TRIP REPORT -- REPUBLIC OF PANAMA AND COLOMBIA, S.A.
SEPTEMBER 28 - OCTOBER 4, 1980

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The primary purpose of this trip was to establish contact with foreign government agency biologists regarding technical assistance for conducting sea turtle research in the circum-Caribbean area. The steering committee for the Symposium for Sea Turtle Research in the Western Central Atlantic (SSTRWCA), to be held in San Jose, Costa Rica, in July 1982, had sent out letters of invitation to participate in this symposium to most all of the Caribbean and western Atlantic governments. As technical team leader, I was to meet with government biologists and discuss the goals of the symposium, plans for updating the available data in the 1981 "season," and initiate aerial surveys of the coast and islands in order to characterize extant turtle populations and forage-nesting habitats.

REPUBLIC OF PANAMA

In the Republic of Panama, I met with Mr. Carlos Gonzales Moreno, fishery biologist with the Direccion General de Recursos Marinas (Dr. Carlos Arellano Lennox, Director). Mr. Gonzales was very helpful in describing his activities and current research projects; the culture of oysters and shrimp were of primary interest to him. A new fisheries laboratory and office complex was nearing completion and he would soon be moving out of Panama City in a few months. The new laboratory is located west of the old canal zone and south of La Chorrea on the Pacific coast. It is sited near the commercial fishing docks.

I discussed the SSTRWCA goals with Mr. Gonzales and members of his staff. I also provided them with selected publications and drafts of a manual on sea turtle research methodology and survey techniques and explained the contents. Apparently the only significant activity conducted by the fisheries department with regard to turtles was the collection of fishery statistics. This data consists of annual export figures for weights and values of tortoise shell. Most of the hawksbills that provided this product were captured on the Caribbean coast in the vicinity of Bocas del Toro. The fisheries department has a small field laboratory facility at Bocas del Toro. Main research interest is directed toward spiny lobster studies and oyster culture. The latter study is restricted to the suspended culture method and not reef or benthic culture of oysters.

In addition to this research activity on the Caribbean coast, Mr. Gonzales mentioned a proposed contract his department is negotiating with Japan. This contract is for a oceanographic survey of the coastal area (Atlantic side) by a Japanese research vessel. Apparently the Japanese would prefer to spend more survey time on exploratory fishing, i.e. for potential marketable marine resources, but Panama needs and wants hydrological and bathmetric information, including bottom type characterization. The contract is to be let later this year for a two-year survey.

At the end of our discussions, Mr. Gonzales stated that a decision had been made to assign one of his staff biologists, Dalva Arosemena, to the new sea turtle project and that the Bocas del Toro Laboratory would be made available for sea turtle research. It was agreed that the technical team of SSTRWCA could provide additional training, and possibly some resources to initiate coastal-beach surveys for 1981. Furthermore, it was recommended

that other sea turtle investigations conducted by government agencies in Panama be closely coordinated. It was understood that official participation in SSTRWCA by Panama is still pending, but these preliminary preparations are necessary if a field survey is to be implemented early next year.

In closing, I suggested that Mr. Gonzales attend our open meeting in San Jose, Costa Rica on November 15. He could not attend, but suggested that Dalva Arosemena remain after the 33rd Annual Gulf and Caribbean Fisheries Institute meeting in San Jose where she will be attending a spiny lobster workshop. However, she may require expense money to do so. I said I would see if we could provide it. I also met another staff member by the name of Gustavo Justine. He mentioned that he had some previous experience with raising hatchling sea turtles on the Pacific coast, but did not elaborate on it. He may be available to assist Dalva Arosemena on the sea turtle project. Despite their inexperience in survey investigations, the staff of this department appeared eager to start work and I was encouraged by Mr. Gonzales' decision to identify a staff biologist in anticipation of Panama's future involvement in the SSTRWCA.

The following day, in Panama City, I met with a local biologist employed by the Smithsonian Tropical Research Institute (STRI) in Balboa. Her name is Argelis Ruiz, and she had just returned from Tortuguero, Costa Rica, where she had participated in last summers green sea turtle tagging effort. She was giving a lecture-slide talk that night on her experiences at Tortuguero and preliminary results of the 1980 season tagging effort. She was very enthusiastic over the prospects of being involved in sea turtle research in her own country. She knows Dalva Arosemena and was a classmate of Gustavo Justine. In the past, she has been invaluable to the Western Atlantic Survey group (WAS) under contract to the NMFS. She has assisted this field team to get established at Bocas del Toro and to conduct surveys of the Chiriqui Beach area. The potential for augmenting the fisheries department staff with experienced personnel from other organizations within Panama is feasible and would seem to be the logical thing to do. Panama's coastline is long, and accessibility is difficult for much of its length. By partitioning off geographical coastal units among several workers, more frequent and thorough coverage would be possible.

Because of an error in my Avianca flight schedule to Cartagena, Colombia, I had to change my itinerary and depart earlier than planned. Therefore, I was not able to meet with other persons affiliated with organizations in Panama that have an interest in or jurisdictional responsibilities over sea turtles. One person who has written reports on the status of sea turtle populations in Panama is Mr. Dario Tovar, Director, Instituto Nacional de Recursos Naturales Renovables (RENARE). An assistant of Mr. Tovar is Mrs. Yariella Hidalgo, Jefe, Silvestre Parques Nacionales, RENARE. Another person I failed to visit who might have an interest or some knowledge of the sea turtles in Panama is Dr. Michael Robinson, Acting Director of STRI and Argelis Ruiz's employer.

To reiterate, Panama is a very important sea turtle producing country. Green sea turtles that nest in Tortuguero, Costa Rica, are frequently recaptured while foraging or migrating through in Panamanian waters. The hawksbill is common to Caribbean coast where it forages on the reefs and nests on mainland beaches. And just recently, a large nesting assemblage of leatherbacks was discovered on the beaches of the Chirriqui. Becuase of the

widespread occurrence of sea turtles and the remoteness of many of the beach and island habitats, it would appear necessary to enlist as many human resources as feasible and coordinate their activities in order to survey such a large and remote area as Panama's Caribbean coast.

CARTAGENA, COLOMBIA

The flight from Panama was scheduled to arrive in Cartagena in the early afternoon. Late departure and unusual detention and search procedures by Colombian narcotics officers after having cleared customs in Cartagena, precluded any opportunity I might have had meeting with our IOCARIBE representative. After attempting, unsuccessfully, to telephone Capt. Rafael Steer, Director, Centro de Investigaciones Oceanograficas e Hidrograficas, Armada Nacional, (CIOH) at Esquela Naval Colombia, in Barrio Bosque, I engaged a taxicab to take me there. Capt. Steer was most helpful in directing me to the appropriate individuals and organizations in Cartagena and providing me contacts for other cities in Colombia. Although he was identified as the official Colombian representative to initiate a response with regard to participation in the SSTRWCA, he preferred to delegate this role to more biologically oriented organizations. He furnished me with a list of the names, and addresses, of individuals he had sent copies of the IOCARIBE-SSTRWCA letter to foreign government officals requesting their participation in the symposium. Some of these people resided in Cartagena. Capt. Steer guided me through the Oceanographic Laboratory at the Naval Academy and introduced me to his scientific staff, most of whom were either physical scientists or invertebrate zoologists. However, one of the scientists knew of a local biologist who worked at the green sea turtle rookery at Tortuguero, Costa Rica, during the 1979 nesting season. His name is Fernando Duque Tobon. They believe he now works for a consulting company in Cartagena. He is not to be confused with Dr. Fernando Duque G. of the government fisheries lab at Bocagrande, Cartagena, who I met later.

Although Capt. Steer will not be directly involved in the SSTRWCA, he might be of further assistance to the 1981 field survey effort by helping to provide transportation to the remote, uninhabited Colombian islands and cays in the vicinity of San Andres and Isla de Providencia off the Nicaraguan coast. It is my understanding the Colombian Navy routinely patrols this area and supplies small military garrisons that are sited on some of the islands. This subject was not discussed and may be too difficult to arrange. However, it might be worthwhile for the national representative to investigate the matter. The U.S. Navy assisted in Operation Green Turtle, an ONR supported effort to re-introduce sea turtles throughout the Caribbean area. More recently, the Venezuelan Navy has provided transportation for biologists tagging sea turtles at Aves Island in the eastern Caribbean. The navy even constructed a research-surveilance platform at Aves Island for the scientists and military personnel in order to protect the nesting turtles from Antillean poachers.

Before departing the Naval Academy, Capt. Steer requested that I mention to the appropriate persons or institutions in the U.S. his need for a technician-scientist in his oceanographic program. This position specifically requires that the incumbent be qualified to not only operate remote STD,

current meters, and other related sampling gear, but calibrate and, within certain limits, repair this equipment. I passed on this request to Mr. James Higman, Rosenstiel School of Marine and Atmospheric Science, Miami, Florida. He said he would bring this matter to the attention of the Miami based group currently conducting a hydrographic survey of Cartagena Bay and who would be traveling to Colombia shortly.

After receiving directions from Capt. Steer, I proceeded to the government fisheries laboratory at Bocagrande. There I met with Dr. Adolfo Baron Porras, Director, Centro Investigaciones Pesqueras and Dr. Bertha de Monsalve, Coordinator, Investigacion Basica, both of the Instituto de Desarrollo de los Recursos Naturales Renovables (INDERENA). By way of introduction, and with the permission of Capt. Steer, I gave a copy of the letter Capt. Steer had sent to their central office in Bogota addressed to Sergio Duran, Gerente Gral., INDERENA and Gabriel Acevedo, Sub-Gerente de Pesca, INDERENA. After briefing Drs. Baron and de Monsalve on the goals the SSTRWCA and the opportunity for someone to attend the forthcoming open meeting in San Jose, they expressed concern over possible problems the central office might have in identifying a national representative on such short notice, and in implementing a research effort. In response to their questions concerning explicit information on what is required of participating countries, I suggested they send a representative from their office to San Jose next month to brief their national representative, if and when he is appointed. This action would shorten the time necessary to implement the 1981 field survey. They were receptive to this idea and introduced me to Dr. Fernanco Duque G., Jefe, Parque Nacional Natural Corales del Rosario (PNNCR INDERENA). Dr. Duque was very enthusiastic about participating in such a program. He is considered one of his countries' outstanding marine biologists. He had recently completed an investigation of the queen conch in the Archipielago de San Bernardo. He is very familiar with the ecology of these coastal island groups and the distribution of turtle grass flats (Thalassia) surrounding them. This marine habitat is jointly shared by foraging populations of the green sea turtle and hawksbill. With his background knowledge, Dr. Duque could be of great assistance to any sea turtle habitat survey. Dr. Baron did not have funds to send a representative to the San Jose meeting, however; I proposed that if INDERENA could not send Dr. Duque to the open meeting, I would recommend the Secretary of IOCARIBE provide the necessary funding.

Dr. Duque then suggested that we survey the neighboring islands, of which Islas del Rosario is now a national park, by small boat. I told him I would rather cover a larger area by aircraft. He first attempted to arrange a flight with a patron of the national park, but this plane was inoperative (electronics problem). I suggested we charter an aircraft and that I would pay for. I told Dr. Duque that I wanted to see as much of the coastline as possible (within the fuel capacity limits), and that he and his assistant, Katy Dunlop, Peace Corps., should accompany me as observers. This would be a "training" flight as well as our initial survey effort for the Colombian coast.

On Friday, October 3, at 0700, we departed Cartagena International Airport aboard a Piper "Warrior" (single-engine, four-place) aircraft. We flew at 100-125' and 110 kts, except when pilot was asked to bank-turn for closer inspection of beach at slower speeds. We flew north ca. 30 nautical

miles along the beach to Punta de la Garita where we turned around and proceded south ca. 80 nautical miles to Punta San Bernardo, and then back to Cartagena. In addition we flew over two island groups or Archipielagos south of Cartagena, Islas del Rosario and Isla Tintipan (Archipielagos de San Bernardo). No turtles were observed during the overwater flights, nor was any nesting activity (tracks) observed along the sections of "suitable" nesting beach. Over 100 photographs (135 mm, color) were taken, a flight log was maintained of all observations (fishing activity, beach description, shoreline type, etc.), and a debriefing session was held as soon as we returned to the lab. This material is on file at the NMFS, Panama City Laboratory.

Although the nesting season for the loggerhead and leatherback sea turtles was over, it was surprising we did not observe any hawksbill tracks. However, their numbers have greatly dimished and their tracks/nests are sometimes difficult to locate by air. The known nesting beaches for loggerheads has been reported for Playa Buritaca, east of Santa Marta, and for leatherbacks it is in the Golfo de Uruba region adjacent the Panamian Choco. The WAS 1980 report to the NMFS gives a brief description of the current status of our knowledge of sea turtles and sea turtle research activities in Colombia. In addition, through Capt. Steer and Dr. Duque, I was able to get the names of other persons and organizations engaged in regional sea turtle activities or related marine investigations. Juan A. Montoya, Director, Centro de Investigaciones Marinas de Uraba (CIMUR), Medellin, is conducted research on sea turtles at a field station in Turbo, Golfo de Uraba. Jose Lozano, Director, Instituto Nacional de Investigaciones Marinas (INVEMAR) is located at Santa Marta (near Playa Buritaca). And last, Dr. Carlos Rubio, Decano Facultad Biologia Marina, Univ. Jorge Tadeo Lozano, is located in Cartagena. I tried repeatedly to contact Dr. Rubio at the university, but was unsuccessful.

The Colombian connection is very important to the SSTRWCA. Although not a famous producer of sea turtles, the coastal environment does provide an excellent forage ground for the green sea turtle. Recapture data from Tortuguero, Costa Rica tagged females revels that the Colombian coastal area second only to those of Nicaragua in importance as forage habitat for this species. Also, large numbers of hawksbills are known to have recently occurred on Colombian reefs as far north as Isla de Providencia and Serrana Bank. How large or extensive the newly discovered leatherback breeding ground in Golfo de Uraba remains to be determined.

From our initial survey north and south of the large seaport of Cartagena, the spread of coastal human populations is dramatic. Artisinal fishing activities involving netting, hook and line, spearing and hand collecting was observed to be widespread. In the island groups, canoe fishermen no longer worked independently and in restricted areas, but were accompanied by larger, motorized mother ships. A highway was under construction from Cartagena to Barranquilla. In places, it was sited very close to the small and best stretch of high energy beach we observed along the 80 nautical miles we flew over. Development of area adjacent to the highway is only a matter of time. The various types of impacts on the remaining sea turtle populations by the expanding artisinal fisheries and coastal development in Colombia can be identified during the 1981 survey effort.

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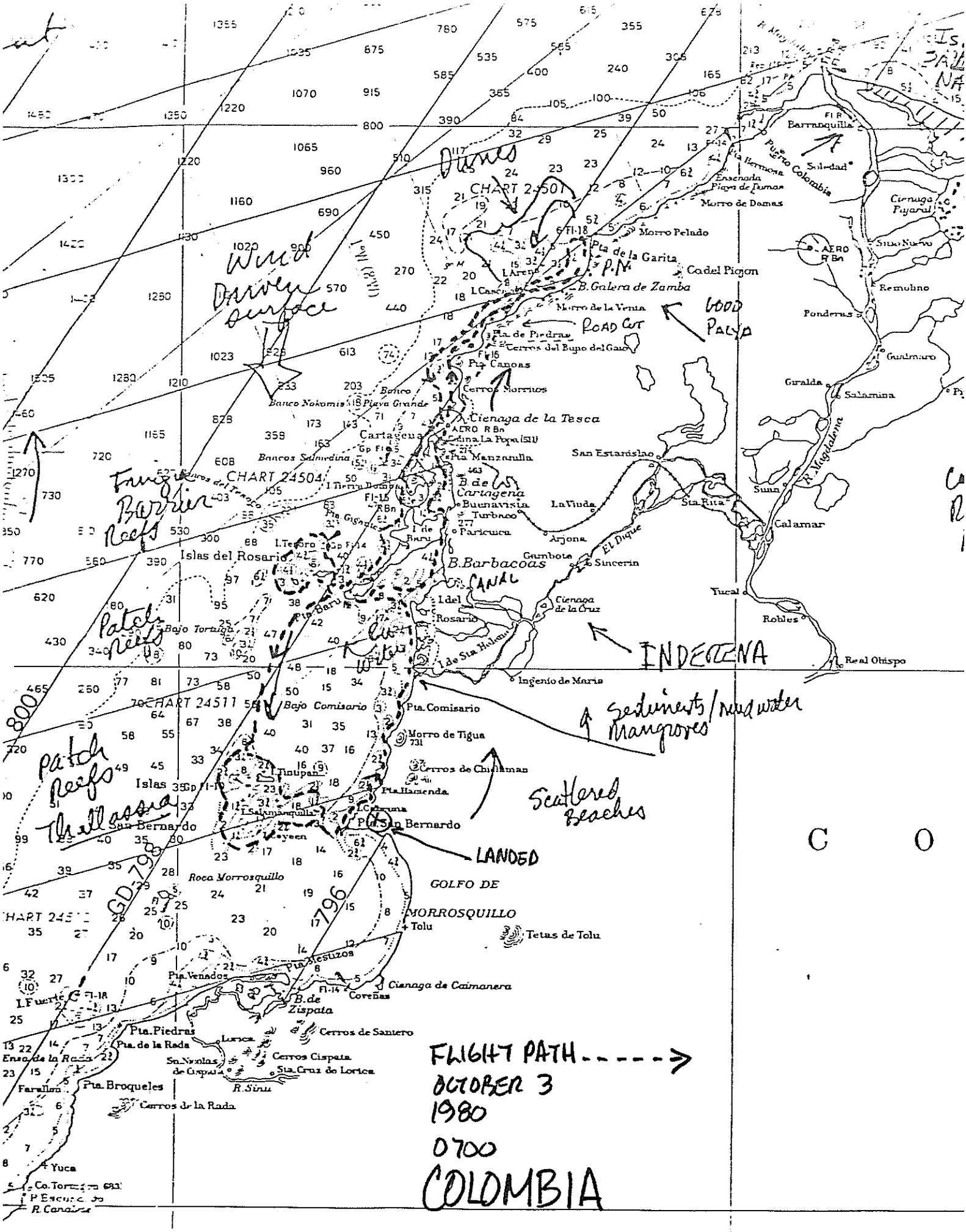
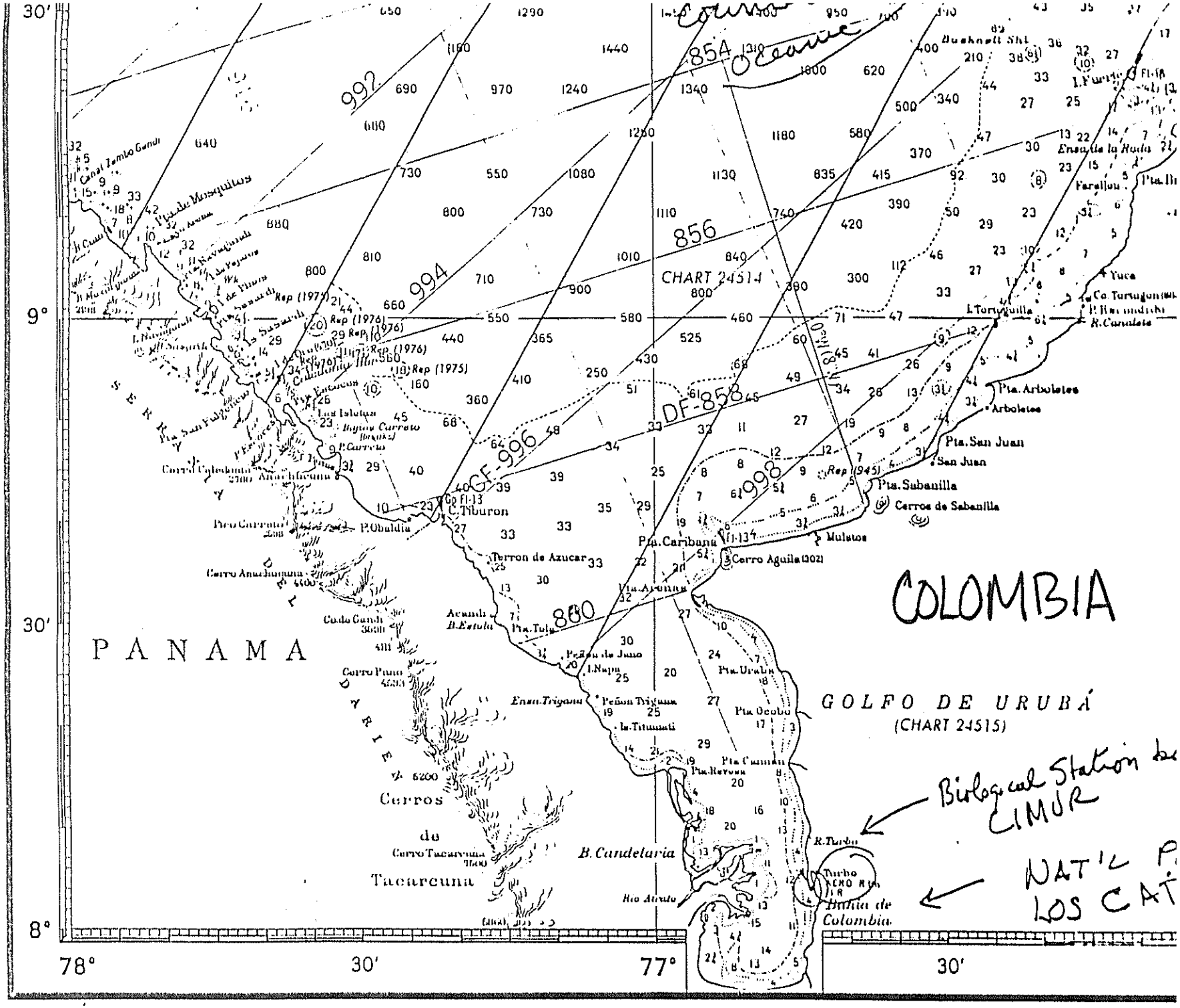


Dunes
CHART 24501
Wind Driven surface
Fringe Barrier Reefs
CHART 24504
Patch Reefs
CHART 24511
Patch Reefs
Thallassia
GD-798
796
800
Barranquilla
Puerto Colombia
Soledad
Ensenada Playa de Damas
Morro de Damas
Morro Pelado
Pta de la Garita
P.N.
Co del Piojon
B. Galera de Zamba
Morro de la Venta
ROAD CUT
GOOD PALYA
Pta de Piedras
Cerros del Buno del Gato
Pta Canoas
Cerros Morritos
Banco Nokomis
Banco Playa Grande
Cienaga de la Tesca
Cartagena
Bancos Salmedina
Pta Manzanilla
B. de Cartagena
Buenavista
Turbaco
Paricuica
Islas del Rosario
B. Barbacoas
CANAL
I. del Rosario
Pta Baru
Bajo Tortuga
Bajo Comisario
Pta. Comisario
Morro de Tigua
Cerros de Chiclaman
Pta Hacienda
Pta San Bernardo
Islas San Bernardo
Roca Morrosquillo
GOLFO DE MORROSQUILLO
Tolu
Tetas de Tolu
Pta Mestizos
Pta Venados
Cienaga de Caimanera
Coveñas
B. de Zispata
Cerros de Santero
Pta. Piedras
Pta. de la Rada
Lorica
Cerros Cispata
Sta Cruz de Lorica
R. Sinu
Pta. Broqueles
Cerros de la Rada
Farallon
Yuca
Co. Tortuga
P. Escondido
R. Canales
San Estanislao
La Viuda
Arjona
Gambote
Sincerin
El Dique
Sta Rita
Calamar
Suan
R. Magdalena
Yucal
Robles
Real Obispo
Ingenio de Maria
Cienaga de la Cruz
INDERENA
Sediments/mud water Mangroves
Scattered Beaches
LANDED
Ponderas
Remolino
Gualmaro
Giralda
Salamina
Cienaga Pajaral
Sitio Nuevo
C O
FLIGHT PATH - - - - ->
OCTOBER 3
1980
0700
COLOMBIA



Biological Station be
CIMUR

NAT'L P
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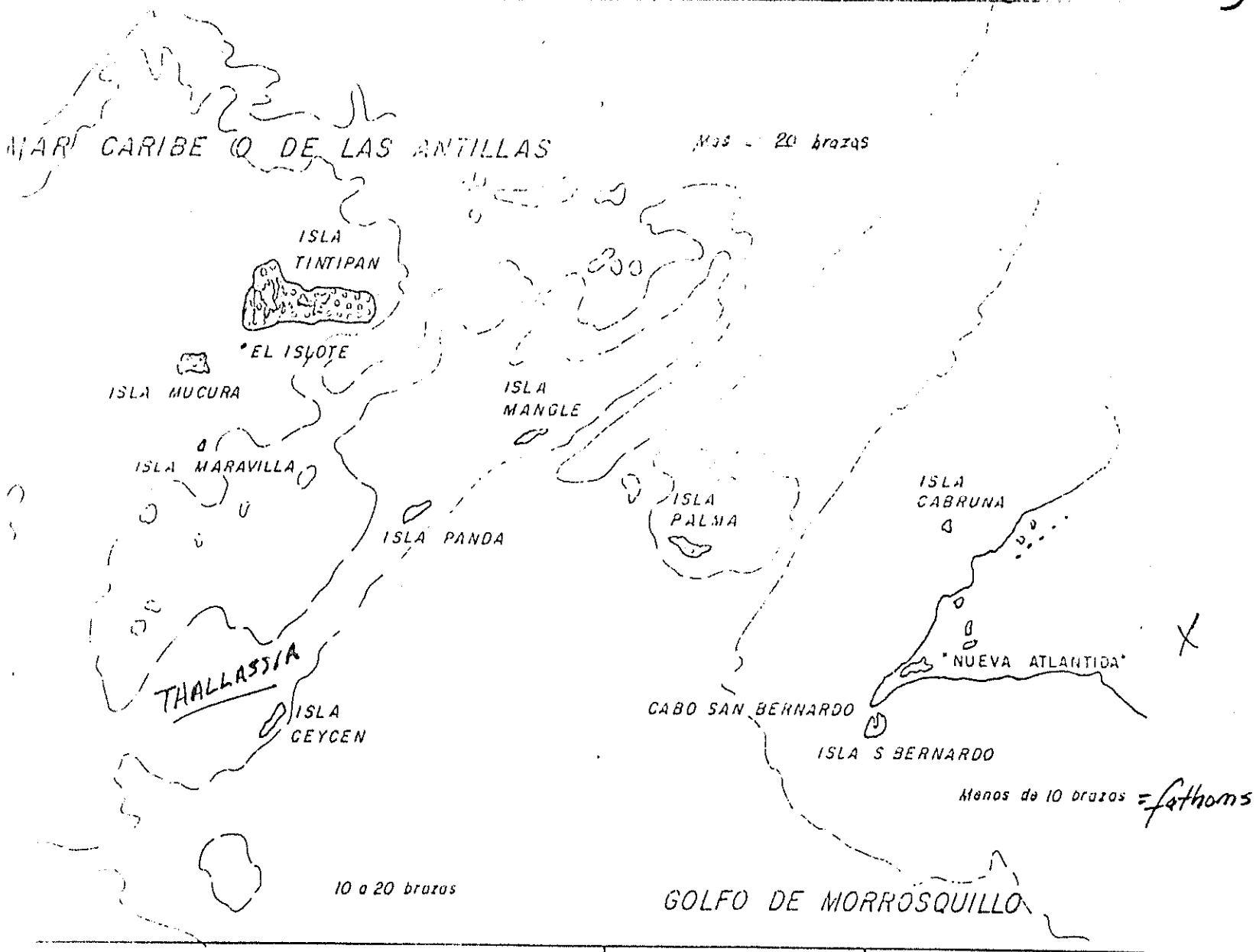
SC

COLOMBIA

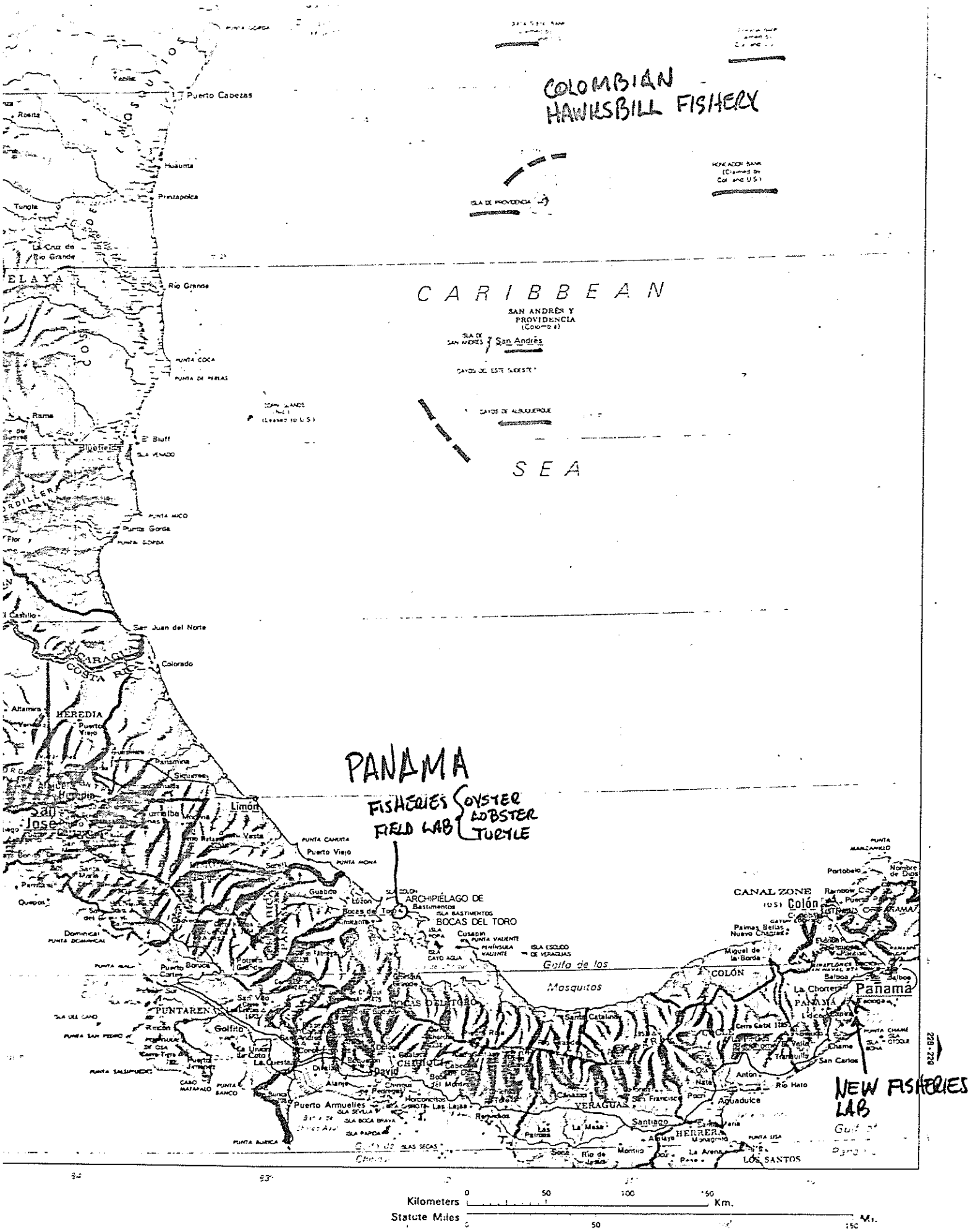
EXTENSIVE AREA OF THALASSIA. TAGGED GREEN TURTLES RECAPTURED HERE, OR IN THIS GENERAL AREA
ONCE SITE OF EXTENSIVE CONCH FISHERY GROUNDS (NOW DEPLETED)



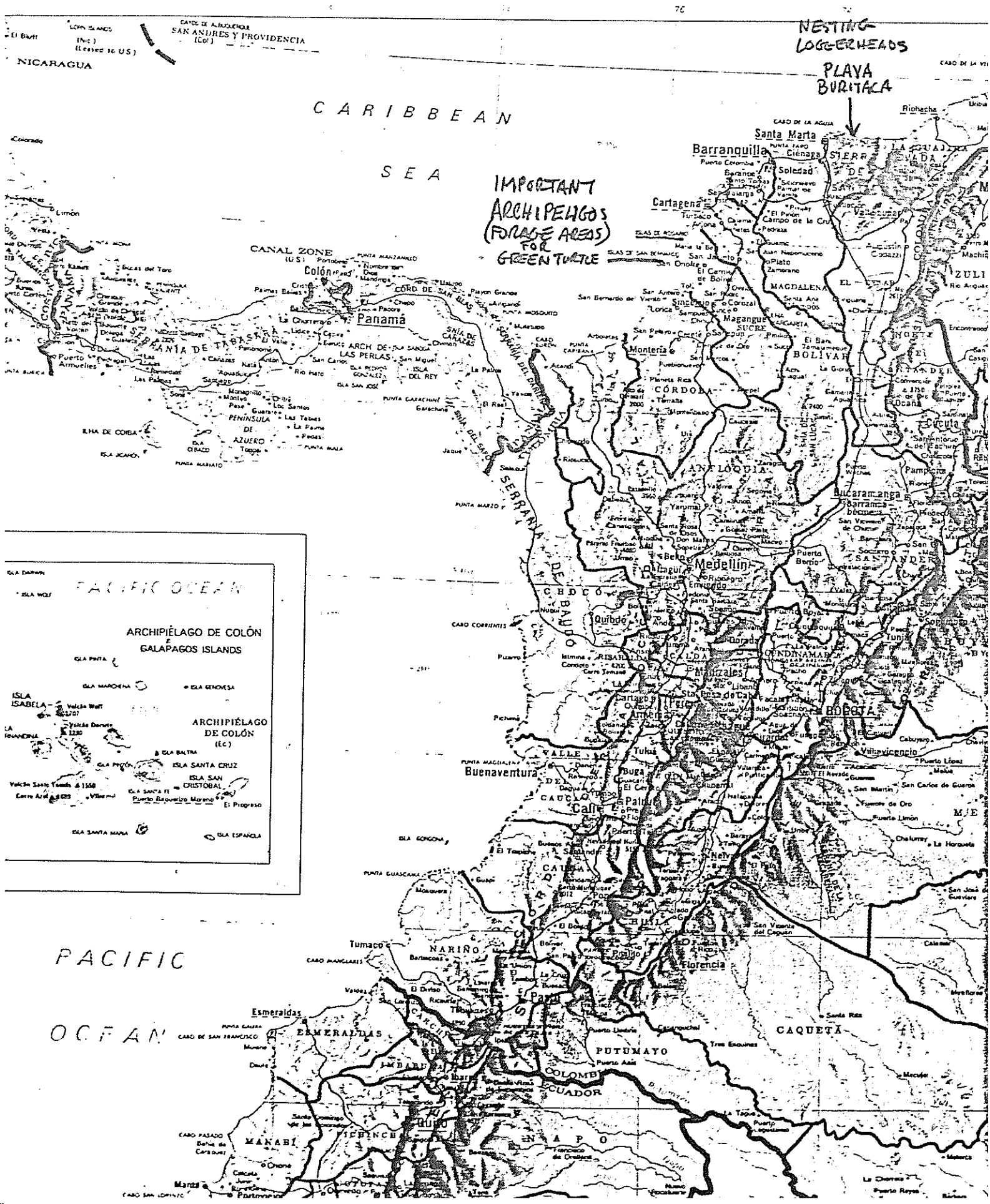
X Road from upland / highland to here.

also Pilot/capitán Fernando Bocanegra M. has (2) cousins aquí !!

ARCHIPIELAGO de SAN BERNARDO	ESCALA (1 80 000) Red. FECHA: Agosto / 78	FUENTE: Navigation Charts For the N. Coas of S America U.S.N.


COLOMBIAN HAWKSBILL FISHERY
CARIBBEAN
SEA
SAN ANDRÉS Y PROVIDENCIA
San Andrés
PANAMA
FISHERIES FIELD LAB
OYSTER
LOBSTER
TURTLE
NEW FISHERIES LAB
Puerto Cabezas
Prinzapolca
Rio Grande
Bluefields
San Juan del Norte
Colorado
NICARAGUA
COSTA RICA
HEREDIA
San Jose
Limón
Puerto Viejo
ARCHIPIÉLAGO DE BOCAS DEL TORO
Golfo de los Mosquitos
CANAL ZONE
Colón
COLÓN
Panama
PUNTARENAS
Golfito
David
Puerto Armuelles
VERAGUAS
Santiago
HERRERA
LOS SANTOS
Kilometers
Statute Miles
One centimeter represents 30 kilometers
One inch represents approximately 17 miles

Colombia, Ecuador, Venezuela and Guyana / Kolumbien, Ecuador, Venezuela und Guayana
Colombia, Ecuador, Venezuela y Guyana / Colombie, Équateur, Venezuela et Guyane



TOTAL TORTOISE SHELL PRODUCTION BY PANAMA

(SHELL)

EXPORTACION TOTAL REGISTRADA DE CAREY AÑOS 1964 - 1977

(GROSS WEIGHT IN KILOS) (NET WT) VALUE

AÑO	PESO BRUTO EN KILOS	PESO NETO	PESO BRUTO EN LIBRAS	VALOR F.O.B. EN BALBOAS	* Nª DE TORTUGAS CAPTURADAS
1964	7,913	6,612	17,408.6	67,350	4,352
1965	7,475	5,980	16,445	68,981	4,111
1966	5,442	4,514	11,972.4	53,228	2,993
1967	3,150	2,986	6,445	38,991	1,732
1968	5,137	4,765	11,301.4	60,656	2,825
1969	5,652	5,535	12,434.4	77,139	3,108
1970	8,239	8,122	18,125.6	133.767	4,531
1971	5,993	5,883	13,184.6	115,451	3,296
1972	12,289	9,609	27,035.8	257,074	6,758
1973	13,999	10,872	30,797.8	611,012	7,699
1974	8,894	6,749	19,566.8	252,670	4,891
1975	9,238	7,130	20,323.6	239,880	5,080
1976	7,809	6,063	17,179.8	327,100	4,294
1977	3985	3482	9,767	156,975	2,192
1978	2403 (9 months only)		5,286.6		1,322 (x2= 2,644) *

ONLY 1/2 SEASON RECORD

* Nª. de Tortugas capturadas asumiendo que de cada tortuga se extraen 4 libras de carey.