comes up...

Mike

**MICRONESIAN MARITIME AUTHORITY**
P.O. BOX D; KOLONIA, PONAPE
EASTERN CAROLINE ISLANDS, 96941

23 September 1985

Dear George,

Thanks for your letter of the 13th and the info from CMNI and Guam. I really don't know how to react or respond. While we all seem to have an idea of the problem, nobody has come up with the answers. Perhaps the idea of a recovery plan/team would be the best way to synthesize everything and everybody together and get something going. I'd appreciate an address from you as to where I could get a copy of the Hawaii plan (I assume in DC). After taking a look at it I will have a better idea of what we are talking about.

Meanwhile my thoughts. I am not adverse into putting effort into work on the admininstrative level, however I think it is fairly useless in this part of the world unless grass-roots work and "localization" takes place as well. In the past 5 or 6 years in Ponape I have seen enforcement of local laws regarding sea turtles, but they have always been initiated by an expatriate and enforced by an expatriate. In recent cases it was the former State Fisheries Officer reporting violations and the expatriate Attorney General goading his policemen into enforcement. In practical terms none of the local population really cared much about enforcing the laws and the reasoning behind those laws. Thus to me, I think basic hard-hitting education is the best answer. Its interesting to see bumper stickers and t-shirts about a nuclear free Pacific all over the place when most people don't have an idea of the issues invovled or the details. They simply like the idea and knowing something about Bikini or Eniwetok decide that anything nuclear is bad. If a semi-literate population can get the nuclear message straight without the details, mayby they could be receptive to conservation messages .

What of course is missing from the picture is, as always, $$money to effect the necessary education. If the recovery plan process helps to educate legislators, and if that in turn results in money to work at the local level, then I think we will be getting somewhere. If however the recovery plan remains a bureaucratic exercise to be enforced by the Ed Eckhoffs of the world , then I think it is largely a waste of time. Not because of Ed or his efforts, but because of the lack of backing from the local population.

I would start with the outer islands. All other things being equal, this is where the turtles come from and where initial efforts might help in the short term. Keeping the fishermen of Saipan from spearing or netting turtles around their island is not necessarily going to increase the population. And of course we have no idea if the turtles they spear are from the Yap outer islands or Philippines or farther up into the Bonins .

All of the above points are of course not new to you. The other problem out here is the turnover of personnel and the lack of long-term commitments. While Becky Madrisau may be doing something a bit "tainted" in Palau, he is one of the few Palauans on the face of the earth with even an inkling of an idea of the problems with sea turtle conservation. Peace Corps personnel and often their counterparts are stop-gap at best when it comes to the long range programs required.

Several years ago the US Forest Service initiated a TTPI-wide plan of mapping vegetation and assessment of resources. I am not sure of the details or the project itself. But what was important was that it provided for a full-time expert who worked on identifying the resources and collection of information. The expert was Margie Falanruw, which in itself lent credibility to the work performed. If there were funds for a similar post in turtle research, as opposed to (excuse me) bureaucratic activity increases, then I think we would receive the most"bang for the buck". Again, perhaps the Recovery Plan process will bring this out, I hope so.

That's it for now. Please send me the appropriate address from which to request a copy of the plan (or to save time request one for me).

Adios

Mike

# POHNPEI STATE GOVERNMENT

STATE OF POHNPEI
EASTERN CAROLINE ISLANDS
FEDERATED STATES OF MICRONESIA 96941

*Office of the Director*
*of Conservation*
*&*
*Resource Surveillance*

Marine Resources Div.
P.O. Box B
Kolonia, Pohnpei
FSM 96941
May 7, 1987

Dr. George Balazs
National Marine Fisheries Service
2570 Dole St.
Honolulu, HI 96822-2396

Dear Dr. Balazs:

Attached is a copy of the report written by Clay Edson concerning our Oroluk Turtle Project, which has been tagging turtles under your permit. I would like to have Clay "clean up" the report slightly and submit it to Marine Turtle Newsletter, but this will have to wait until later this year when he returns home from University of South Pacific. This project was funded by a donation by Ms. Donna Matson of Los Angeles, following a visit to Micronesia in 1985.

The project seems to have proceeded well, thanks to a good crew and preparation and training by Peace Corps volunteer Teresa Herring. I hope the data I am forwarding to you is useful for your work. Any suggestions for subsequent work would be greatly appreciated.

As always, Micronesian interest for turtles is high, especially from a culinary point of view. The need for conservation of these animals is important if future generations are to "taste" (even visually) this animal. If you know of materials suitable for schools or appropriate television programs which could be aired, please contact me. We might be able raise some funds for some public education.

Thank-you very much for your help with this project. I hope that this and future projects here in Pohnpei will contribute to scientific knowledge and public awareness of the vulnerability of the turtle populations.

Sincerely yours,

Flinn Curren

Flinn Curren

cc: Kikuo Apis, Director C&RS
Mike Gawel, FSM Chief of Marine Resources
Donna Matson, President Western Instructional Television
Teresa Herring
Clay Edson

attachments

sent in 1985
4301-4350 (50)

## GREEN TURTLE TAGGING AND OBSERVATION - 1986

AS OF THIS DATA SHEET, USED 4301-4338

Oroluk, Atoll, Pohnpei State
Federated States of Micronesia

| Turtle # | Tag # | Date | Time | Carapace Length(CM) | Activity | # Eggs |
|---|---|---|---|---|---|---|
| #01 | 4313/4314 | 04/30/86 | 0601 a.m. | 132.5 | False Crawl | |
| #02 | " | 05/04/86 | 0227 a.m. | 132.5 | False Crawl | |
| #03 | 4315/4316 | 05/16/86 | 0646 a.m. | 140.5 | False Crawl | |
| #04 | 4317/4318 | 05/21/86 | 0130 a.m. | 100 | False Crawl | |
| #05 | 4319/4320 | 05/22/86 | 0630 a.m. | 110 | False Crawl | |
| #06 4322? | 4321/4323 | 05/22/86 | 0655 a.m. | 100 | Nest | 92 |
| #07 | 4324/4325 | 05/27/86 | 0616 a.m. | 97.5 | Nest | 77 |
| #08 | 4326/4327 | 06/02/86 | 0530 a.m. | 99 | Nest | 72 |
| #09 4328? 4330? | 4329/4331 | 06/03/86 | 1211 a.m. | 110 | Nest | 127 |
| #10 | 4321/4323 | 06/05/86 | 0220 a.m. | 100 | Nest | 60 |
| #11 | 4324/4325 | 06/08/86 | 0200 a.m. | 97.5 | Nest | 103 |
| #12 | 4315/4316 | 06/10/86 | 0210 a.m. | 140.5 | Nest | 116 |
| #13 | 4321/4323 | 06/20/86 | 0345 a.m. | 100 | Nest | 86 |
| #14 | 4324/4325 | 06/21/86 | 1232 a.m. | 97.5 | Nest | 82 |
| #15 | 4332/4333 | 06/23/86 | 0515 a.m. | 106 | False Crawl | |
| #16 | 4332/4333 | 06/25/86 | 0530 a.m. | 106 | Nest | 138 |
| #17 4334? | 4335/4336 | 07/08/86 | 0710 a.m. | 125 | False Crawl | |
| #18 | 4324/4325 | 07/14/86 | 1137 p.m. | 97.5 | False Crawl | |
| #19 | 4337/4338 | 07/14/86 | 0530 a.m. | 103 | Nest | 86 |
| #20 | 4313/4314 | 07/15/86 | 1110 p.m. | 132.5 | False Crawl | |
| #21 | 4317/4318 | 07/16/86 | 1215 a.m. | 100 | Nest | 94 |
| #22 | 4337/4338 | 08/09/86 | 0420 a.m. | 103 | Nest | 93 |

REMAINING - 4339 - 4350 (12)

| | April '86 | May '86 | June '86 | July '86 | August '86 |
|---|---|---|---|---|---|
| Number of Turtles Tagged | One (1) | Five (5) | Three (3) | Two (2) = (11) | |
| Tagged Turtle Nests | | two (2) | Eight (8) | Two (2) | One (1) |
| Tagged Turtle False Crawls | One (1) | Four (4) | One (1) | Three (3) | |

COCONUT CRAB SURVEY - 1986
Oroluk, Atoll, Pohnpei State
Federated States of Micronesia

| | STATION #01 | STATION #02 | STATION #03 | |
|---|---|---|---|---|
| | Date 04/23/86 | | | |
| | Time 0827 p.m. | Time 0837 p.m. | Time 0837 p.m. | |
| Week 1 | #CC -0- | #CC -0- | #CC -0- | Total #None |
| | Date 04/30/86 | | | |
| | Time 1023 p.m. | Time 1033 p.m. | Time 1030 p.m. | |
| Week 2 | #CC -0- | #CC -0- | #CC -0- | Total #None |
| | Date 05/07/86 | | | |
| | Time 0951 p.m. | Time 0947 p.m. | Time 0942 p.m. | |
| Week 3 | #CC 18 | #CC 6 | #CC 2 | Total #26 |
| | Date 05/14/86 | | | |
| | Time 0851 p.m. | Time 0854 | Time 0856 | |
| Week 4 | #CC 1 | #CC 2 | #CC 1 | Total #4 |
| | Date 05/22/86 | | | |
| | Time 0931 p.m. | Time 0936 p.m. | Time 0934 p.m. | |
| Week 5 | #CC 20 | #CC 4 | #CC 18 | Total #42 |
| | Date 05/28/86 | | | |
| | Time 0927 p.m. | Time 0920 p.m. | Time 0923 p.m. | |
| Week 6 | #CC 29 | #CC 3 | #CC 15 | Total #47 |
| | Date 06/04/86 | | | |
| | Time 0936 p.m. | Time 0929 p.m. | Time 0934 | |
| Week 7 | #CC 12 | #CC 1 | #CC 11 | Total #24 |
| | Date 06/12/86 | | | |
| | Time 1045 p.m. | Time 1007 p.m. | Time 1014 p.m. | |
| Week 8 | #CC 12 | #CC 3 | #CC 7 | Total #22 |

# Turtle Nest Hatch Rate Monitoring

Methods: Four foot wide 1/4" mesh security wire fencing was placed around a nest after a turtle laid eggs. The fence was sunk approximately 20 inches into the ground. Care was taken to insure that the fence did not touch or damage any eggs. The nest was then monitored nightly. The number of hatched turtles were counted, and approximately one week following the hatch, the nest was examined to determine the fate of all the eggs.

Fence 1

Nest hatched June 30, examined July 8

1-turtle with left forward flipper deformed but alive (released in water, swimming slowly with zig-zag motion

1-turtle fully developed, out of shell but dead

97-empty egg shells, not counting pieces of small shell or just half (75 hatchlings observed)

7-eggs black inside, smelling like dead frog

4-eggs with fully developed turtle inside (dead) with egg yolk appearing red in color

1-egg with yellow merky liquid inside, no turtle

4-eggs with yellow yolk and small turtles inside

1-egg with yolk and no turtle, but red color on one side of the yolk

Fence 2

Date hatched: July 26, 1986 Nest examined August 7, 1986

42-hatchlings observed

8-eggs with solid yellow yolk and red color on side of yolk, no turtle

5-eggs with fully developed small turtle inside, egg yolk still large

2-eggs with watery yolk, no turtle evident

15-eggs with bones of small turtles and many worms

3-eggs missing (maybe mixed with others)

# OROLUK TURTLE PROJECT - SEPTEMBER 1986

by Clay Edson

Arriving on April 20 at Oroluk atoll was a sad day for me and my partner. Those residents of Oroluk already killed three female turtles to take them with the ship back to Pohnpei. Later we found out that those turtles were not tagged. Also we found out that two of our turtles that we tagged (tag #4303, 4304, and 4305) last year were killed and eaten last August. We collected the tags and encouraged them not to kill any turtles with tags.

We started night patrolling on the 21st of April till August 17, 1986. Every 15 minutes we walked up and down the beach looking for crawl tracks or turtles on the beach. Lights have to be dimmed down and noise reduced.

If we spotted female turtle came up to nest, we made sure the turtle did not see us. Disturbances will cause the turtle the crawl back to the ocean and maybe come back next week. We waited for the turtle to make her nest, and when she started laying eggs, we counted how many eggs were laid. After the turtle was finished laying eggs and started covering the nest, we measured her carapace and looked for any identifiable marks or tags. When she finished covering her nest, we turned her over and put two tags, one on each front flipper. After tagging we recorded all information on data sheet and let the turtle go.

Humerus bones were collected, noting date and location found and also date discarded when known. All humerus bones that we collected were close to the cook house. [These bones were forwarded to Dr. George Balazs of NMFS in Honolulu for research on determining age of turtles based on humerus bones.]

B. Nest Protection and hatching observations

We made three wiremesh fences about 3 ft. in diameter 4 feet tall to cover three of those nests that we previously counted the eggs and date they were layed. We dug around the nest to about 1 1/2 to 2 ft deep, to keep ghost crabs away from the eggs.

We checked the fenced nests up to 58 days after laying to see if those eggs already hatch. It takes about 2 months for those eggs to hatch but it can be 1-2 days before or after the 60 days.

After the eggs hatched, we counted them and put the numbers in our data form. We continued with headstarting procedures. If the nest was close to the water we just let them crawl to the ocean on their own. If the nest was way inland, we collected the hatchlings in a bucket and took them closer to the water. One of us had to get in the water and shine his flashlight into the water so when the hatchlings were put on the sand they crawled into the water where the light was. To make sure those hatchlings get to the water, those ghost crabs must be killed.

Then after 10 days, we dug up the nest to see how many unhatched eggs, egg with worms inside, undeveloped eggs and also spoiled ones. We did this to show us the birth rate and hatching rate.

C. Methods and result-coconut crab

Coconut crab is one of the food sources for those Kapinga people on Oroluk atoll. They get and eat them almost all those times when they don't have can meat or fish.

Coconut crab population surveying started on the April 25, 1986 and ended on the June 12, 1986. We started on three (3) selected stations close to the huts. Ropes were used to make three (3) 20 square feet areas in those selected places so the next time, the survey would be on the same spot. Finely chopped coconut meat from 6 coconuts were put inside each station one (1) hour before we counted the coconut crabs. This survey was done only once a week.

For the first and second week we got no counts on all the stations so we moved the stations more closer to the other side of the island. The third week we started seeing crabs in all three stations. This survey continued for 6 more weeks.

$$\text{Coconut crab estimate} = \frac{51 \text{ average \# of crabs}}{60 \text{ average sq. feet}}$$

We found out that the population of rats appears to be rapidly increasing and this increasing rat population appears to be decreasing the coconut crab population. Last year the rat population was less than this year. Residents of Oroluk estimate that the population of rats almost tripled the number of last year. They also said that those rats not only give the coconut crab hard problems but also they eat their bananas and food supplies.

Rats and harvesting of female coconut crabs will not conserve the crabs on Oroluk. This year we found coconut crab feeding in breadfruit trees at day time, which is not found last year.

Pohnpei Agriculture Station should be involved in this matter. Chemicals and rat traps should be sent there. The chemicals should be only effective to the rats. Cats might minimize the increasing of the rats.

D. Recommendation for how and where to improve turtle nesting areas

Turtles nest only where there is sand. The sand texture has to be good. We're sure that the turtles came from the lagoon to nest cause it is closer to the beach and also not too many huge rocks. Nesting is only happens at night time when the tide is high. Nests are sometimes made in the tidal line areas but mostly in or above the vegetation line.

Most of the sandy part of the beach is where the residents built their pig pens and some parts have trees with low branches that sometimes make it hard for the turtles to get inland to nest. Also, there may

be too many coconut trees in the nesting areas.

Recommendations

Those pig pens and the coconut trees should be removed to the rocky part of the island. Clean bushes and trees that are on the beach and nesting areas. Also this nesting areas should be avoided by the residents so that they will not disturb those eggs under the sand. Pigs and other pets should be confined to avoid to disturbing eggs. Minimize noise and light at night.

# TURTLE RANCHING

## PROJECT BACKGROUND

For centuries, the meat and eggs of turtles have provided an important source of protein for the inhabitants of Micronesia. In recent years, turtle populations have significantly decreased for a variety of reasons. While minimum size limits have been an important means of resource management, work by scientists has indicated that an even better means exists to increase the numbers of turtles.

The mortality rate for newly hatched turtles is extremely high. Birds, crabs, fish and sharks all prey heavily on them during their first hours of life. It has been demonstrated that if these newly hatched turtles are protected from their predators and placed in pens for a short while, their chances of survival increase dramatically. In 1974, a pilot project was conducted on West Fayu Island to do this, and impressive results were obtained considering that logistics prevented the teams arrival until after the major hatch had occured.

Green turtles (Chelonia mydas) are an important part of the diet of the outer islanders of Yap State. This project is an inexpensive and practical means by which their turtle food resource can be both maintained and expanded.

PROJECT DESCRIPTION

This project will be modeled after the previous project on West Fayu Island. It can be carried out at any turtle nesting island, but West Fayu may be the most feasible site. A team of men from the outer islands, under the leadership or direction of one biologist will be transported to the island just prior to the start of the turtle hatching season. (It is noted that the widespread interest in sea turtles should allow Yap State to find an interested biology student to be recruited for this job for a relatively low compensation.) The team of men would build five rectangular, portable pens 4'x6'x6' high, using a 1/4 inch rebar frame with 1/4 inch plastic mesh. These would be placed on the reef flat of the island such that there would be some standing water in the pens at the lowest tides. The pens will be constructed by wiring the plastic mesh wired to the rectangular frame, and each pen should hold 300 baby turtles. The team will have one boat with an outboard engine, fuel and spare parts. After placing the turtles in the pens, the men will fish to provide food for the turtles. It is estimated that it requires 25-30 pounds of fish per day to feed 1,000 turtles, and the objective is to raise 1,000 turtles during the season. Turtles can be released slowly over the project period, with the majority released at the close of the project (3 months). Most of the hatchlings will not be penned, but instead will be left undisturbed except for reducing the degree of land predation that otherwise occures. At the beginning of the project, low cost outside scientific personnel will be sought to work on tagging the turtles so that future evaluation of the program will be possible. It is planned for this program to

continue for at least five years as a means of boosting the turtle populations/food supply and to give enough time to evaluate the results of the initial efforts. This project will only be conducted with the full support to those islanders and chiefs who traditionally control the turtles and their nesting areas.

## ORGANIZATION AND STAFFING

The project will be organized by the biologist at Marine Resources. This division will be responsible for ensuring that all project components are in place on time, since project success requires proper timing. Marine Resources will select a scientific leader (if needed) and a crew leader to direct the fishing operation. All members of the team except the "scientific leader" will be from the Outer Islands.

## BENEFITS AND JUSTIFICATIONS

### The Number of People Directly or Indirectly Benefiting:

The men working on the project will receive some payment for their efforts, but most benefits will be more indirect. The greatest beneficiaries will be the inhabitants of the outer islands who can be expected to eat more turtle meat in the future as a result of the project, and thus experience an important addition to their daily diets.

### Increased Local Production:

There will be a significant increase in the amount of turtles found in Yap State.

Value Added to the Economy:

Assuming that survival rates have been increased from 1% to 10% and that an adult turtle will produce 200 pounds of meat, a value of $1.50/lb. is assigned this turtle and thus the project will have generated $15,000 per project island for the local economy. This monetary value will only occur if the turtle meat were sold to residents of Yap, but the turtles will also replace imported foods in the diets of the Outer Islanders.

Import Substitution/Exports:

There will be import substitution as more turtle meat becomes available to residents of Yap State.

PROJECT BUDGET

The budget for this project assumes that it will last for three months. Budget Breakdowns are:

| | | |
|---|---|---|
| Student Biologist- Travel and Per Diem | | $1,500 |
| Student Biologist | (100 days x $10/day) | 1,000 |
| Four Team Members | (100 days x $5/day) | 2,000 |
| Boat, Motor and Fuel | (40 days x $50/day) | 2,000 |
| Pen Materials | | 500 |
| Fishing Supplies | | 100 |
| Support Equipment | | 500 |
| Ship Travel & Per Diem | ($164 round trip x 5) | 820 |
| Administrative Costs | (3 days x $32/day) | 96 |
| TOTAL COSTS | | $8,516 |

THE PALADIN GROUP

October 31, 1983

Dr. George Belaz
Honolulu Laboratory
National Marine Fisheries Service
P. O. Box 3830
Honolulu, Hawaii 96812

Dear Dr. Belaz,

I believe that you recently recieved a letter from Roger Pflum indicating that I would be forwarding to you for your review the enclosed paper. I am working for Yap State documenting their economic development projects. This paper on "turtle ranching" is one of those projects. We would like you to look at it to determine if there are any inaccuracies, ommissions, or things that should be deleted. I would also be interested in your opinion as to whether this project will really be that useful to Yap State, or would they merely be raising turtles for harvesting by a lot of islands outside of Yap State. There is no editorial pride on my part, so any changes will be welcomed.

I need your response as soon as is convient for yourself, as Yap is hurrying me to fininsh this project. Unfortunately Roger only just arrived in Yap and thus the entire Marine Resources section is behind schedule because I have had no one in Yap to review or comment on what I have said. In this case, an outside expert was desired. I appreciate your assistance on my behalf and on behalf of Yap State.

Sincerely,

Gregory D. Gordon

Gregory D. Gordon

BOX BV, AGANA, GUAM, (671) 472-8401

**MARINE RESOURCES MANAGEMENT DIVISION**
**P.O. Box 251**
**Yap, FM 96943**
**Federated States of Micronesia**

7 November 1991

Dear George,

Enclosed are the data sheets for turtles tagged with the tags you supplied us. A total of 80 turtles from the Gielop region now have HI. tags. Forty-eight of these also possess SPREP tags. I was at first hesitant to apply different tags on a single turtle for fear of confusing any potential finder. It was later decided that double tagging was most important, despite our using different tags. This situation may have added benefits in that we now have the foundation for a very small scale tag comparison study, as well as it may make any potential finder curious enough to send the tags in.

Tags P-9 to P-122 were applied as suggested. Only tag P-72 can not be accounted for. Adult tags P-123 to P-700 and hatchling tags C-901 to C-999/D-907 to D-999/E-801 to E-900 remain in our possession as well as the five large and one small applicators. Andrew has mentioned your desire for us to hold onto the tags and applicators for our future tagging projects, though I am aware a decision was made at the last turtle conference to use only SPREP tags in the Pacific region. I found your tags much easier to work with compared to the SPREP tags, but understand the importance of standardizing all regional efforts. Please advise.

I'm also enclosing a fax sent 29, Oct. Things have been so hectic around here that I'm getting lost as to what has and has not been done. We still have received no word from Robert Smith.

I look forward to seeing you in December and am thankful for the opportunity. Every day I see how much more I have to learn.

Best Regards,

Steven P. Kolinski

Steven P. Kolinski

1. Dear George, 1-23-92

GOOD NEWS. TURTLE # 789 (TAGGED 5/19/91 on Biolop) was found somewhere in the Marshall Islands. I haven't heard any more than this but I thought you'd like to know.

Hope all is well.

Best Regards,

Steve

# TRADITIONAL MARINE CONSERVATION IN TOKELAU
## Can it be adapted to meet today's situation?

Foua Toloa, Robert Gillett, and Mose Pelasio

Introduction

Tokelau consists of three atolls set on a northwest-southeast axis between 8 and 10 degrees south latitude and 171 and 173 degrees west longitude. Each atoll is made up of a number of reef-bound islets encircling a lagoon. These islets vary in length from 90 metres to 6 kilometres and in width from a few metres to 200 metres. At no point do they rise higher than 5 metres above sea level.

The total land area is 12.2 sq km. Nukunonu, the biggest atoll, is 4.7 sq km. Fakaofo is 4.0 sq km and Atafu 3.5 sq km. The atolls are basically coral rubble and sand mixed with a thin layer of humus. Tokelau has an average mean annual temperature of 28 degrees C and an annual rainfall of 290 cm. The population is approximately 1700 for the three atolls.

Tokelau is highly dependent on its marine resources for protein and livelihood in general. The harvesting of marine resources is one of the most important aspects of the traditional Tokelau lifestyle, and there is a growing amount of literature on the subject. Conservation practices in Tokelau, however, have never been adequately documented.

Until fairly recently each of the three atolls of Tokelau had just one village. This may be one factor responsible for traditional conservation practices having a character somewhat different from other areas of the Pacific Islands. For example, the concept of reef tenure does not exist. This departure from the more typical conservation systems may have caused some researchers to assume that there were no explicit marine conservation strategies in Tokelau. Alternatively, because some of the practices are quite subtle, they may have been overlooked by outside workers.

An understanding of the governing structure in Tokelau is a requisite for a discussion of conservation. Central governing authority in Tokelau is vested in a Council of Elders, comprised of most adult males over the age of sixty years. The Council, about 25 people on each atoll, historically has had total responsibility for the management of marine resources. In recent times, however, this authority has been somewhat eroded.

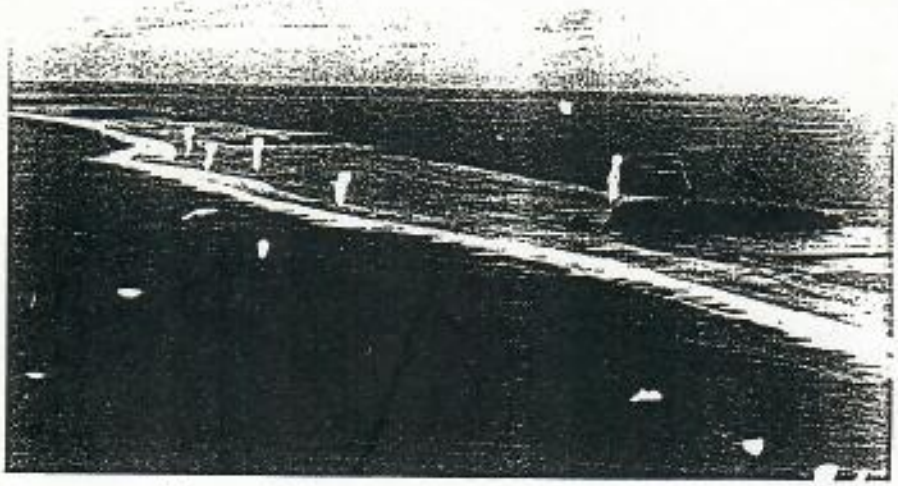
Many of the current conservation issues involve species where there is some degree of concern over the present abundance. Often this involves turtles (Chelonia mydas and

Eretmochelys imbrica) and giant clams (Tridacna squamosa and Tridacna maxima). It is interesting to note that in Tokelau for the purpose of conservation, birds and land crabs are placed in the same category as marine organisms.

## Marine Conservation Measures

In Tokelau traditional marine conservation measures can be thought of as falling into three categories: those that are specifically designed for conservation, those aspects of the Tokelau traditional system which indirectly result in a reduced amount of fishing effort on particular species, and finally the elaborate process of perfection of fishing skills which has the effect of reducing the need for destructive fishing.

Probably the most important explicit conservation measure is the "lafu" system whereby all types of fishing are banned in specific areas of the main reef. An example would be prohibiting activity on the entire windward reef shortly after the bi-annual change in direction of the prevailing wind. The decision to establish a "lafu" is made by the Council of Elders and an attempt is made to define the geographic area is such a way that no family will suffer a disproportionate amount of hardship by the ban.



A "lafu" could close a section of the reef like this to fishing

Although the "lafu" may be established for reasons other than a reduced abundance of a particular species, it is generally agreed that it results in a substantial increase in the availability of fishery resources in that area. At times a "lafu" may be established in anticipation of a future need. To assure that marine foods will be especially

plentiful at an important festival, fishing may be banned from a section of the reef until just prior to the event.

Another specific conservation measure is the rejection of undersized fish when captured alive in most types of fishing. Fishermen believe that the potential benefits of returning the fish to the sea are worth the reduced catch. Scolding by one's father and elders serves to re-inforce this practice.

For conservation purposes, destructive fishing methods are discouraged in the traditional system. The best example of this is the ban on the use of the toxins from beche-de-mer as a fish poison. Although the technique is highly effective in killing fish, it is thought that the use of the poison is detrimental to coral in the vicinity of its use and results in long term negative effects.

In addition to the specific conservation measures above, there are a wide variety of practices in the Tokelau traditional system which result in the conservation of marine resources through restricting the amount of specific fishing effort. Customs associated with turtle fishing illustrate how this can operate. Green turtles are relatively easy to capture when they are copulating in the open ocean, however not everybody is allowed to take turtles in this fashion, only certain highly respected masterfishermen. When somebody is successful in locating a turtle nest with eggs, he is traditionally obliged to capture the nesting turtle. As the exercise may require several nights of uneventful, boring waiting on the nest beach, it is in effect a deterrent to hunting for turtle eggs. Turtles in Tokelau are considered "sacred fish", meaning that a captured turtle must be divided among the entire community. This requirement results in a reduced incentive for an individual to participate in turtle fishing.

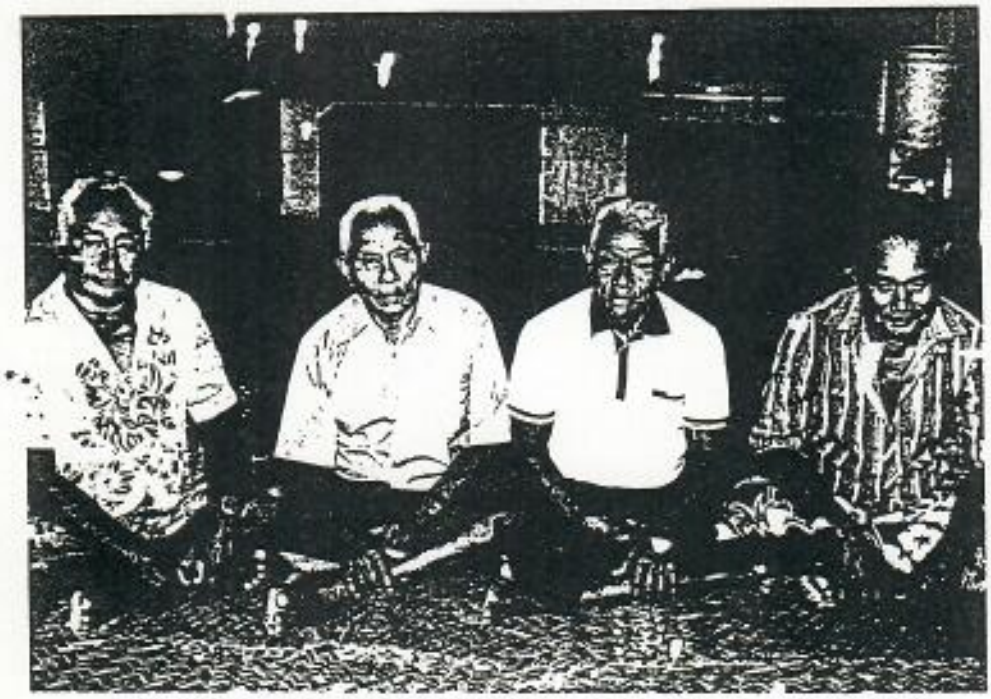
In Tokelau there is the perception that the pelagic fish (tunas and billfish) resources are far greater in magnitude than the reef and lagoon species. There are a number of mechanisms whereby offshore fishing effort is encouraged which, in effect, relieve pressure on the more vulnerable inshore species. The elevated status in the community of a good tuna fisherman serves to influence fishing effort. There is also the opinion that many of the lagoon species should be reserved for harvesting only when weather conditions do not allow journeys into the open sea.

There are examples of attempts at marine conservation in Tokelau which, although they have a doubtful biological basis, demonstrate an intent to manage marine resources for conservation purposes. When giant clams are harvested, there

Traditionally there has been the idea that offshore fishing, such as the skipjack poling shown, reduces pressure on lagoon resources

is a requirement that the string of clam meat must be towed around the reefs where they were collected in order to release eggs from the harvested meat.

Another category of marine conservation is the elaborate process of perfection of fishing skills which has the effect of reducing the need for destructive fishing. The title "tautai" known in many areas of Polynesia, is conferred on those individuals who have spent years or decades under the instruction of an older tautai. This long, intensive training refines the skills used in the capture of hundreds of types of fish. In effect, those individuals who have acquired this knowledge prefer to use the "proper" technique, rather than anything that may work. For example, in octopus fishing, a knowledge of octopus behaviour, the manufacture of an octopus stick and its use, eliminates the need for crushing coral or using fish poisons.



Each of these "Tautai" have studied for years under an older relative

Traditional octopus fishing skills reduce the need for destructive fishing

Modern Problems with the Traditional Conservation System

Recently there have been difficulties with the traditional marine conservation system in Tokelau. Probably the most serious is a general reduction in the authority of the Council of Elders which results in less effective management of marine resources. This diminished power is due to several factors including the introduction of a cash economy lowering respect for the now-salaried elders, venturing by the Council into non-traditional areas such as budgetary processes, having Tokelauans present on the atolls who were raised in New Zealand outside the traditional system, less severe punishment for violators which could consist of a relatively painless cash payment, the presence of an educated elite who can more easily escape the wrath of the system, and the convenient option of escaping the authority of the Elders by departing for New Zealand.

Another difficulty with the traditional conservation system concerns the development of overseas markets. The isolation of Tokelau has until recently resulted in all harvesting of marine resources for exclusively local use. There was no incentive for accumulating surpluses in excess of domestic needs. The improvement in the transportation situation has created the possibility of marketing marine products in Western Samoa. The demand for giant clams has grown tremendously, and is now far greater than what the resource can support, resulting in a marked drop in clam abundance.

The introduction of modern fishing gear has also created conservation problems. The virtual absence of pearl oysters in the lagoons has been attributed to diving goggles, unknown in traditional times. Gill nets and spearguns have

also presented difficulties which the traditional system has yet to resolve.

Introduced fishing gear, even as simple as diving masks, hr
created as yet unresolved problems for traditional managemx .t

With changes to the economic and educational systems there has been a marked deterioration in the level of fishing skills. Fishing effort is becoming more concentrated in the "easy" fisheries while the types of fishing requiring special knowledge or intense physical effort, such as chasing giant maori wrasse or reel fishing, are being practiced much less often. The end result is an excess of fishing effort on certain easy-to-capture fish, such as parrotfish.

Since the deterioration of traditional fishing skills is having a negative impact on marine conservation, there have been attempts to document the knowledge associated with particular fisheries. This has included the tuna, nearshore pelagic, and bottomfisheries in both written and photographic forms. There are plans to continue this work for reef and lagoon species. It is important that aspects of this documentation be introduced into the curriculum of primary and secondary schools. There is some opposition to this concept from those well-intentioned workers who have laboured so hard to introduce an effective western-type educational system to Tokelau. Additionally, there is the perception of the superiority of the western curriculum and that the educated elite might lose some status when having to rely on formally uneducated masterfishermen.

There was an attempt to include instruction by Elders on fishing and marine resources at the primary school level,

but the valued was downplayed by the educated elite and the instruction was transferred out of the primary school system to a less recognized institution which has since become defunct.

## Adapting Traditional Marine Conservation to Modern Realities

The people of Tokelau feel that the traditional conservation system has served them well over the centuries. They are also aware, however, of the need for modification of the system to reflect recent changes.

Some Tokelauans believe that the foremost need with regards to traditional marine management is to restore the authority of the Council of Elders. Although this is an area of great controversy, many educated Tokelauans feel that this could be at least partially accomplished by restricting the Council's activities to those areas of their expertise and delegating responsibility for subjects alien to them, thus preserving the perception of the wisdom of the Elders. Alternatively, another option would be to have a Tokelauan with a substantial background in fisheries biology act as technical adviser to the Council.

It is also believed that the effective management of marine resources by the Elders could be improved by establishing a more effective system of punishment for violators which could deal with both the traditional and introduced aspects of Tokelau life.

Tokelau law is now undergoing major changes. Former defacto legal practices are now being codified (ironically for approval by the parliament of New Zealand). Unfortunately much of this work is being done by individuals without an appreciation of the positive value of traditional marine management. It is important, however, that the authority of the Council of Elders over marine management should not only be recognized, but strengthened in the new code.

It is believed that biological information from stock assessment studies could be used to enhance traditional management. Scientific studies have been carried out in Tokelau on tuna, baitfish, turtles, clams, beche-de-mer, coral, bottomfish, and crabs. Although output from these studies has been utilized to some extent, a mechanism should be established so that the results are more fully incorporated into the Council of Elders' management plans.

The realities of modern life in Tokelau are that most bright young Tokelauans spend a substantial portion of their educational years overseas. Unfortunately, those are the years in which a major portion of traditional knowledge would have formerly been acquired. Recognizing this,

consideration should be given to modifying the age at which traditional education begins.

It is essential that the educated elite be convinced of the positive value of including traditional knowledge instruction within the primary and secondary school curriculum.

The positive value of traditional marine conservation in Tokelau is undisputed by the residents. The future challenge will be to modify the traditional framework to allow flexibility for the realities of modern life and to establish a mechanism for the consideration of results from scientific studies.

The 1700 residents of Tokelau feel that the traditional management system has served them well, but is in need of some changes

**MICRONESIAN MARITIME AUTHORITY**
P.O. BOX D; KOLONIA, PONAPE
EASTERN CAROLINE ISLANDS, 96941

1 August 1985

George Balazs
National Marine Fishery Service
PO Box 3830
Honolulu, Hawaii
96812

Dear George,

Thanks for writing and reminding me of the "lost" tags in the outer islands. Unfortunately I cannot give you any further information as the radio on Satawal is broken down and I have no way to contact them at present. I could write, but a letter wouldn't be answered (I know). The best thing is to wait until the radio is operable and I can talk directly with the people there. Frankly, I don't think any of the tags would have been applied, as without anyone out there to urge them the turtles would most likely end up in the pot. You will recall that my intention was to have them tag only the turtles they didn't use (sometimes at Pikelot they flip over more turtles than the canoes can carry and end up releasing them before departing from the island). This was a shot in the dark, as the man intrusted with the tags doesn't always go on the turtle expeditions. Anyway, I'll see what I can do.

Good to see that you are now on the fast track to civil service retirement...To some, the lack of any "job security" out here (with 2 year contracts and no guarantees) is a disadvantage. However I've always personally looked at Satawal and my house out there as an "ace in the hole".

You probably heard that the Hokulea is back in the S. Pacific or at least attempting to get there. I had a one-day stopover at the end of June on my way to New Zealand and was able to see Piailug before he took off. My mother also sent me a video tape of the Kamehameha Day parade, with him riding in an open car with the "Grand Marshall" (his navigation student). That's a far cry from living on the CHARLES GILBERT and eating saimin 3 times a day like we used to in 1973...

My family is still out on Satawal for the summer; but I have no idea when they will get back as there are no ships scheduled for the time being (so what else is new?).

Adios,

Mike

**MICRONESIAN MARITIME AUTHORITY**
P.O. BOX D; KOLONIA, PONAPE
EASTERN CAROLINE ISLANDS, 96941

March 11, 1983

George Balazs
c/o NMFS
Box 3830
Honolulu, Hawaii 96812

Dear George:

I've been away for about 3½ weeks, and only now have this opportunity to answer some of your questions.

1. The photograph of the ridley was taken by our MMA observer, Mr. Benedict Hallens. It was taken aboard the Japanese research vessel Shoyo Maru in November or December, 1979, between Truk and Kavieng, Papua New Guinea.

2. I was not on Ponape when the leatherback was caught by the Kapinga fishermen. Pahi aki fishing fishing is just like Hawaiian handlining, using chum wrapped around a rock to attract the bait. There are some differences between Hawaiian style and what the Kapinga people do, but I'm not sure what they are. The difference between this kind of handlining (which targets on yellowfin in reef holds off the seaward side of the Ponape fringing reef) and longlining should be fairly clear. Only one hook is used, and only occasionally would a fisherman set a single line with a float attached, then proceed to fish within sight of the first line while handlining a second from his canoe. Japanese hooks are baited with dead sardines, mackerel, saury or squid and of course are set for miles using up to 2,000 hooks per day.

3. I'm not familiar with the leatherback Paula mentions. In 1979 I was working with the MMA and travelling almost constantly, it could have escaped my notice and I will check with Croft on it. It may have also been captured in the outer islands and only reported here.

Thanks for the information you sent along. I'll be here during most of this month, but then gone again during all of April. My family will be going to Kona this summer to stay with my parents, and I hope to get over there for a couple of weeks, depending on the workload here.

Adios,

Mike A. McCoy
Executive Director, MMA

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Fisheries Center Honolulu Laboratory
2570 Dole St. • Honolulu, Hawaii 96822-2396

May 19, 1987 F/SWF2

Mr. Flinn Curren
Pohnpei State Government
Marine Resources Division
P. O. Box B
Kolonia, Pohnpei
Federated States of Micronesia 96941

Dear Flinn,

Many thanks for your recent letter, the tagging data, and draft note for the Marine Turtle Newsletter authored by Clay Edson. I am delighted to receive this important information and certainly commend your people for doing such a fine job. I hope that more turtles can be tagged and protected at Oroluk this year. It will be very exciting when we receive our first long-distance tag recovery from one of these animals. Are there any traditional stories among the people of Pohnpei as to where the turtles go when they are not nesting at Oroluk? I will notify you immediately when a tag recovery is reported to us.

In the tagging list you provided, there were four tags that were not entered among the consecutive numbers. They were 4322, 4328, 4330 and 4334. I assume that these tags were lost or for some reason not applied. Please confirm this point for me so that no confusion develops in coming years. If the tags became bent and unusable, ideally they should be returned to me, thereby eliminating any future problems. Also, I note that you should now have 12 tags (4339 - 4350) on hand. If work at Oroluk will take place again this season, let me know and I'll send you more right away.

I hope that the note for Marine Turtle Newsletter will be submitted for publication in the very near future. Your findings are important and need to be made known to the scientific and conservation community at large. To date, the only information about nesting turtles at Oroluk appears in Peter Pritchard's 1977 booklet "Marine Turtles of Micronesia". A copy of this section has been enclosed in case its not easily available to you. I recommend that Clay Edson reference and discuss parts of this earlier report, especially;

1). The numbers of turtles previously nesting per night as stated by Pritchard;
2). The recommendation that Oroluk be designated a Turtle Sanctuary, and that the few people in residence be relocated in order to properly protect the turtles from being eaten;
3). The statement by Pritchard about a "split" nesting season at Oroluk, and whether or not any evidence was found for such a pattern occurring at the present time.

At this point there is no question in my mind that the Oroluk nesting colony is on the verge of becoming extinct.

As requested, I have enclosed several items that might be useful as educational material about sea turtles for school age children In addition, I have asked Jack Woody to send you a free copy of the slide show "America's Sea Turtles" recently produced by the U.S. Fish and Wildlife Service. I will also be trying to identify funds that can be used to support the Pohnpei/Oroluk turtle project.

Best Regards,

George H. Balazs
Zoologist

GHB:jn
cc : Mike Gawel, FSM Chief of Marine Resources
Jack Woody, FWS Sea Turtle Coordinator

**MICRONESIAN MARITIME AUTHORITY**
P.O. BOX D; KOLONIA, PONAPE
EASTERN CAROLINE ISLANDS, 96941

21 November 1985

Teresa Herring
c/o Dept. of Conservation & Resource Surveillance
Pohnpei State Government
Pohnpei, FSM

Enclosed are 15 slides for the purpose of duplication to be used in educational materials being developed on sea turtle conservation. Slides were taken in and around West Fayu atoll in Yap State and depict the following:

| Slide # | Description |
|---|---|
| 1. | A sailing canoe of the type used to transport live turtles from W. Fayu, Pikelot, Olimarao and other turtle-hunting atolls back to Satawal. Of importance is the size of the canoe, which can hold at maximum five to six mature turtles thus limiting the numbers which can be captured and transported at any one time. There are usually four to five active canoes on Satawal at any one time. Obviously favorable winds are required for transportation of turtles over the distances involved (50-110 miles) and the fact that winds are least predictable during the nesting season limits the numbers that can be captured for local consumption. This is of course not the case with motorized vessels, field trip ships, etc. in other areas. |
| 2. | Turtles on the beach awaiting transportation via canoe from W. Fayu to Satawal. |
| 3. | Measuring round carapace length of a mature female retained after nesting the previous evening and before release after tagging. Calipers are also used for straight-line measurement. |
| 4. | Handling of turtle for measurement noted in slide #3 |
| 5. | Completed "live car" constructed of rebar, wire mesh and cement which with an open bottom (no concrete but covered with mesh) is placed in a protected place in the lagoon to raise hatchlings before release. |
| 6. | A small green turtle raised to maximum size for release (most were released when smaller). |
| 7. | The island at W. Fayu atoll, approx 20 acres in size. |
| 8. | A completed"live car" with protective plastic liner to minimize abrasion of small hatchlings on concrete sides. |
| 9. | A typical nesting beach. Western side of W. Fayu island. There are no shelters or houses built on this side, minimizing lights and potential discouragment to turtles wishing to nest. |

| Slide # | Description |
|---|---|
| 10. | The lagoon at W. Fayu near the island, showing coral heads and shallows which make this a less attractive site for nesting turtles to approach the island (compare with beach shown in slide #9). Also shows smaller canoe from Satawal arriving for fishing trip. This size canoe would not be capable of transporting a turtle over the 50-mile open sea route to Satawal. Also shows an initial chicken-wire impoundment in the lagoon which was used for raising hatchlings and is unsatisfactory. The waves and wind force the turtles against the wire sides and eventually drown them as they become weaker. |
| 11. | A close-up view of the unsatisfactory enclosure noted in slide #11. |
| 12. | Drying turtle eggs for transporation to Satawal via canoe, a common practice before conservation education started. (in all honesty I can't say whether or not the prohibition against taking eggs is still being enforced. |
| 13. | A wire enclosure around a nest. This prohibits hatchlings from escaping when nests cannot be monitored all the time. |
| 14. | Hatchlings in a cut-off drum held temporarily while additional "live cars" were being constructed. |
| 15. | Another view of a live car with hatchlings inside. Food is suspended on wire hooks from the side of the car or minced on the board and dropped into the car. As tide fluctuation is never more than the height of the sides, there is always water at the bottom. |

Most of these slides were taken during the summer of 1972 at W. Fayu. There have been many conflicting reports and recommendations on the advisability of "headstarting" turtles in the manner shown. Subsequent operations limited the numbers for "headstarting" taken from a nest, with a proportion allowed to escape from the nest to the water.

Please return the originals of these slides when you have the duplicates. Thank you.

Mike A. McCoy

21 May '82
Yap

Dear Jeff,

Greetings from Yap! Here I am sitting in the Governor's office reading this newspaper & suddenly my eyes fell on your name. Surprised, I was, and read on...

Anyway, I was excited to read of your travels & exploration aboard the Cromwell.

When I was in Guam May 1 to May 8, I called the Navy Port looking for you & the ship - they said you'd been in already & were, at that time, out to sea. I was disappointed to miss you all.

Remember we had talked of a-

possible hook-up when I was in Honolulu Dec. '81?

Anyway, I had been in contact with Bill Gilmartin & told him that I was going on a Long Field Trip to the Outer Islands of Yap. I am sending along a set of slides (later on) to him of turtles in Gafarut, a turtle island, near Faraulep. Pls. pass this news bit along to him. I'll write him later.

I spent my 1st ocean travels on board the TTPI f.t. ship Micro Spirit. Spent 24 days at sea from Mar 6-27 th. Saw & went ashore on 13 of 14 islands we called at. Was seasick, then got my sealegs, & am now excited to do more ship

June 16, 1982
Yap

Dear Mr. Balazs,

Greeting from Yap! Please forgive me for this long overdue response to your very kind and thoughtful letter of February 24, 1982.

The day after I left for the long field trip your letter arrived here in Yap along with the literature on sea turtles. Unfortunately, I was not able to refer to this material while on the trip but, I have some information, amateur though it may be.

I departed on the M/S Micro Spirit from Yap for the Long Field Trip to the Outer Islands on March 6, 1982. On Tuesday, March 16, 1982, the ship arrived at Gaferut, an uninhabited turtle island. The ship's original purpose in stopping here was to offload 27 Outer Island men to plant coconuts. As the O.I. men prepared to go to shore, 5 crew members (all from those outer islands) went fishing and came back with 11 giant green turtles. The manner in which they loaded them on the ship horrified me. A sling, underneath the turtles, in the ship's small boat, was lifted with the first 5 turtles. They were literally dumped on top of the hatch from about 8 to 9 feet above. Flippers were bent backwards, eyes were poked out, shells were cracked and bleeding. From what I saw and, in my opinion, these men have no compassion for living creatures such as these. I was told by a friend that they see them as food--good meat--nothing else. The second load of 6 turtles were treated the same way. Only, these 6 were dumped on top of the first load. The guys (crew & passengers) would kick them in the face and throat hard to see if they were still alive and kickin'. I felt like crying when I saw this harsh treatment. Of these 11 taken, 1 was male and 10 were female. The male died having an erection--that's the way we discerned its sex.

The females all were butchered alive. The guy, in charge of the galley, (the steward's asst.) cut open the soft underneath of the turtle and removed the covering in one piece. All the females were loaded with eggs. The O.I. men, women, and some of the Yapese passengers went crazy when the eggs were exposed. They started eating them right on the spot -- didn't even cook them. After the shell had been fully gutted, the cook took the meat and the remaining eggs to the kitchen where it was boiled and used as lunch and dinner for the next two weeks. After seeing all this, I did not eat any turtle.

We left Gaferut on March 16 and returned for the 27 men on Tuesday, March 23, 1982. On this return trip, the weather (what turned out to be Typhoon Nelson that hit the Philippines) was very bad so I was not able to go ashore. As was related to me, the men turned some turtles on their back and left them in the sand waiting to be taken. The females were not even given the chance to lay their eggs. 6 crew members plus some of the ship's male passengers loaded over 30 green turtles onto the ship in the same manner as I mentioned earlier in this letter. I counted 30 green turtles-- there were many more than this but it became very difficult to count as they piled up on the hatch and deck. The treatment of them was very harsh, to me, and the more I watched the madder I became. Many of these were used as food for the return trip to Yap and the rest were offloaded at different islands as food supply. From ~~what~~ those I saw butchered, I would guess that more than 50% of this batch taken were female. Also, I would guess that over 250 baby turtles were taken and brought back to Yap. -about the size of a 50¢ piece

I observed the crew running around the ship with binoculars on the "lookout" for turtle in the water when we were underway and when we were anchored in the lagoons. Of 14 atolls and islands we called at, Gaferut was the only place where turtles were seen and taken. Since this was my first trip out there, I was careful not to ask too many questions too soon.

I received the poster and short note you sent and I Thank You very much for them. I had a great time for my first time to ever go on a ship in the open ocean. I'm sure I'll go again and will, for sure, scout out the areas better and try to find out more information for you. I am sincerely happy to do this for you and NMFS because, while I worked there from Oct.'79 to May'80, I was shown so much warmth, kindness and friendliness that I want to try to repay ya'll in some way, small though it may be.

While I was home for Christmas '81 in Texas, a Yapese man netted a leatherback turtle while fishing close to the main channel into Yap. This man said that he and some of his friends had never seen one before. They took pictures of it and then set it free. This is the only time, in 2 years here, that I've heard about this kind of turtle. (It was fairly large, too)

A small Hawksbill shell was recently given to me. When I told the bearer of it that it was illegal to capture or kill this kind, he said "Dari fon" "never mind". I think it's very hard to educate local people about the importance of conservation and preservation of sea turtles. Turtle has always been a major food source for the Outer Islands and one that most folks wouldn't think of giving up or even cutting down on.

The enclosed slides were all taken March 16, 1982 at Gaferut Island. I have not made copies of these slides yet, so could you please make copies for you and send the original slides back to me. There's no hurry on this. Thank you.

I hope that there is some information here that will be helpful to you. I appreciate all the material you sent and your taking the time to correspond with me. And, I really like the poster and have studied it much already.

Please say "Howdy" to Bill Gilmartin and tell him that I think about him and the rest of the crew there at NMFS. There's plenty of turtles and dolphins out here -- Why don't you all make a proposal to come to Micronesia, specifically Yap, and conduct some research? I'd love to help!
And, next time you see Richard Shomura, please tell him this Texan girl is still in Yap and lovin' it.

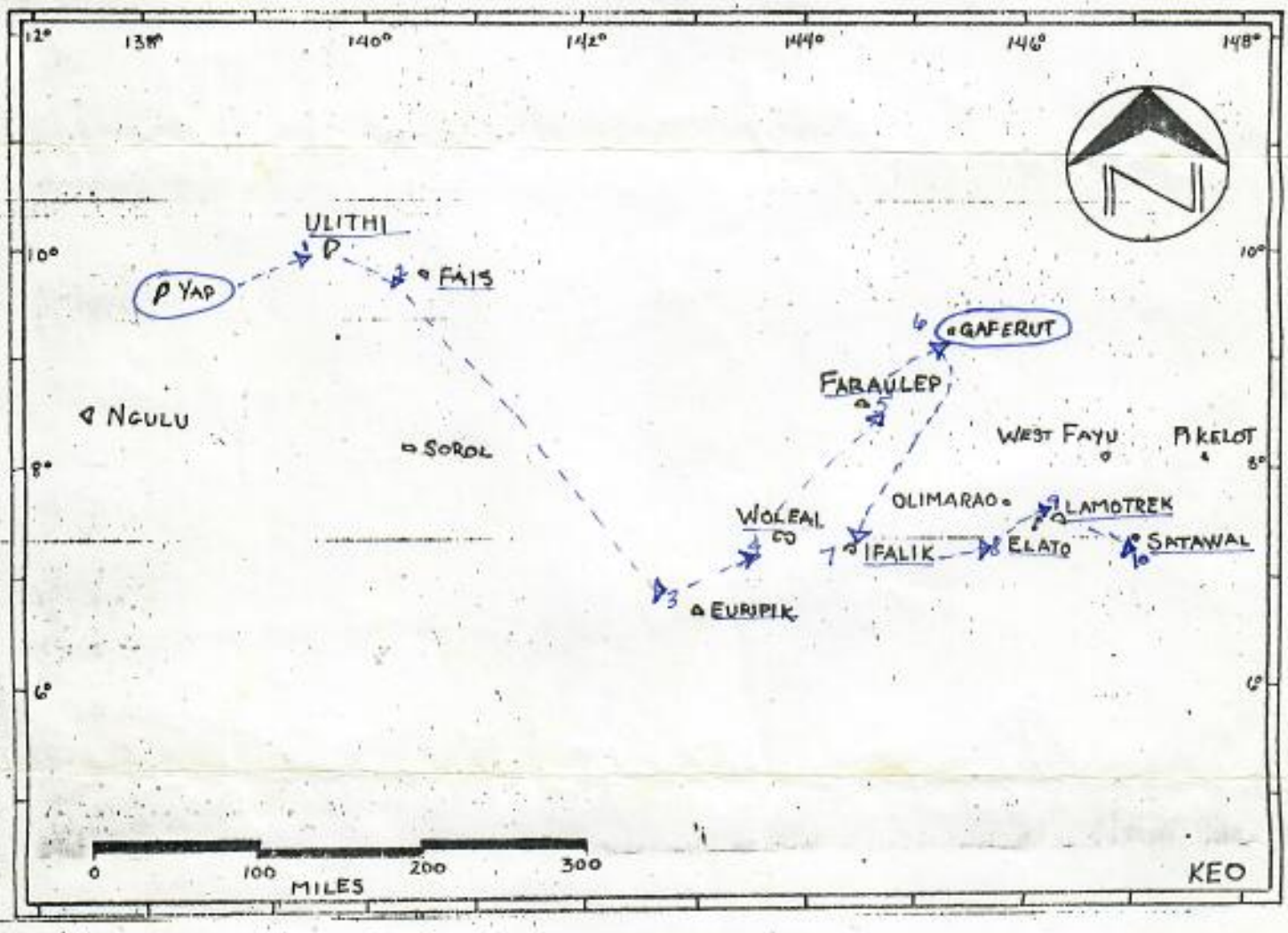
Next time I'm in Honolulu, I'll be sure to come see you.

A warm Aloha from this end of the Pacific,

Suzanne Ellard-Acker

Suzanne Ellard-Acker
Yap, Western Caroline Islands, 96943

Mrs. Suzanne A. Ellard-Acker
P.O. Box 177
Yap, Western Caroline Islands 96943




THE ISLANDS OF YAP STATE
FEDERATED STATES OF MICRONESIA
WESTERN CAROLINE ISLANDS
1982

The island names underlined are those I visited between March 6 - 27, 1982

**MICRONESIAN MARITIME AUTHORITY**
P.O. BOX D; KOLONIA, PONAPE
EASTERN CAROLINE ISLANDS, 96941

November 5, 1982

Mr. George Balazs
c/o National Marine Fisheries Services
P O Box 3830
Honolulu, Hawaii
96812

Dear George,

Thank you for the information sent recently. The IUCN notice on a conservation plan for the "Caroline Islands" is not a great surprise; however I think that they may be targeting on Palau for the time being. I have had several meetings in the past couple of years with a lawyer from the Natural Resources Defense Council form Washington DC, and he has met with officials of the Federated States of Micronesia. But to my knowledge nothing definite has been planned.

The FSM has just hired Mike Gawel to be the Chief of Marine Resources for the national government in Ponape. He and I will be in Honolulu later this month for about 2 weeks; I will be involved in negotiations with the American Tunaboat Association and we should plan on getting together with Mike to discuss the relevant turtle issues. You should know Mike, but in case you don't I can refresh your memory. Mike just completed a year at the East-West Center's Environmental Policy Institute, and was formerly the Environmental Planner for the Trust Territory. When he was going to school at the U of Guam obtaining a Masters degree he spent on W. Fayu working at my turtle hatchery scheme there; that was in 1974. He shares the same concerns I have for marine turtles in the western Pacific, and should be a big help in coordinating work out here. We will be at the Pagoda Hotel from the weekend of the 20th until the first part of December. Please contact us there and we will try and get together.

Sincerely,

Mike A. McCoy
Executive Director, MMA