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1980 Sea Turtle

Project

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North Carolina
Wildlife
Resources Commission

Archdale Building, 512 N. Salisbury Street, Raleigh, North Carolina 27611, 919-733-3391

February 8, 1980

MEMO TO: Participants, Sea Turtle Workshop of January 10, 1980

FROM: Frank B. Barick FBB

SUBJECT: Workshop Report

We are pleased to transmit herewith a report of the workshop on sea turtles conducted at the UNC Marine Science Laboratory at Morehead City on January 10, 1980.

At this time we are still uncertain as to the extent of aerial surveillance to be conducted by the Commission during the summer of 1980 because we still do not know how much money will be available. We are, nevertheless, hoping that we will be able to extend surveillance to the South Carolina line. We are also hopeful that our efforts might be a little better coordinated next summer.

Please know that your active participation in these efforts on behalf of sea turtles, and the workshop, are much appreciated. We look forward to continuing to work with you on this project.

FBB/dlp

Enclosure

cc: Members, Endangered Species Advisory Committee
Members, Endangered Species Interagency Task Force

MEETING: Sea Turtle Workshop

PLACE: UNC Institute of Marine Sciences, Morehead City, N. C.

DATE: January 10, 1980

TIME: 9:00 P.M. - 3:30 P.M.

ATTENDANTS: Frank Barick, Wildlife Resources Commission
Phil Brueck, National Park Service
T. Stuart Critcher, Wildlife Resources Commission
Carl H. Davis, Jr., National Park Service
Otto Florschutz, Jr., U. S. Fish & Wildlife Service
James H. Hall, N. C. Marine Fisheries
Rebecca Harriet, National Park Service
Riley Hoggard, National Park Service
Charles Johnson, Office of Marine Affairs
Mike Marshall, N. C. Marine Fisheries
Nora Murdock, U. S. Fish & Wildlife Service
Hugh Passingham, Marine Corps Base, Camp Lejeune
Lance Peacock, Natural Heritage
Charles Peterson, Marine Corps Base, Camp Lejeune
Dianne Poole, Wildlife Resources Commission
Skip Prange, National Park Service
John Reintjes, National Marine Fisheries
Jerry Rich, Wildlife Resources Commission
Preston D. Riddel, National Park Service
Frank Schwartz, Institute of Marine Sciences
C. H. Shelton, N. C. Marine Fisheries
Jim Tyler, N. C. Marine Fisheries
Bruce Weber, National Park Service
Tom Wells, N. C. State Parks & Recreation Div.
Julian Wooten, Marine Corps Base, Camp Lejeune

Frank Barick opened the meeting with a welcome to participants and stated the purpose of this workshop was to review work done on the loggerhead sea turtle during the past year with the idea of improving coordination and uniformity of data collection.

Jerry Rich reported on the aerial surveillance flights he made about three times per week from the end of May through August. He flew the Wildlife Commission's fixed wing plane, clustering the flights somewhat more frequently during periods of full moon. The season involved 225-250 hours of flying time. Mr. Rich would fly from Morehead City up the North Carolina coast to the Virginia line at a height of about 300' above the beach and would return about 1 to 4 miles off the coast over the continental shelf.

In inlet areas where the fresh and salt water meet he spotted turtles on the salt water side. They seemed to like the inlets. When the weather was favorable Mr. Rich could spot 100+ turtles swimming per day. He cited instances of mating.

According to his observations the turtles did not seem to be in groups or follow any certain pattern. At times he sighted them swimming in the same area as sharks and rays with no sign of disharmony. Unless the turtles were mating they would dive when they heard the engine of the plane.

Sightings began to diminish in August with 35 or less being spotted per day. In June Mr. Rich sighted as many as 13 crawls in one day. The crawls were not always uniform. Many false crawls were U and V-shaped and some zig zagged and looped around for a few hundred feet on the beach. There were few crawls sighted after a thunder storm. Several crawls were observed on Shakelford Banks. Most nests could be spotted from the air when the flight was low. No turtles were ever observed on the beach during the day time except dead ones. Mr. Rich said that commercial fishermen were reported to kill sea turtles to protect their nets.

Ground truthing was very difficult at Cape Lookout because of the absence of any distinguishable landmarks. Ground truthing was done by Wildlife Commission and National Park Service personnel.

He observed two leatherbacks around Nags Head. When there is a northeast wind no turtles are spotted offshore.

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Riley Hoggard reported that at Cape Hatteras and Ocracoke, with the exception of Pea Island National Wildlife Refuge, 18 crawls were observed and 11 nests recorded between June 7 and August 7. Aerial observation was done by the Wildlife Commission pilot with ground truthing done by Cape Hatteras personnel. Two nests were transfered to Pea Island (173 eggs combined) from hazardous areas. To date there is no information on hatching success of those nests.

*

Riley Hoggard reported that Cape Lookout has completed its third year of participation in the turtle work with expansion each year. Dr. D. L. Stoneburner from the National Park Service Cooperative Research Branch out of Athens, Georgia set this program up and directs it. The purpose is to first supply the necessary information concerning the natural history of the turtle and second to collect year-to-year census within Cape Lookout boundaries.

Surveillance for Cape Lookout ran from June 15 through August 27 for the 6½-mile portion of Core Banks. This area was the subject of nightly patrols by three-wheel beach vehicles at 50 minute intervals. Red lenses were placed over the head lights. The helicopter used for daytime aerial surveillance would land when crawls were spotted and turtle tracks were erased. There was a total of 35 flights made with 90 false crawls. There was a total of 162 observations of nests and false crawls as a result of aerial and ground surveillance. Out of these there were 72 confirmed nests averaging 1.24 nests per mile. Beach width ranged from extremely narrow to wide. The first crawl was spotted in early May with sightings of turtles in the water into December. Researchers tagged 15 turtles but no tagged turtles from previous years were spotted. Mr. Hoggard feels that 90% of the crawls were found.

Hurricane David made quite an impact on the beach. There was no indication of raccoon predation on Cape Lookout to eggs. Predation by ghost crabs occurs when hatchlings go toward the ocean.

*

Tom Wells reported that ground surveillance of Hammocks Beach began in June and went through August 5 with a total of 85 crawls producing 57 nests. This work was done by researchers on foot and four-wheel drive vehicle. There was a total

of 11 more crawls sighted by park personnel. There was no public disturbance of the turtles or predation. The program was expanded this year to include recording all conditions surrounding sightings and 21 turtles were measured. Due to lack of funds there was no way to determine hatching success. Next year it is hoped to increase efforts by tagging and making maps. One turtle washed up on the beach that had been shot. The public was excluded from the beach during full moon periods to ensure nesting success.

*

Hugh Passingham reported the Camp Lejeune efforts in turtle surveillance which began in 1974. Nightly patrols on Onslow Beach were conducted at 50 minute turnarounds with four-wheel drive vehicle. Headlights were kept on low beam. The beach is 7 miles long. 14 nests were sent to the Institute of Marine Science for headstarting. 26 turtles were tagged as the turtles got on hard sand on their trek back to the water. Mr. Passingham sighted 3 turtles that had been previously tagged. One of these returned to lay eggs two weeks after laying her first clutch. Some unusual eggs were observed - 1 double yolk, 1 triple yolk, and some abnormally small eggs. The surveillance at Onslow Beach produced sightings of 138 crawls in the 7 mile section, 2 nests with uncounted eggs, 63 nests containing 7,077 eggs with a 57% hatch producing 4,037 hatchlings. Of the eggs that Dr. Schwartz head started, 57.2% hatched. Mr. Passingham discovered by accident that it does not necessarily affect hatch rate for eggs to be dropped. He experienced 85% hatch success after droping a clutch while loading them for incubation. All nests below the high tide line or in a heavy traffic area were moved. Raccoon predated 4 nests. Camp Lejeune had a formal consultation with the U. S. Fish & Wildlife Service which resulted in a no jeopardy finding. Wire cages were placed over nests as soon as they were found to protect them from raccoons. Representatives of the Natural Resources Branch of Camp Lejeune have found that simply placing a 3'x3' piece of 2x4 electric welded wire over

the nest, weighted by sand on the edges, is sufficient to protect the eggs. As a result of a severe storm 6 nests were completely destroyed but some of the nests were dug up from under 2 feet of compacted sand with a fairly good survival rate.

*

Otto Florschutz reported on Pea Island Refuge. On its 13 miles of beach there were 9 nests and 12 false crawls compared to 7 nests and 7 crawls last year. Pea Island was at one time involved in a transplant program using eggs from Cape Romaine. This program began in 1972 and continued for a five year period transplanting 6,000 eggs with a 73% hatch success producing about 3,500 to 4,000 hatchlings. Of the 7 national refuges in North Carolina, Pea Island is the only refuge to have ocean beach frontage. Immediately north of North Carolina is Back Bay Refuge which produced 2 loggerhead nests for the first time in over 40 years. At Cape Romaine, a Fish & Wildlife refuge between Charleston and Georgetown, exists a heavy loggerhead concentration which produced 1,263 nests compared to 1,828 last year. Fluctuation has been normal for the past several years. In the southeast United States the Fish & Wildlife Service owns close to 160 miles of ocean beachs which are all monitored for sea turtle activity. In 1979 on these beaches 3,455 loggerhead nests, 14 green turtles, and 2 leatherbacks were sighted. The Southeastern Sea Turtle Recovery Team was formed in December 1978 and has 2 team leaders, 12 recovery team members and over 30 consultants. This team is unique in that it is the only endangered species recovery team that is not administered by the U. S. Fish & Wildlife Service, but rather National Marine Fisheries Service. It deals with 6 species of marine turtles. The team was involved in the Oregon Inlet jetties project in North Carolina. It found that although the project will threaten the integrity of Pea Island Refuge and also affect turtles nesting, the turtle numbers were not large enough to affect the overall status of the loggerhead. In late November of 1979 there was a World Conference on Sea Turtles. As a

result of this week long meeting the objective for future strategy is to develop conservation action based on the biology of the species that will return the sea turtles to former abundance while allowing control of exploitation for the benefit of generations yet to come. Mr. Florschutz said the conference showed how little we really know about the sea turtle despite its world-wide distribution. The conference produced a wide range of papers and presentations dealing with populations of sea turtles throughout the world. Each had the common tone of reductions in number. Some of the points Mr. Florschutz brought from this conference were that sexing of hatchling sea turtles can now be done microscopically and that sex is influenced by egg-sand temperatures. Near 30°C temperature produced an equal number of males and females, but temperatures below that produce more males and above produce more females. There was quite a difference of opinion among the scientists at the conference as to the value of headstarting and transplanting of nests; also as to where imprinting occurs. As a possible solution to predation it has been found that if the freshly laid eggs were moved 10 to 20 meters and reburied it would drastically decrease predation. There is no need to cover the new nest with a wire cage, since it appears the attraction to predators is the scent of the first nest. As a result of the Washington meeting and interest of the National Marine Fisheries Service and the Fish & Wildlife Service and other turtle people there is talk of developing a marine stranding information network. The same data will be collected from all dead turtles found on the beach and will be fed into a central data bank. This program has been developed to the point that State coordinators have been approached. (In North Carolina this is Dr. Frank Schwartz) An 800 telephone number will be established in the southeast to enable the public to report dead turtles. The closest federal, city, county, or state cooperative data collector will be notified. If the turtle was in adequate shape from which to collect parts, Dr. Schwartz would be notified. If it was too decomposed it would be marked with paint or buried. Field data collectors will send turtle stranding data to the state coordinator who will check indicated data and forward it to the Smithsonian which will serve as the network data base.

Mr. Florschutz said as the result of work done by National Marine Fisheries Service a new and improved excluder panel has been developed that will force the turtle under the trawler nets.

*

Dr. Schwartz reported that incubated eggs would result in 58% or better hatch. In June it takes an average of 81 days for hatching, while July averages 76 days and August 85 days if the eggs are left in the field. Incubated hatching of eggs takes approximately 60 days, with a better percentage of hatch occuring than field incubation in August or later month eggs. He recommended incubating eggs laid in August be moved inside and incubated since the ground temperature at that time is below the critical temperature for the hatchlings or incubation and survival. He has observed that hatchlings will be bigger from eggs laid in Florida that the ones laid in North Carolina and will remain so even when they are all hatched in the same place. He has hatched eggs from Florida and up the coast and has noted the progressive decrease in overall size of hatchlings from eggs of northern beaches. Although there has been some shift in weight differential the size differential has remained constant.

Dr. Schwartz listed the following needs for North Carolina's sea turtle project: quicker reporting, more flights spaced more evenly (not concentrated around full moon periods), better ways to mark nests and better ways of tagging and possibly limit ourselves to certain geographic areas (Cape Lookout, Camp Lejeune, and Hammocks Beach produce 80% of nesting in this State). He also expressed the need for determining the sex of turtles offshore, especially late in the season, standardization of field data collection, identification of those who are tagging and what kind of tags they are using.

Dr. Schwartz felt the state needs to designate a federal sanctuary for marine turtles from Bogue Inlet to New River from the beach to 1 mile offshore during the mating and nesting season. The time and duration of the sanctuary designation by the N. C. Dept. of Marine Fisheries would be flexible depending on favorable environmental conditions. This would prohibit shrimping in that one mile zone between May and September. He feels this will result in fewer dead turtles as a result of drowning in trawlers

nets or being shot.

Mr. John Reintjes explained the original prototype of the excluder panel (one developed and tried in the past 2 years was designed to roll the turtle over the top of the trawl net and supposedly out of the way of the net. In many cases however the turtle would dive into the net when it made contact with the panel. This panel did reduce the shrimp catch but at the same time eliminated some trash fish so that the shrimper ended up with a cleaner catch. The newest excluder panel has been designed to push the turtle under the net. This panel is being used experimentally off the South Carolina coast and the Cape Canaveral Ship Channel to determine its effectiveness. Mr. Reintjes feels acceptance by the shrimper will not be too difficult.

*

Other Needs Expressed

Standardize field data forms

More markers at Cape Lookout and other areas

Cover area from New River to the South Carolina Line

It would be helpful if a factorial relationship could be developed between number of crawls and/or nests observed from the air and the number observed by intensive night surveillance on the ground.

*

Other Items of Significance That Emerged During the Course of Discussion

There appears to be evidence that turtles have difficulty in nesting where the beach is made up of coarse shell fragments.

The configuration of the beach profile does not seem to affect the nesting.

It is suspected that imprinting occurs as the hatchling hits the beach and is related to the characteristics of the wave front.

MARINE TURTLE AERIAL SURVEY FORM

(1) STATE N.C.

(2) DATE 800812

(3) FLIGHT LEADER J. FRIDELL

(4) TIME: S 0815 F 0920

(5) AIRCRAFT MILITARY HELICOPTER

(6) PILOT CAPT. TELLER

(7) RECORDER J. FRIDELL

(8) WEATHER: CURRENT 1 24 HRS 2

(9) VELOCITY 50 KNOTS (10) ALTITUDE 250'

(11) SEASTATE BEAUFORT

(12) BEACH SECTION	(13) HEADING	(14) TIME S/F	(15) SPECIES	(16) NUMBER OF CRAWLS			(17) OTHER INFORMATION
				NESTING	FALSE	UNKNOWN	
ONSLOW BEACH	N	0815/	CC	1	0	0	-0 STRANDINGS -4 OLD CRAWLS
BROWN'S ISLAND	N		CC	2	0	0	-0 STRANDINGS -3 OLD CRAWLS
BEAR ISLAND	N	/0850	CC	1	2	0	-0 STRANDINGS -2 OLD CRAWLS
		0 TURTLES SIGHTED IN WATER					
		1 SHRIMP BOAT OFF BEAR ISLAND 1 " " " BROWN'S ISLAND 2 " " " ONSLOW BEACH					

MARINE TURTLE AERIAL SURVEY FORM

(1) STATE N.C.

(2) DATE 800811

(3) FLIGHT LEADER J. FRIDELL

(4) TIME: S 0830 F 0940

(5) AIRCRAFT MILITARY HELICOPTER

(6) PILOT CAPT. TELLER (USMC)

(7) RECORDER J. FRIDELL

(8) WEATHER: CURRENT 2 24 HRS 1

(9) VELOCITY 60 KNOTS (10) ALTITUDE 300'

(11) SEASTATE BEAUFORT

(12) BEACH SECTION	(13) HEADING	(14) TIME S/F	(15) SPECIES	(16) NUMBER OF CRAWLS			(17) OTHER INFORMATION
				NESTING	FALSE	UNKNOWN	
ONSLOW BEACH	N	0830/	CC	2	0	0	-2 OLD NESTS -0 STRANDINGS
BROWN'S ISLAND	N		CC	3	0	0	-0 STRANDINGS
BEAR ISLAND	N	/0910	CC	2	0	0	-0 STRANDINGS -1 OLD CRAWL
		0 TURTLES SIGHTED IN WATER					
		1 SHRIMP BOAT SIGHTED OFF BROWN'S ISLAND					

MARINE TURTLE AERIAL SURVEY FORM

(1) STATE N.C.

(2) DATE 800801

(3) FLIGHT LEADER JOHN FRIDELL

(4) TIME: S 0845 F 0945

(5) AIRCRAFT MILITARY HELICOPTER

(6) PILOT CAPT. TELLER (USMC)

(7) RECORDER JOHN FRIDELL

(8) WEATHER: CURRENT 0 24 HRS 0

(9) VELOCITY 60 KNOTS (10) ALTITUDE 300'

(11) SEASTATE BEAUFORT

(12) BEACH SECTION	(13) HEADING	(14) TIME S/F	(15) SPECIES	(16) NUMBER OF CRAWLS			(17) OTHER INFORMATION
				NESTING	FALSE	UNKNOWN	
ONSLOW BEACH	N	0845/	CC	0	1	0	-0 STRANDINGS -2 OLD NESTS -GROUND TRUTH HEADED BY C. PETERSON
BROWN'S ISLAND	N		CC	2	0	0	-0 STRANDINGS -3 OLD CRAWLS -NO GROUND TRUTH
BEAR ISLAND	N	/0945	CC	0	0	1	-0 STRANDINGS -4 OLD CRAWLS
		0 TURTLES SIGHTED IN WATER					
		1 SHRIMP BOAT SIGHTED OFF ONSLOW BEACH 2 " " " " BROWN'S ISLAND					

MARINE TURTLE AERIAL SURVEY FORM

(1) STATE N.C.

(2) DATE 800731

(3) FLIGHT LEADER JOHN FRIDELL

(4) TIME: S 0900 F 1010

(5) AIRCRAFT MILITARY HELICOPTER

(6) PILOT CAPT. TELLER (USMC)

(7) RECORDER JOHN FRIDELL

(8) WEATHER: CURRENT 0 24 HRS 3

(9) VELOCITY 50 KNOTS (10) ALTITUDE 300'

(11) SEASTATE BEAUFORT

(12) BEACH SECTION	(13) HEADING	(14) TIME S/F	(15) SPECIES	(16) NUMBER OF CRAWLS			(17) OTHER INFORMATION
				NESTING	FALSE	UNKNOWN	
ONSLOW BEACH (CAMP LEJEUNE)	N	0900/	CC	1	0	0	- 2 OLD NESTS - NO STRANDINGS - GROUND TRUTH BY H. PASSINGHAM & J. FRIDELL - HEADED BY C. PETERSON
BROWN'S ISLAND	N		CC	4	1	0	- NO STRANDINGS - ONE OLD NEST - 3 OLD FALSE CRAWLS - NO GROUND TRUTH CONDUCTED
BEAR ISLAND (HAMMOCK'S BEACH STATE PARK)	N	/1010	CC	4	1	0	- NO STRANDINGS - 2 OLD NESTS - 1 " FALSE CRAWL - GROUND TRUTH BY STATE PARK PERSONNEL
		2 TURTLES SIGHTED APPROX. ½ MILE OFF BROWN'S ISLAND					
		1 SHRIMP BOAT SIGHTED OFF BROWN'S ISLAND 1 " " " " ONSLOW BEACH					

MARINE TURTLE AERIAL SURVEY FORM

(1) STATE N.C.

(2) DATE 800712

(3) FLIGHT LEADER JOHN FRIDELL

(4) TIME: S 0810 F 0950

(5) AIRCRAFT MILITARY HELICOPTER

(6) PILOT MAJ. REGAN (U.S.M.C.)

(7) RECORDER JOHN FRIDELL

(8) WEATHER: CURRENT 0 24 HRS 0

(9) VELOCITY 40 KNOTS

(10) ALTITUDE 300'

(11) SEASTATE BEAUFORT

(12) BEACH SECTION	(13) HEADING	(14) TIME S/F	(15) SPECIES	(16) NUMBER OF CRAWLS			(17) OTHER INFORMATION
				NESTING	FALSE	UNKNOWN	
ONSLOW BEACH (CAMP LEJEUNE)	N	0820/	CC	1	1	0	-0 STRANDINGS -3 OLD CRAWLS -GROUND TRUTH BY HUGH PASSINGHAM & JOHN FRIDELL
BROWN'S ISLAND	N		CC	3	0	0	-0 STRANDINGS -NO GROUND TRUTH
BEAR ISLAND	N	/0930	CC	1	0	0	-0 STRANDINGS -GROUND TRUTH BY STATE PARK PERSONNEL
		0 TURTLES SIGHTED IN WATER					

MARINE TURTLE AERIAL SURVEY FORM

(1) STATE N.C.

(2) DATE 800711

(3) FLIGHT LEADER JOHN FRIDELL

(4) TIME: S 0810 F 0945

(5) AIRCRAFT MILITARY HELICOPTER

(6) PILOT

(7) RECORDER JOHN FRIDELL

(8) WEATHER: CURRENT 2 24 HRS 8

(9) VELOCITY 30 KNOTS (10) ALTITUDE 300'

(11) SEASTATE BEAUFORT

(12) BEACH SECTION	(13) HEADING	(14) TIME S/F	(15) SPECIES	(16) NUMBER OF CRAWLS			(17) OTHER INFORMATION
				NESTING	FALSE	UNKNOWN	
ONSLOW BEACH (CAMP LEJEUNE)	N	0820 /	CC	1	3	0	-NO STRANDINGS -GROUND TRUTHED BY HUGH PASSINGHAM & JOHN FRIDELL
BROWN'S ISLAND (CAMP LEJEUNE)	N		CC	0	0	0	-NO STRANDINGS -ONE OLD NEST -NO GROUND TRUTH CONDUCTED
BEAR ISLAND (HAMMOCK'S BEACH STATE PARK)	N	/ 0920	CC	0	0	0	-NO STRANDINGS SIGHTED -GROUND TRUTHED BY STATE PARK PERSONNEL
		2 TURTLES SIGHTED IN WATER APPROX ½ MILE OFF ONSLOW BEACH					
		0	"	"	"	"	OFF BROWN'S ISLAND
		0	"	"	"	"	" BEAR ISLAND

MARINE TURTLE AERIAL SURVEY FORM

(1) STATE N.C.

(2) DATE 800702

(3) FLIGHT LEADER JOHN FRIDELL

(4) TIME: S 1005 F 1115

(5) AIRCRAFT MILITARY HELICOPTER

(6) PILOT LT. BARNS (USMC)

(7) RECORDER JOHN FRIDELL

(8) WEATHER: CURRENT 1 24 HRS 1

(9) VELOCITY 30 KNOTS (10) ALTITUDE 350

(11) SEASTATE BEAUFORT

(12) BEACH SECTION	(13) HEADING	(14) TIME S/F	(15) SPECIES	(16) NUMBER OF CRAWLS			(17) OTHER INFORMATION
				NESTING	FALSE	UNKNOWN	
ONSLOW BEACH (CAMP LEJEUNE)	N	1015/	CC	0	2	0	-NO STRANDINGS -GROUND TRUTHED BY HUGH PASSINGHAM
BROWN'S ISLAND (CAMP LEJEUNE)	N		CC	5	1	0	-NO STRANDINGS SIGHTED -NO GROUND TRUTH CONDUCTED
BEAR ISLAND (HAMMOCK'S BEACH STATE PARK)	N	/1115	CC	2	2	0	-NO STRANDINGS SIGHTED -GROUND TRUTH CONDUCTED BY STATE PARK PERSONNEL
		0 TURTLES SIGHTED IN WATER OFF BEACHS					

MARINE TURTLE AERIAL SURVEY FORM

(1) STATE N. C.

(2) DATE 800701

(3) FLIGHT LEADER JOHN A. FRIDELL

(4) TIME: S 0940 F 1050

(5) AIRCRAFT MILITARY HELICOPTER

(6) PILOT MAG. MEYER (USMC)

(7) RECORDER JOHN A. FRIDELL

(8) WEATHER: CURRENT 0 24 HRS 0

(9) VELOCITY 20 KNOTS (10) ALTITUDE 300'

(11) SEASTATE BEAUFORT

(12) BEACH SECTION	(13) HEADING	(14) TIME S/F	(15) SPECIES	(16) NUMBER OF CRAWLS			(17) OTHER INFORMATION
				NESTING	FALSE	UNKNOWN	
ONSLOW BEACH (CAMP LEJEUNE)	N	0955/	CC	0	0	0	-NO STRANDINGS -ONE OLD CRAWL -GROUND TRUTH BY HUGH PASSING AND JOHN FRIDELL
BROWN'S ISLAND	N		CC	0	0	0	-NO STRANDINGS -NO GROUND TRUTH CONDUCTED ON ISLAND
BEAR ISLAND (HAMMOCK'S BEACH STATE PARK)	N	/1045	CC	2	0	0	-NO STRANDINGS -BELIEVE ONE OF THE NEST MAYBE A DAY OR TWO OLD
							-GROUND TRUTHED BY STATE PARK PERSONNEL
		2 TURTLES SPOTTED APPROX. 1/2 MILE OF BEAR ISLAND (NEAR ROGUE INLET)					
		1 TURTLE SPOTTED APPROX 1/2 MILE OFF BROWN'S ISLAND					
		0 TURTLES SIGHTED OFF ONSLOW					

MARINE TURTLE AERIAL SURVEY FORM

(1) STATE N.C.

(2) DATE 800614

(3) FLIGHT LEADER JOHN FRIDELL

(4) TIME: S 0805 F 0930

(5) AIRCRAFT MILITARY HELICOPTER

(6) PILOT MAG. REGAN

(7) RECORDER JOHN FRIDELL

(8) WEATHER: CURRENT 0 24 HRS 1

(9) VELOCITY 40 KNOTS (10) ALTITUDE 200'

(11) SEASTATE BEAUFORT

(12) BEACH SECTION	(13) HEADING	(14) TIME S/F	(15) SPECIES	(16) NUMBER OF CRAWLS			(17) OTHER INFORMATION
				NESTING	FALSE	UNKNOWN	
ONSLOW BEACH	N	0815/0835	CC	0	1	1	-GROUND TRUTH BY JOHN FRIDELL -NO STRANDINGS SIGHTED
BROWN'S ISLAND	N	0835/0850	CC	0	0	0	-NO GROUND TRUTH CONDUCTED -NO STRANDINGS
BEAR ISLAND	N	0850/0900	CC	0	0	0	-NO STRANDINGS -GROUND TRUTHED BY STATE PARK PERSONNEL
RETURN ½ MILE OFF COAST HEADING SOUTH SIGHTED ONE TURTLE IN WATER OFF BROWNS ISLAND					0900/0920		

MARINE TURTLE AERIAL SURVEY FORM

(1) STATE N.C.

(2) DATE 800613

(3) FLIGHT LEADER JOHN A. FRIDELL

(4) TIME: S 0810 F 0910

(5) AIRCRAFT MILITARY HELICOPTER

(6) PILOT MAG REGAN

(7) RECORDER JOHN A. FRIDELL

(8) WEATHER: CURRENT 1 24 HRS 1

(9) VELOCITY 30 KNOTS (10) ALTITUDE 500'

(11) SEASTATE BEAUFORT

(12) BEACH SECTION	(13) HEADING	(14) TIME S/F	(15) SPECIES	(16) NUMBER OF CRAWLS			(17) OTHER INFORMATION
				NESTING	FALSE	UNKNOWN	
ONSLOW BEACH	N	0810/	CC	0	1	0	-NO STRANDINGS -GROUND TRUTHED BY BASE NAT. RES. PERSONNEL (J. FRIDELL)
BROWN'S ISLAND	N		CC	0	0	0	-NO STRANDINGS -NO GROUND TRUTH CONDUCTED
BEAR ISLAND	N	/0910	CC	1	0	0	-NO STRANDINGS SIGHTED -GROUND TRUTH CONDUCTED BY HAMMOCK'S BEACH STATE PARK PERSONNEL
RETURN FLIGHT - APPROX ½ mile OFF COAST HEADING SOUTH -2 TURTLES SIGHTED OFF ONSLOW BEACH							-EROSION ALONG ONSLOW BEACH HAS CAUSED HIGH TIDE LINE TO REACH
							TO THE FOOT OF THE DUNES - ALONG PART OF THE SOUTHERN END (SOUTH OF KISELEY PIER) THE TIDE HAS
							CUT DEEP INTO THE DUNES CAUSING A ONE TO FIVE FOOT STEEP BANK -IN THESE AREAS
							TURTLE WILL HAVE TO NEST UP IN DUNES OR ON SIDES OF DUNES

MARINE TURTLE AERIAL SURVEY FORM

(1) STATE N.C.

(2) DATE 800531

(3) FLIGHT LEADER JOHN A. FRIDELL

(4) TIME: S 0830 F 0930

(5) AIRCRAFT MILITARY HELICOPTER

(6) PILOT UNKOWN

(7) RECORDER JOHN A. FRIDELL

(8) WEATHER: CURRENT 0 24 HRS 1

(9) VELOCITY 30 KNOTS (10) ALTITUDE 300'

(11) SEASTATE BEAUFORT

(12) BEACH SECTION	(13) HEADING	(14) TIME S/F	(15) SPECIES	(16) NUMBER OF CRAWLS			(17) OTHER INFORMATION
				NESTING	FALSE	UNKNOWN	
CAUSLOW BEACH	N	0830/	CC	0	0	0	-NO STRANDINGS -ONE OLD NEST -GROUND TRUTHED BY J. Fridell
BRUNS ISLAND	N		CC	0	0	0	-NO STRANDINGS -2 OLD FALSE CRAWLS
BEAR ISLAND HAMMOCK BEACH STATE PARK	N		CC	2	0	0	-NO STRANDINGS -NO OLD CRAWLS -GROUND TRUTHING CONDUCTED BY HAMMOCK'S BEACH STATE PARK PERSONNEL

MARINE TURTLE AERIAL SURVEY FORM

(1) STATE N.C.

(2) DATE 800530

(3) FLIGHT LEADER ~~CHARLES PETERSON~~ JOHN FRIDELL

(4) TIME: S 0830 F 0950 (STANDARD)

(5) AIRCRAFT MILITARY HELICOPTER

(6) PILOT UNKNOWN (MILITARY PERSONNEL)

(7) RECORDER JOHN A. FRIDELL

(8) WEATHER: CURRENT 0 24 HRS 0

(9) VELOCITY 30 KNOTS (10) ALTITUDE 200'

(11) SEASTATE BEAUFORT

(12) BEACH SECTION	(13) HEADING	(14) TIME S/F	(15) SPECIES	(16) NUMBER OF CRAWLS			(17) OTHER INFORMATION
				NESTING	FALSE	UNKNOWN	
ONSLOW BEACH	N	0830/	CC	1	0	0	-NO STRANDINGS -NO OLD CRAWLS -EROSION CAUSING STEEP BANKS-SOUTH END
BROWN'S ISLAND	N		CC	0	2	0	-NO STRANDINGS -NO OLD CRAWLS ~~-EROSION APPEARS MINOR~~
BEAR ISLAND (HAMMOCK BEACH STATE PARK)	N		CC	0	0	0	-NO STRANDINGS -NO OLD CRAWLS -EROSION APPEARS MINOR
							-ONSLOW WAS GROUND TRUTHED BY CAMP LEJEUNE NATURAL RESOURCES PERSONNEL (J.A. FRIDELL)
							-BROWN'S ISLAND IS USED BY THE MARINES AS AN IMPACT AREA AND IS UNAVAILABLE TO THE BASE BIOLOGISTS,
							THEREFOR NESTING DATA, OTHER THAN NUMBERS AND APPROX. LOCATION OF NESTS CANNOT BE OBTAINED
							FROM THIS AREA
							-BEAR ISLAND GROUND WORK IS CONDUCTED BY THE HAMMOCKS
							BEACH STATE PARK PERSONNEL

TABLE II
RETURN RECORD OF TAGGED TURTLES

1980 SEA TURTLE INVENTORY

DATES 6/17/80 - 8/9/80

Date	Tag #	Return	Return	Return	Return
6/17/80	651				
6/17/80	652	7/3/80 ⊗	7/16/80	7 / 28/80	
6/19/80 ⊗	653				
6/19/80	654				
6/20/80	655	7/3/80 ⊗	7/15/80 ⊗ Retag 640	7/28/80	8/8/80
Green 6/25/80	657*	7/9/80 Retag 669	7/21/80 Retag 649	8/2/80	(2) 8/17/80
6/26/80 ⊗	NC0001	7/11/80 ⊗	7/24/80		
6/27/80 ⊗	648	7/24/80			
6/27/80	658				
6/29/80	650	7/12/80			
6/29/80	659				
6/30/80	660	7/14/80 ⊗ Retag 672	7/16/80	8/1/80	
7/1/80 ⊗	661	7/14/80	7/26/80 ⊗	8/8/80	
7/3/80	662				
7/6/80	663				
7/6/80 ⊗	664				
7/7/80	667	8/18/80 ⊗	8/20/80		
7/8/80 ⊗	665				
7/8/80 ⊗	666				
7/10/80 ⊗	670	7/23/80			
7/11/80 ⊗	671				
7/14/80	673				
7/14/80 ⊗	674				
7/15/80	675				
7/17/80	641				
7/17/80 ⊗	642	7/18/80			
7/18/80 ⊗	647	7/20/80	8/2/80		
7/19/80	645				
7/23/80	646				
7/25/80	644				
7/30/80	633				
8/1/80 (1)	639	8/14/80			
8/3/80	638				
8/4/80	634				
8/5/80	637				
8/7/80 ⊗	636	8/12/80			
8/9/80 ⊗	635				

⊗ - Turtle was tagged but did not nest.

(1) - Turtle previously tagged but tag missing - tag hole present

(2) - Crawl body pit and eggs indicative of Green Turtle but turtle not observed

Tagged or

1 Turtle observed 5 times; 4 turtles observed 4 times; 3 turtle observed 3 times;
6 turtles observed 2 times; 23 turtles observed 1 time
61 sightings of tagged turtles

SEA TURTLE INVENTORY

FOR

SUMMER AND FALL 1980

Natural Resources and Environmental Affairs Branch

Base Maintenance Division

Marine Corps Base

Camp Lejeune, North Carolina 28542

JULIAN I. WOOTEN
Director

DR. FRANK B. SCHWARTZ
Advisor
Institute of Marine Science
Morehead City, North Carolina

CHARLES D. PETERSON
Supervisor, Wildlife Management

JOHN A. FRIDELL

&

HUGH R. PASSINGHAM

Technicians

INTRODUCTION

The Sea Turtle Inventory for 1980 is a continuation of past efforts by Marine Corps Base, Camp Lejeune, North Carolina to protect threatened Atlantic Loggerhead Sea Turtles. The program began in 1974 by the Marine Corps and Camp Lejeune biologists when evidence indicated that a high percentage of Atlantic Loggerhead nests on Onslow Beach were being destroyed by predators. This action was taken prior to the addition of the Atlantic Loggerhead Sea Turtle to the Endangered Species List, as threatened. The protection program to date has had three main objectices. First, for the compliance of the Endangered Species Act through Biological Opinions rendered by the U. S. Fish and Wildlife Service. Second, and probably the most important, conservation practices have been initiated to protect the turtles and their nests from predation. Third, has been to study the nesting habits of the Atlantic Loggerhead Sea Turtle (Caretta caretta).

There are several related projects that comprise the protection program. These include:

Nightly Beach Patrols	Aerial Surveys
Tagging Adult Turtles	Nesting and Hatching Success
Collection of Nesting Data	Occasional Hatchling Tagging
Insitu Weather Observations	Stranding Reports on Dead Turtles

The University of North Carolina Institute of Marine Sciences in Morehead City, North Carolina (IMS) assisted the Marine Corps in the turtle protection program. IMS provided tags for adult and hatchling turtles and assisted in the tagging process. Dr. Frank Schwartz of IMS is also a valuable source of information for the Camp Lejeune biologists.

In 1980, the Loggerhead program took on new dimensions when a Green Turtle (Chelonia mydas mydas) nested on Onslow Beach. The Green Turtle was observed nesting four times and is believed to have nested five times, since for one unobserved nest the crawl, nest, eggs and hatchlings were indicated of a Green Turtle.

RESULTS

The nesting season for 1980 began with the first nest on 30 May 1980 and ended with the last nest on 25 August 1980. There were a total of 125 crawls to nest on Onslow Beach of which 65 were successful. This compares closely to the data from the 1979 nesting season where 138 crawls and 63 successful nests were observed.

The rate of nest predation on Onslow Beach for the 1980 nesting season was zero. There were 37 nests, 35 loggerheads and 2 Green Turtles, protected by wire cages on Onslow Beach.

During the 1980 nesting season, a total of 36 turtles were tagged. One turtle had been tagged previously with Tag No. NC0001 and subsequently was not retagged by the Camp Lejeune technicians. Of the 36 tagged turtles, there were 29 return trips to the beach to lay (See Table III). One Loggerhead was observed laying 5 times at 12-13 day intervals. Four Loggerheads were observed 4 times. Three were observed 3 times, six turtles were observed 2 times and 23 were observed laying 1 time for a total of 59 sightings of tagged turtles. No turtles were observed on Onslow Beach that had been tagged on previous years. The Green Turtle was observed 4 times, retagged twice and is believed to have nested 5 times.

The Green Turtle nests produced 819 eggs of which 387 hatched for a 47.2% success rate. There were 2 deformed and 5 white (not albino) Green Turtle hatchlings from the 5 nests. Two of the Green Turtle nests were naturally incubated. Those nests contained 315 eggs of which 292 hatched for an 83.2% rate of hatchling success (See Table IV). The three remaining Green Turtle nests were taken to IMS where they were artifically incubated. Those nests contained 468 eggs, of which 95 hatched for a 20.3% rate of hatchling success (See Table VI).

Loggerhead nests produced 6,554 eggs total. Of the 6,554 eggs, 4,178 were allowed to hatch naturally, 3,467 of those eggs hatched for a 83% success rate (See Table IV). IMS artifically incubated 2,376 Loggerhead eggs of which 1,157 hatches for 48.7% success rate (See Table VI). Therefore, of 6,554 total Loggerhead Turtle eggs laid, 4,624 hatched for a 70.6% success rate. When Green and Loggerhead Turtle nests data are combined, a total of 7,373 eggs were laid of which 5,011 hatched for a

year's success rate of 67.96%. This overall success ate is better than the 1979 season success rate which was 57%.

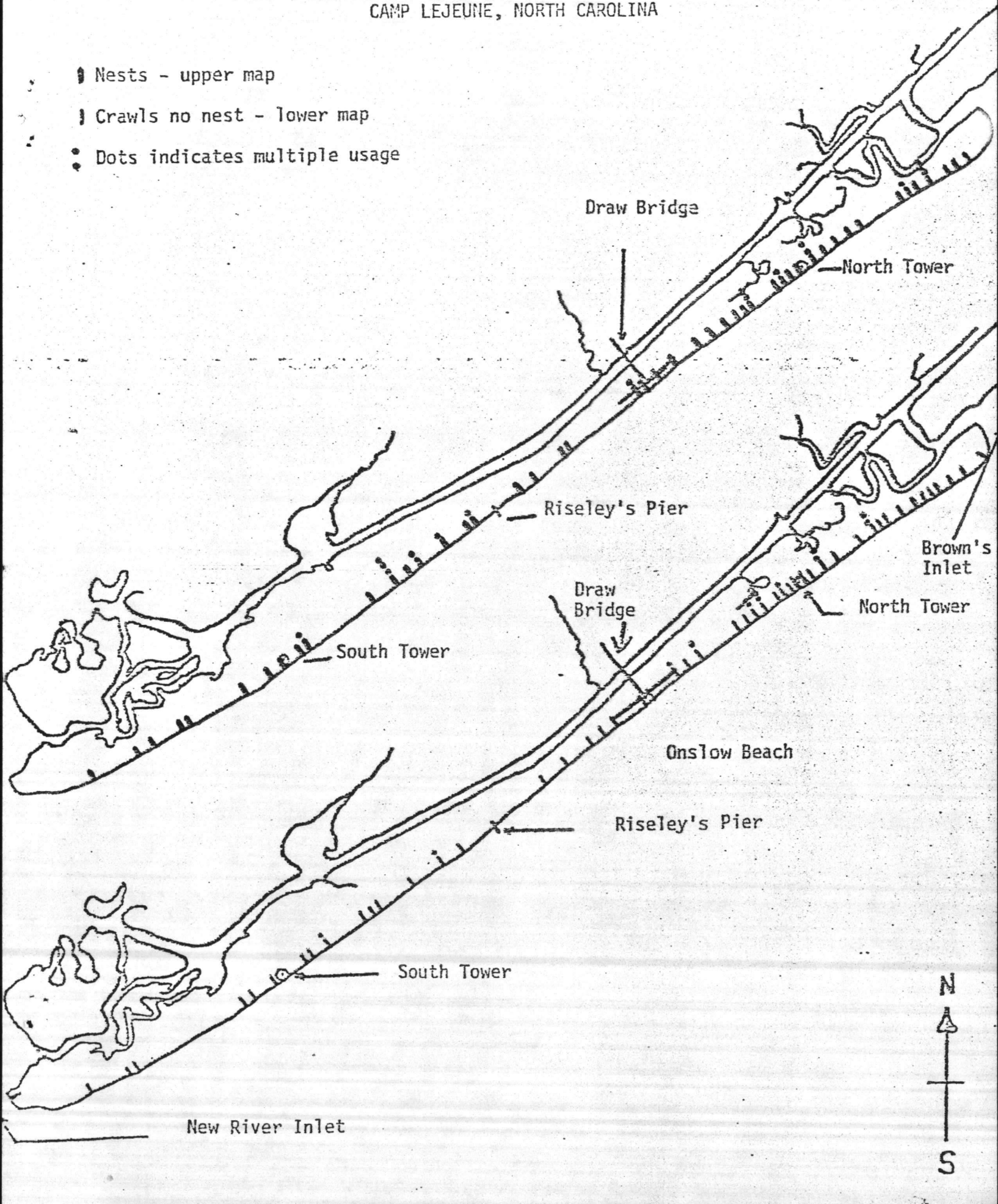
The Camp Lejeune Sea Turtle aerial surveillance flights covered beaches from New River Inlet to north to Bouge Inlet, which included Onslow Beach, Camp Lejeune, Brown's Island, Camp Lejeune and Bear Island (Hammock Beach State Park). Flight dates were scheduled such that they would fit in with the North Carolina to Louisiana surveys planned for 1980. The surveys were conducted from military helicopters piloted by Marine Corps personnel dispatched from Marine Corps Air Station, New River. Flights averaged 1 hour 15 minutes in duration and were flown at an altitude of 200 to 300 feet and a velocity of 30-60 knots. The return flights were flown approximately one half- one mile off the coast in an attempt to spot turtles in the water. A total of 12 flights were flown in sets of two at scattered intervals throughout the nesting period, for a total of 15 hours 35 minutes flight time. The number and location of all fresh nests and false crawls sighted were recorded along with the number and location of turtles observed offshore and of shrimping vessels within the survey data. Hammock Beach State Park personnel were notified in the event that nests and/or false crawls were sighted on their beach and written records of each flight were sent to State Fish and Wildlife personnel, Raleigh, North Carolina and Dr. F. J. Schwartz at IMS, Morehead City, North Carolina.

The Camp Lejeune Aerial Survey results (See Table III) are insignificant unless comparted to the overall aerial survey program for the East Coast, conducted by the U. S. Fish and Wildlife Service. Consequently, the discussion of the results will be held to a statement of total data taken. Observations were: 42 new nests, 18 false crawls, 10 swimming turtles and 30 shrimp boats within the survey bounds.

Questions concerning data contained in this report should be directed to the Commanding General, Marine Corps Base, Camp Lejeune, North Carolina - (Attention: Base Maintenance Division, Natural Resources and Environmental Affairs Branch).

MAP I

NEST AND CRAWL ACTIVITY
ONSLOW BEACH, MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA



MAP II

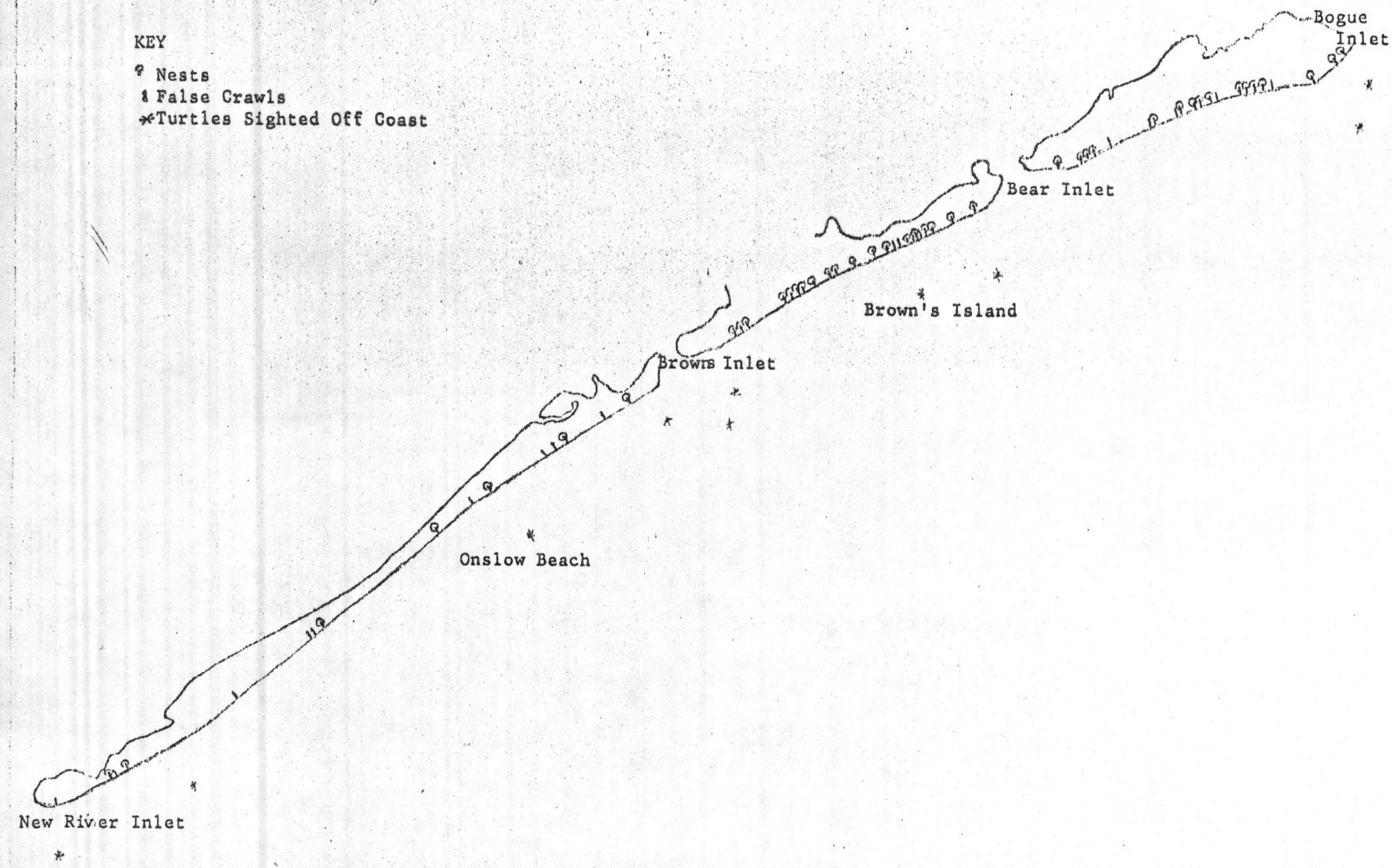

KEY
Nests
False Crawls
Turtles Sighted Off Coast
Bogue Inlet
Bear Inlet
Brown's Island
Browns Inlet
Onslow Beach
New River Inlet

TABLE I

CRAWL INFORMATION IN RELATION TO MOON AND TIDE CYCLES AND WEATHER CONDITIONS

(Nights handled as a whole not broken at midnight)

DATE Night of	Moon Rise % Illumin	Time of Hi Tide	Time Crawl W/O nest	Time Crawl W/ nest	Total	Weather	Temp H_2O	Temp Air
5-30-80		–		1	1	Clear Fair	20.5°C	19°C
5-31-80					0			
6-01-80	2151-95%	2130			0			
6-02-80	2241-90%	2216		1	1	Fair, Sctrd Clouds	22°C	21°C
6-03-80	2326-82%	2307			0			
6-04-80	0008-73%	0007	1	1	2	Fair Partly Cloudy	22°C	18.5°C
6-05-80	0047-63%	0103			0			
6-06-80	0125-51%	0207			0			
6-07-80	0203-40%	0311			0			
6-08-80	0242-29%	0412			0			
6-09-80	0323-19%	0512	1		1			
6-10-80	0407-11%	0607			0			
6-11-80	0455-05%	1835 0701 1926	1	2	3	Fair Partly Cloudy	24.9°C	–
6-12-80	0547-01%	0752			0			
6-13-80		2015	1		1			
6-14-80	0642-02%	2012	2		2			
6-15-80	0742-06%	2147			0			
6-16-80	0837-11%	2231			0			
6-17-80	0934-18%	2317		2100 2250	2	Fair Few Clouds	24°C	22°C
6-18-80	1030-27%	0005			0	Cool, Windy Cloudy	24°C	20°C
6-19-80	1125-36%	0053	2345	2345	2	Fair Clear	24.5°C	24°C
6-20-80	1219-45%	0144	2300	2210	2	Fair Cloudy	24°C	22.5°C
6-21-80	1313-55%	0237	2300	2300	2			
6-22-80	1407-64%	0330		2300 –	2			
6-23-80	1501-73%	0420			0	Fair	24°C	24°C
6-24-80	1558-81%	0508			0	Stormy	23°C	24°C

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CRAWL INFORMATION IN RELATION TO MOON AND TIDE CYCLES AND WEATHER CONDITIONS

(Nights handled as a whole, not broken at midnight.)

DATE Night of	Moon Rise % Illumin	Time of Hi Tide	Time Crawl W/o nest	Time Crawl W/ nest	Total	Weather	Temp H_2O	Temp Air
6-25-80	1655-88%	0555 1819	0030 0200	2300	3	Partly Cloudy	24°C	23°C
6-26-80	1753-94% Full	0638 1901			0	Cloudy	24°C	23.5°C
6-27-80	1850-98%	0723	2200	2245	2	Fair & Clear	24°C	24°C
6-28-80	1945-100%	1943			0	Fair & Clear	24°C	26°C
6-29-80	2037-99%	2028		2200 0030 0100	3	Fair & Cloudy	25°C	26°C
6-30-80	2125-97%	2114	2115		1	Fair & Cloudy	24°C	22.5°C
7-1-80	2209-92%	2201	2300 0030		2	Fair & Clear	24°C	24°C
7-2-80	2249-85%	2251	0215		1	Fair & Clear	26°C	27°C
7-3-80	2328-75%	2346	2245	2230	2	Thunderstm 2300 Clearing 2400	24.5°C	23°C
7-4-80	0005-65%	0043		2300 2300 2300	3	Cloudy, Occ. Showers	24.5°C	24°C
7-5-80	0043-54%	0148		2400	1	Fair & Clear	26°C	26°C
7-6-80	0122-42%	0253	2345	2310 2330	3	Fair & Ptly Cloudy	26°C	26°C
7-7-80	0203-31%	0356	0200 0230	2340	3	Fair & Clear	24.5°C	26°C
7-8-80	0248-27%	0457		0200	1	Fair & Cloudy	26°C	26°C
7-10-80	0431-6%	1820 0645	0015 0115 0030 0335	2345	5	ThundStm 2200 Clearing 2400	26°C	23°C
7-11-80	0527-2%	1910 0734	2340	0200	2	Fair & Clear	26.5°C	26°C
7-12-80	0624-0%	1957			0	Fair & Clear	26°C	27°C
7-13-80	- 1%	2038	0140 0115 0140	0250	4	Fair & Ptly Cloudy	26.5°C	24.5°C
7-14-80	0722-03%	2120	2320 2310	2315 0040	4	Fair & Clear	26°C	25°C
7-15-80	0819-08%	2201	2340 2340 2350	0330	4	Fair & Clear	25.5°C	25.5°C
7-16-80	0914-14%	2242	0215 0315	2145 2310 0300	5	Fair & Clear	26°C	26°C
7-17-80	1009-21%	2323	2240 0400	0245	3	Fair & In-crsg Clouds	27.5°C	26°
7-18-80	1103-29%	0006		0305	1	Fair & Ptly Cloudy	27°C	26°
7-19-80	1156-38%	0057	2200 0100 0200		3	Fair & Clear	27°C	27.5°C

TABLE I

CRAWL INFORMATION IN RELATION TO MOON AND TIDE CYCLES AND WEATHER CONDITIONS

(Nights handled as a whole, not broken at midnight.)

DATE Night of	Moon Rise % Illumin	Time of Hi Tide	Time Crawl W/O nest	Time Crawl W/ nest	Total	Weather	Temp H_2O	Temp Air
7-20-80	1250-48%	0149	2200	2330 0330	3	Fair & Clear	27°C	28.5°C
7-21-80	1345-57%	0241			0	Fair & Incrsg Cloudiness	27.5°C	27°C
7-22-80	1442-67%	0338		0040 0035	2	Fair & Cloudy	27°C	27°C
7-23-80	1539-76%	0431		0030	1	Rainy	25°C	25°C
7-24-80	1639-84%	0521		2215	1	Fair & Cloudy	26°C	26°C
7-25-80	1733-91%	0612		2215	1	Fair & CLoudy	26°C	26.5°C
7-26-80	1827-96%	1835 0658	2200 1835 0200		3	2200-2400 Rainy 0200 Thundstms	26°C	24.5°C
7-27-80	1917-99%	1922 0745	2200 2210 2200 2230		4	Heavy Rain	–	–
7-28-80	Full 2004-100%	2009		2210 2210	2	Cloudy	27°C	26°C
7-29-80	2047-98%	2054			0	Partly Cloudy	27°C	25°C
7-30-80	2128-93%	2144		2120	1	Fair & Clear	27°C	26°C
7-31-80	2206-86%	2233	0130		1	Fair & Clear	27.5°C	27.5°C
8-01-80	2224-77%	2328	0315	2200 2200 0245	4	2000-2200 Thunderstorm 2400 Clearing	27°C	26.5°C
8-02-80	2323-67%	0026		2330 0245 0300	3	Fair & Clear	27°C	28°C
8-03-80	0003/44%	0129	2		2		–	–
8-04-80	0047-33%	0235		2250	1	Partly Cloudy	27°C	28°C
8-05-80	0134-23%	0343		2230	1	Clear	27.5°C	28°C
8-06-80	0224-15%	0444			0	Clear	27°C	28°C
8-07-80	0318-8%	0540	2400		1	Partly Cloudy	27°C	26.5°C
8-08-80	0414-3%	1806 0630	2300 0200	2245 2315	4	Fair & Clear	27°C	27.5°C
8-09-80	0511-1%	1852 0715			0			
8-10-80	0608-0%	1934 0758		2	2			
8-11-80	– –	2013			0	Fair & Clear	27°C	27.5°C
8-12-80	0705-1%	2052		0230	1	Cloudy	27°C	27°C

TABLE I

CRAWL INFORMATION IN RELATION TO MOON AND TIDE CYCLES AND WEATHER CONDITIONS

(Nights handled as a whole not broken at midnight)

Date Night of	Moon Rise % Illumin	Time of Hi Tide	Time Crawl W/O nest	Time Crawl W/ nest	Total	Weather	Temp H_2O	Temp Air
8-13-80	0800-5%	2129			0	Fair & Clear	27°C	28°C
8-14-80	0854-10%	2206	2230	2300	2	Fair & Clear	27°C	28°C
8-15-80	0948-16%	2243			0	Clear & Windy	27.5°C	26.5°C
8-16-80	1041-23%	2323		1	1			
8-17-80	1135-32%	0010	0245		1	Cool & Cloudy	27°C	22°C
8-18-80	1230-41%	0100		0200	1	Thunderhd moving in Cloudy	26°C	23°C
8-19-80	1326-51%	0158			0	Cloudy	25.5°C	25°C
8-20-80	1422-60%	0258			0			
8-21-80	1518-70%	0356			0			
8-22-80	1613-79%	0258	1		1	Fair & Clear	25°C	23°C
8-23-80	1705-87%	0356						
8-24-80	1754-94%	0452	0100		1	Fair & Clear	23°C	19°C
8-25-80	1839-98%	0543 1721	between 2200-2400	between 2200-2400	2	Fair & Clear	23°C	19°C
8-26-80	1922-100%	0634 1859						
8-27-80	2002-99%	0723 1948						
8-28-80	2042-95%	0812						
8-29-80	2121-88%	2036						
8-30-80	2202-80%	2125						
8-31-80	2245-69%	2216						

TABLE II
RETURN RECORD OF TAGGED TURTLES

1980 SEA TURTLE INVENTORY

DATES 6/17/80 - 8/9/80

Date	Tag #	Return	Return	Return	Return
6/17/80	651				
6/17/80	652	7/3/80 ⊗	7/16/80	7/28/80	
6/19/80 ⊗	653				
6/19/80	654				
6/20/80	655	7/3/80 ⊗	7/15/80 ⊗ Retag 640	7/28/80	8/8/80
Green 6/25/80	657*	7/9/80 Retag 669	7/21/80 Retag 649	8/2/80	② 8/17/80
6/26/80 ⊗	NC0001	7/11/80 ⊗	7/24/80		
6/27/80 ⊗	648	7/24/80			
6/27/80	658				
6/29/80	650	7/12/80			
6/29/80	659				
6/30/80	660	7/14/80 ⊗ Retag 672	7/16/80	8/1/80	
7/1/80 ⊗	661	7/14/80	7/26/80 ⊗	8/8/80	
7/3/80	662				
7/6/80	663				
7/6/80 ⊗	664				
7/7/80	667	8/18/80 ⊗	8/20/80		
7/8/80 ⊗	665				
7/8/80 ⊗	666				
7/10/80 ⊗	670	7/23/80			
7/11/80 ⊗	671				
7/14/80	673				
7/14/80 ⊗	674				
7/15/80	675				
7/17/80	641				
7/17/80 ⊗	642	7/18/80			
7/18/80 ⊗	647	7/20/80	8/2/80		
7/19/80	645				
7/23/80	646				
7/25/80	644				
7/30/80	633				
8/1/80 ①	639	8/14/80			
8/3/80	638				
8/4/80	634				
8/5/80	637				
8/7/80 ⊗	636	8/12/80			
8/9/80 ⊗	635				

⊗ - Turtle was tagged but did not nest.

① - Turtle previously tagged but tag missing - tag hole present

② - Crawl body pit and eggs indicative of Green Turtle but turtle not observed

Tagged or

1 Turtle observed 5 times; 4 turtles observed 4 times; 3 turtle observed 3 times; 6 turtles observed 2 times; 23 turtles observed 1 time

TABLE III

AERIAL SURVEY

	May 30				May 31			
	N	FC	T	SB	N	FC	T	SB
Onslow Beach	1	0	0	2	0	0	0	1
Brown's Island	0	2	0	1	0	0	0	2
Bear Island	0	0	0	0	2	0	0	0

	June 13				June 14			
	N	FC	T	SB	N	FC	T	SB
Onslow Beach	0	1	2	1	0	1	0	3
Brown's Island	0	0	0	0	0	0	1	1
Bear Island	1	0	0	0	0	0	0	3

	July 1				July 2				July 11				July 12				July 21			
	N	FC	T	SB	N	FC	T	SB	N	FC	T	SB	N	FC	T	SB	N	FC	T	SB
Onslow Beach	0	0	0	0	0	2	0	0	1	3	2	0	1	1	0	2	1	0	0	1
Brown's Island	0	0	1	0	5	1	0	0	0	0	0	1	3	0	0	1	4	1	2	1
Bear Island	2	0	2	0	2	2	0	0	0	0	0	0	1	0	0	2	4	1	0	0

	Aug 1				Aug 11				Aug 12			
	N	FC	T	SB	N	FC	T	SB	N	FC	T	SB
Onslow Beach	0	1	0	1	2	0	0	0	1	0	0	2
Brown's Island	2	0	0	2	3	0	0	1	2	0	0	1
Bear Island	1	0	0	0	2	0	0	0	1	2	0	1

	TOTAL			
	N	FC	T	SB
Onslow Beach	7	9	4	13
Brown's Island	19	4	4	11
Bear Island	16	5	2	6
	42	18	10	30

Key N – Fresh Nests
FC – Fresh False Crawls
T – Turtles sighted off coast
SB – Shrimp Boats

SEA TURTLE INVENTORY
(Hatching Success)
Marine Corps Base
Camp Lejeune, North Carolina

TABLE IV

1980

*Green Turtle

Nest No.	Incubation Period DAYS	Total Eggs	Released Young	Emerged Young	Total Young	Percent of Success
001	65	115	67	39	106	92.2%
002	63	166 ?	158	3	161	97 %
003	63	134	4	69	73	54.5%
006 IMS	69	53	24	--	24	45.3%
007	--	126	0	0	0	0
012	65	102	81	4	85	83.3%
013	64	175	4	119	123	70.3%
015	63	134	0	128	128	95.5%
016 IMS		121				
018 IMS		101				
019	64	86	6	75	81	94.2%
021	63	143	0	114	114	79.7%
* 022	56	168	148	0	148	88.1%
026	60	100	0	91	91	91 %
027	59	72	0	71	71	98.6%
028 IMS		119				
029	60	113	0	78	78	69 %
034	60	127	25	21	46	36.2%
036	60	152	53	56	109	71.7%
037	59	116	4	89	93	80.2%
038	59	131	8	75	83	63.4%
039	60	167	161	0	161	96.4%
040	62	131	125	4	129	98.5%
042	59	78	7	58	65	83.3%
043	62	99	98	0	98	99.9%
046	58	183 ?	144	0	144	78.7%

SEA TURTLE INVENTORY
(Hatching Success)
Marine Corps Base
Camp Lejeune, North Carolina

1980

Nest No.	Incubation Period	Total Eggs	Released Young	Emerged Young	Total Young	Percent of Success
104 IMS	0	1	0	0	0	0
107 IMS		179				
108 IMS		134				
110 IMS		104				
112 IMS		104				
114 IMS		120				
115 IMS		80				
116 IMS		83				
118 IMS		112				
*119 IMS		145				
121 IMS		75				
125 IMS		99				
	TOTALS					
64		7352				
26 IMS		2823				
37 O B		4529				
GREEN TURTLE		819	(11.1			

22
46
81
100
119

819 TOT
636
183 ?

2 = 166
13 = 175
* 22 = 168
39 = 167
→ 46 = 183
75 = 160
* 81 = 166
* 100 = 157
107 = 179
* 119 = 145

SEA TURTLE INVENTORY
(Hatching Success)
Marine Corps Base
Camp Lejeune, North Carolina

1980

Nest No.		Incubation Period	Total Eggs	Released Young	Emerged Young	Total Young	Percent of Success
104	IMS	0	1	0	0	0	0
107	IMS		179				
108	IMS		134				
110	IMS		104				
112	IMS		104				
114	IMS		120				
115	IMS		80				
116	IMS		83				
118	IMS		112				
*119	IMS		145				
121	IMS		75				
125	IMS		99				
		TOTALS					
64			7352				
26	IMS		2823				
37	O B		4529				
GREEN TURTLE			819	(11.14% OF TOTAL)			

SEA TURTLE INVENTORY
(Hatching Success)
Marine Corps Base
Camp Lejeune, North Carolina

1980

Nest No.	Incubation Period	Total Eggs	Released Young	Emerged Young	Total Young	Percent of Success
048 IMS		124				
054	59	89	64	23	87	97.8%
058	58	109	51	55	106	97.2%
059	59	118	13	99	112	94.9%
062	58	97	3	91	94	96.9%
066	57	131	27	80	117	89.3%
067	63	99	0	88	88	88.9%
069	60	131	109	0	109	83.2%
072 IMS		123				
073	60	119	2	112	114	95.8%
075	60	160	4	154	158	98.75%
080		117	0	101	101	86.3%
*081 IMS		166				
082 IMS		96				
083		134				
084	59	116	4	106	110	94.8%
085	61	114	0	111	111	97.4%
086		89				
094 IMS		132				
095 IMS		102				
096		88	0	74	74	84.1%
098 IMS		114				
099 IMS		78				
*100 IMS		157				
102 IMS		114				
103 IMS		78				

Camp Lejeune 1980 Nests Incubated at Institute of Marine Sciences
26 Nests (3 of which were green)

Date Lain	Number Lain	Number Hatched	% Hatch	Locality
11 June	54	24	44.4	0.15 mi S. Risley Pier
20 June	121	82	68.1	0.6 mi S. Risley Pier
22 June	101	87	86.1	2.7 mi N. Risley Pier Sheet 16
29 June	117	26*	22.2	1.0 mi S. Risley Pier Sheet 16
10 July	119	0	0.0	Nest 048 - all infertile
17 July	120	43**	26.7	0.8 mi S. Risley Pier Grid 843254
21 July	166	1	.006	green turtles
20 July	96	94	98.0	0.8 mi S. Risley Pier Grid 892255
28 July	128	52	40.6	0.4 mi S. Risley Pier Grid 897258
28 July	101	11	10.9	0.8 mi S. Risley Pier Grid 892255
2 Aug	157	32	20.4	Nest 100 Grid 916275 - green turtles
1 Aug	75	68	90.7	Nest 099 Grid 894257
1 Aug	114	39	34.2	Nest 098 Grid 917275
2 Aug	114	61	53.5	Grid 933276
3 Aug	68	12	17.7	Grid 897258
4 Aug	179	63	35.2	Grid 952298 - Tag 634
5 Aug	132	1	0.75	Nest 108 - Tag 637
8 Aug	82	50	60.9	Nest 110 renest 661 - Grid 932286
8 Aug	103	99	96.1	Nest 112 renest 640 - Grid 882245
10 Aug	118	56	46.6	Nest 114 Grid 922279, 1.7 mi N. Risley Pier
10 Aug	71	65	91.4	Nest 115 Grid 871238, renest 645
12 Aug	82	76	92.7	Nest 116 2.1 mi N. Risley Pier - Grid 928284
14 Aug	110	54	49.1	Nest 118 retag 639 1.53
17 Aug	145	62	42.8	Nest 119 Grid 925281, 1.9 mi N. Risley Pier green turtles
20 Aug	73	38	52.1	3.4 mi N. Risley Pier - Grid 946295, Tag 667
26 Aug	98	56	57.2	Camp Lejeune
	2,844	1,252	44.0	Total Green and Loggerhead
	2,426	1,157	47.7	Total Loggerhead
	418	95	22.7	Total Green

Total Released - 1,581
" Loggerhead - 1,329 84.1%
" Green - 89 93.8%

1979 Camp Lejeune Data - 21 Nests (all loggerheads)

Total Eggs Lain	Hatched	%	Released	%
2,572	1,378	53.6	1,357	98.5

% Hatch Ranged: 0.8-99.2

*67 others developed but did not hatch.
**44 others developed but did not hatch.

TABLE V

Ground Survey Numbers

Date	Crawls No Nest	Crawls/Nest	Total Crawls
5-30-80		1	1
6-2-80		1	1
6-4-80	1	1	2
6-9-80	1		1
6-11-80	1	2	3
6-13-80	1		1
6-14-80	2		2
6-17-80		2	2
6-19-80	1	1	2
6-20-80	1	1	2
6-21-80	1	1	2
6-22-80		2	2
6-25-80		1	1
6-26-80	2		2
6-27-80	1	1	2
6-29-80		2	2
6-30-80	1	1	2
7-1-80	1		1
7-2-80	1		1
7-3-80	2	1	3
7-4-80		3	3
7-5-80		1	1
7-6-80	1	2	3
7-7-80		1	1
7-8-80	2		2
7-9-80		1	1
7-10-80	1	1	2
7-11-80	5		5
7-12-80		1	1
7-14-80	5	2	7
7-15-80	3	1	4
7-16-80		3	3
7-17-80	3	1	4
7-18-80	1	1	2
7-19-80	1	1	2
7-20-80	3	1	4
7-21-80		1	1
7-23-80		2	2
7-24-80		2	2
7-25-80		1	1
7-26-80	2		2
7-27-80	5		5
7-28-80		2	2
7-30-80		1	1

TABLE V. Cont'd

Ground Survey Numbers

Date	Crawls No Nest	Crawls/Nest	Total Crawls
8-1-80	1	2	3
8-2-80	1	2	3
8-3-80	2	2	4
8-4-80		1	1
8-5-80		1	1
8-7-80	1		1
8-8-80	1	2	3
8-9-80	1		1
8-10-80		2	2
8-12-80		1	1
8-14-80	1	1	2
8-15-80			0
8-16-80			0
8-17-80		1	1
8-18-80	1		1
8-19-80			0
8-20-80			0
8-21-80			0
8-22-80	1		1
8-23-80			0
8-24-80	1		1
8-25-80	1	1	2
8-26-80			0
8-27-80			0
8-28-80			0
8-29-80			0
8-30-80			0

TABLE VI

Camp Lejeune 1980 Nests Incubated at Institute of Marine Sciences
26 Nests (3 of which were green)

Date Lain	Number Lain	Number Hatched	% Hatch	Locality
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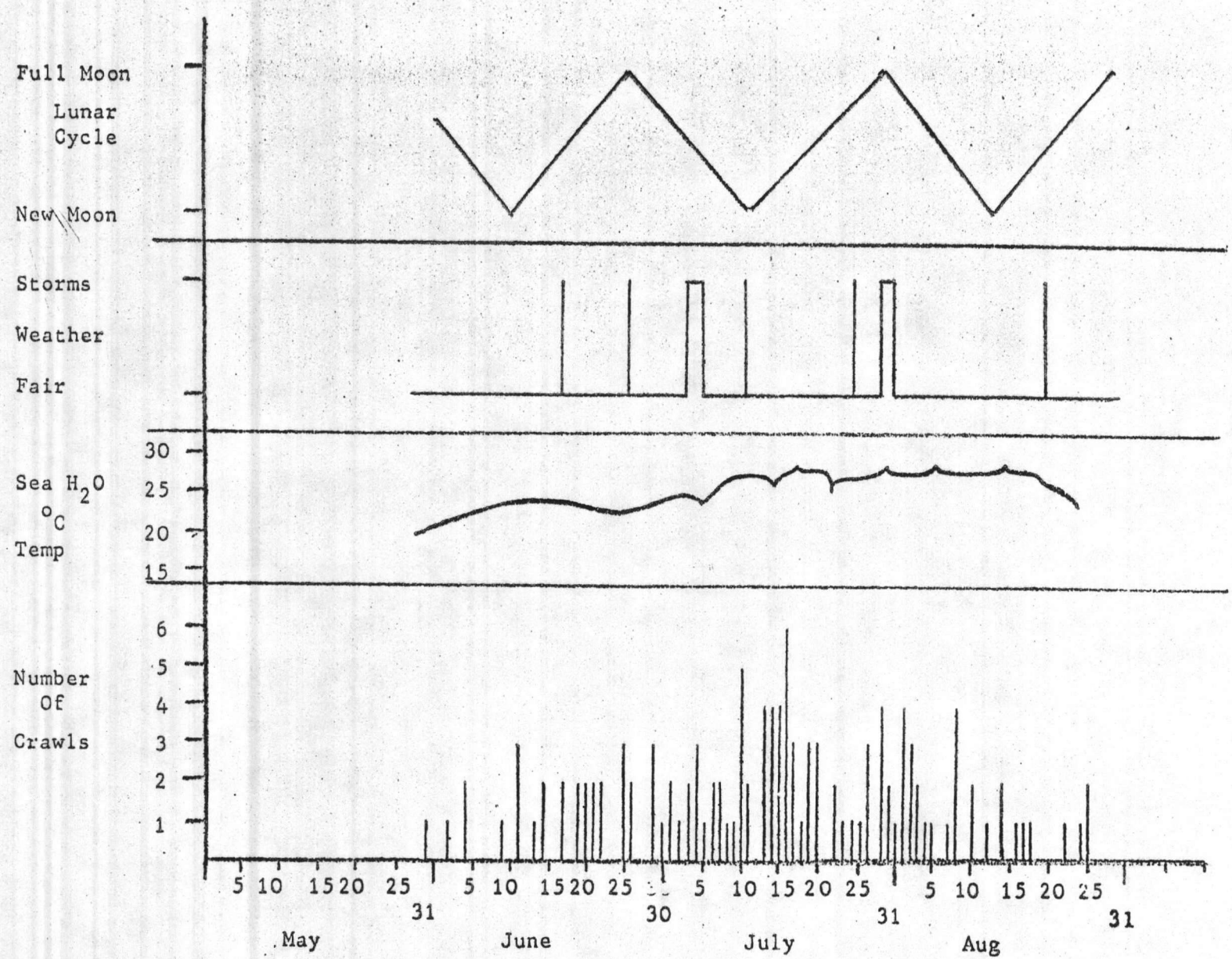
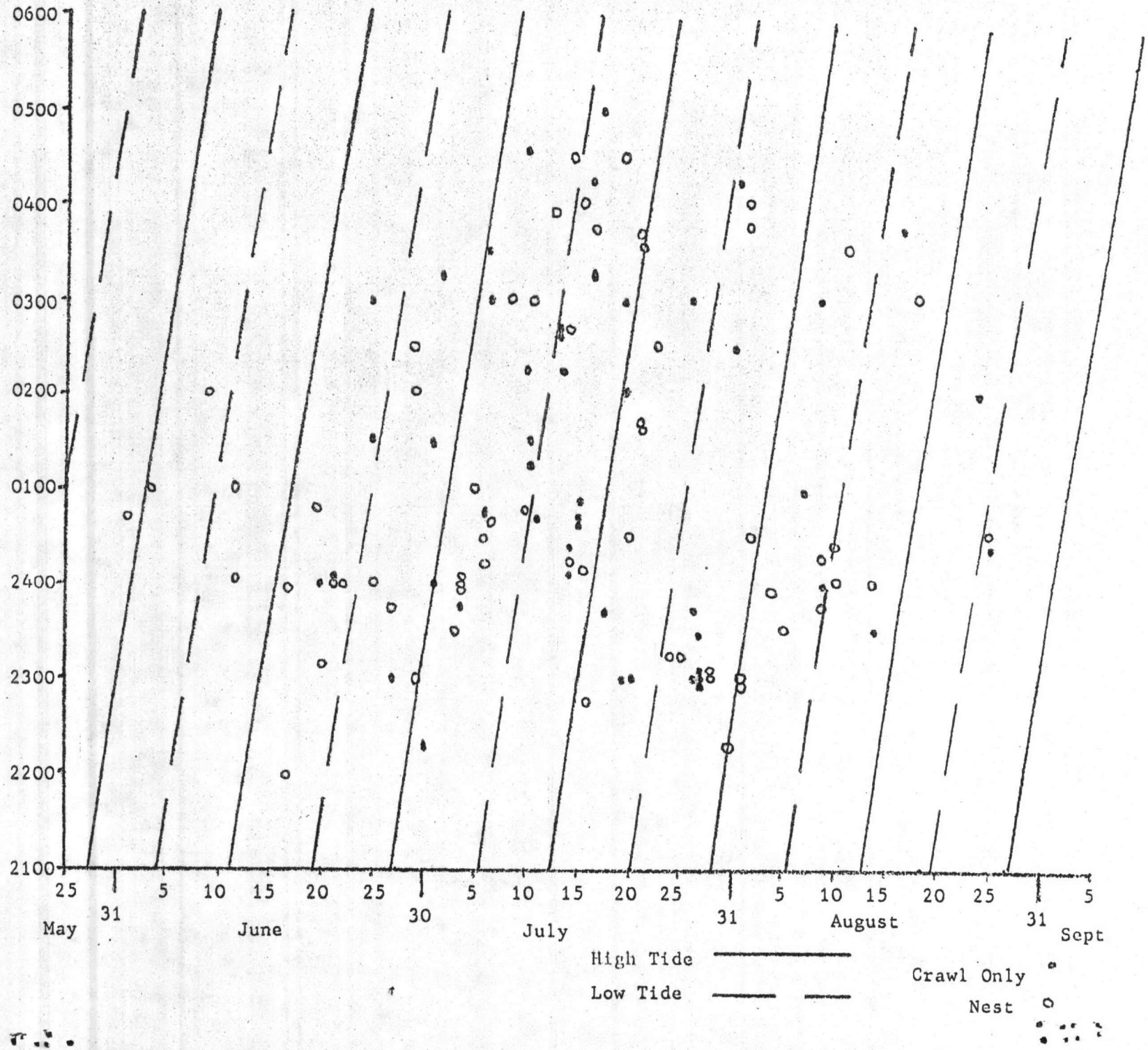
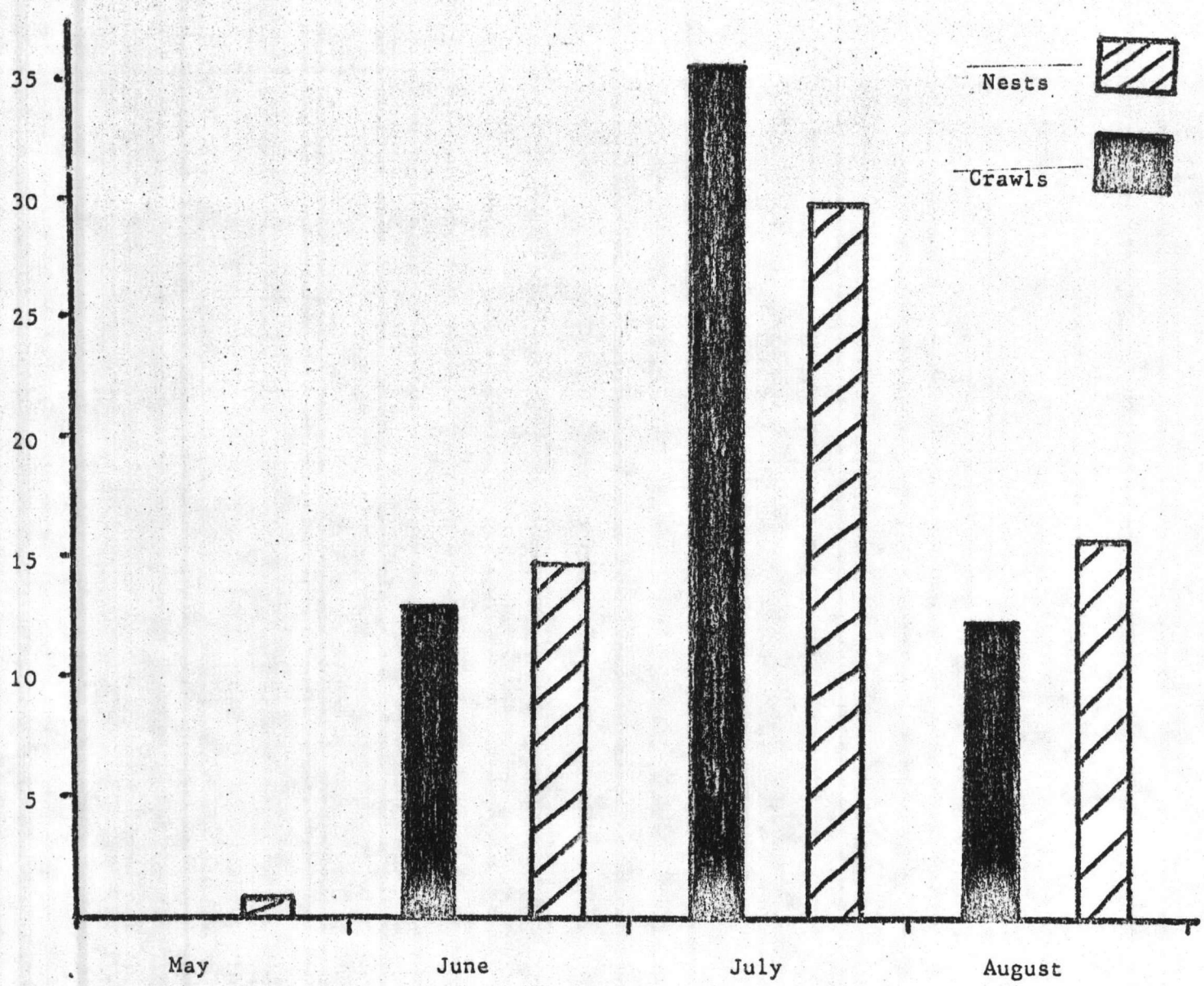
GRAPH I


Full Moon
Lunar Cycle
New Moon
Storms
Weather
Fair
30
25
20
15
Sea H_2O °C Temp
6
5
4
3
2
1
Number Of Crawls
5 10 15 20 25 31
5 10 15 20 25 30
5 10 15 20 25 31
5 10 15 20 25 31
May
June
July
Aug

GRAPH II NESTING IN RELATION TO TIME AND TIDAL CYCLE



GRAPH III TOTAL CRAWLS AND NEST BY MONTH 1980 NEST SEASON



GRAPH III

Total Crawls and Nest by Month 1980 Nest Season

SEA TURTLE INVENTORY

FOR

SUMMER AND FALL 1980

Natural Resources and Environmental Affairs Branch

Base Maintenance Division

Marine Corps Base

Camp Lejeune, North Carolina 28542

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INTRODUCTION

The Sea Turtle Inventory for 1980 is a continuation of past efforts by Marine Corps Base, Camp Lejeune, North Carolina to protect threatened Atlantic Loggerhead Sea Turtles. The program began in 1974 by the Marine Corps and Camp Lejeune biologists when evidence indicated that a high percentage of Atlantic Loggerhead nests on Onslow Beach were being destroyed by predators. This action was taken prior to the addition of the Atlantic Loggerhead Sea Turtle to the Endangered Species List, as threatened. The protection program to date has had three main objectices. First, for the compliance of the Endangered Species Act through Biological Opinions rendered by the U. S. Fish and Wildlife Service. Second, and probably the most important, conservation practices have been initiated to protect the turtles and their nests from predation. Third, has been to study the nesting habits of the Atlantic Loggerhead Sea Turtle (Caretta caretta).

There are several related projects that comprise the protection program. These include:

Nightly Beach Patrols	Aerial Surveys
Tagging Adult Turtles	Nesting and Hatching Success
Collection of Nesting Data	Occasional Hatchling Tagging
Insitu Weather Observations	Stranding Reports on Dead Turtles

The University of North Carolina Institute of Marine Sciences in Morehead City, North Carolina (IMS) assisted the Marine Corps in the turtle protection program. IMS provided tags for adult and hatchling turtles and assisted in the tagging process. Dr. Frank Schwartz of IMS is also a valuable source of information for the Camp Lejeune biologists.

In 1980, the Loggerhead program took on new dimensions when a Green Turtle (Chelonia mydas mydas) nested on Onslow Beach. The Green Turtle was observed nesting four times and is believed to have nested five times, since for one unobserved nest the crawl, nest, eggs and hatchlings were indicated of a Green Turtle.

RESULTS

The nesting season for 1980 began with the first nest on 30 May 1980 and ended with the last nest on 25 August 1980. There were a total of 125 crawls to nest on Onslow Beach of which 65 were successful. This compares closely to the data from the 1979 nesting season where 138 crawls and 63 successful nests were observed.

The rate of nest predation on Onslow Beach for the 1980 nesting season was zero. There were 37 nests, 35 loggerheads and 2 Green Turtles, protected by wire cages on Onslow Beach.

During the 1980 nesting season, a total of 36 turtles were tagged, One turtle had been tagged previously with Tag No. NC0001 and subsequently was not retagged by the Camp Lejeune technicians. Of the 36 tagged turtles, there were 29 return trips to the beach to lay (See Table III). One Loggerhead was observed laying 5 times at 12-13 day intervals. Four Loggerheads were observed 4 times. Three were observed 3 times, six turtles were observed 2 times and 23 were observed laying 1 time for a total of 59 sightings of tagged turtles. No turtles were observed on Onslow Beach that had been tagged on previous years. The Green Turtle was observed 4 times, retagged twice and is believed to have nested 5 times.

The Green Turtle nests produced 819 eggs of which 387 hatched for a 47.2% success rate. There were 2 deformed and 5 white (not albino) Green Turtle hatchlings from the 5 nests. Two of the Green Turtle nests were naturally incubated. Those nests contained 315 eggs of which 292 hatched for an 83.2% rate of hatchling success (See Table IV). The three remaining Green Turtle nests were taken to IMS where they were artifically incubated. Those nests contained 468 eggs, of which 95 hatched for a 20.3% rate of hatchling success (See Table VI).

Loggerhead nests produced 6,554 eggs total. Of the 6,554 eggs, 4,178 were allowed to hatch naturally, 3,467 of those eggs hatched for a 83% success rate (See Table IV). IMS artifically incubated 2,376 Loggerhead eggs of which 1,157 hatches for 48.7% success rate (See Table VI). Therefore, of 6,554 total Loggerhead Turtle eggs laid, 4,624 hatched for a 70.6% success rate. When Green and Loggerhead Turtle nests data are combined, a total of 7,373 eggs were laid of which 5,011 hatched for a

year's success rate of 67.96%. This overall success ate is better than the 1979 season success rate which was 57%.

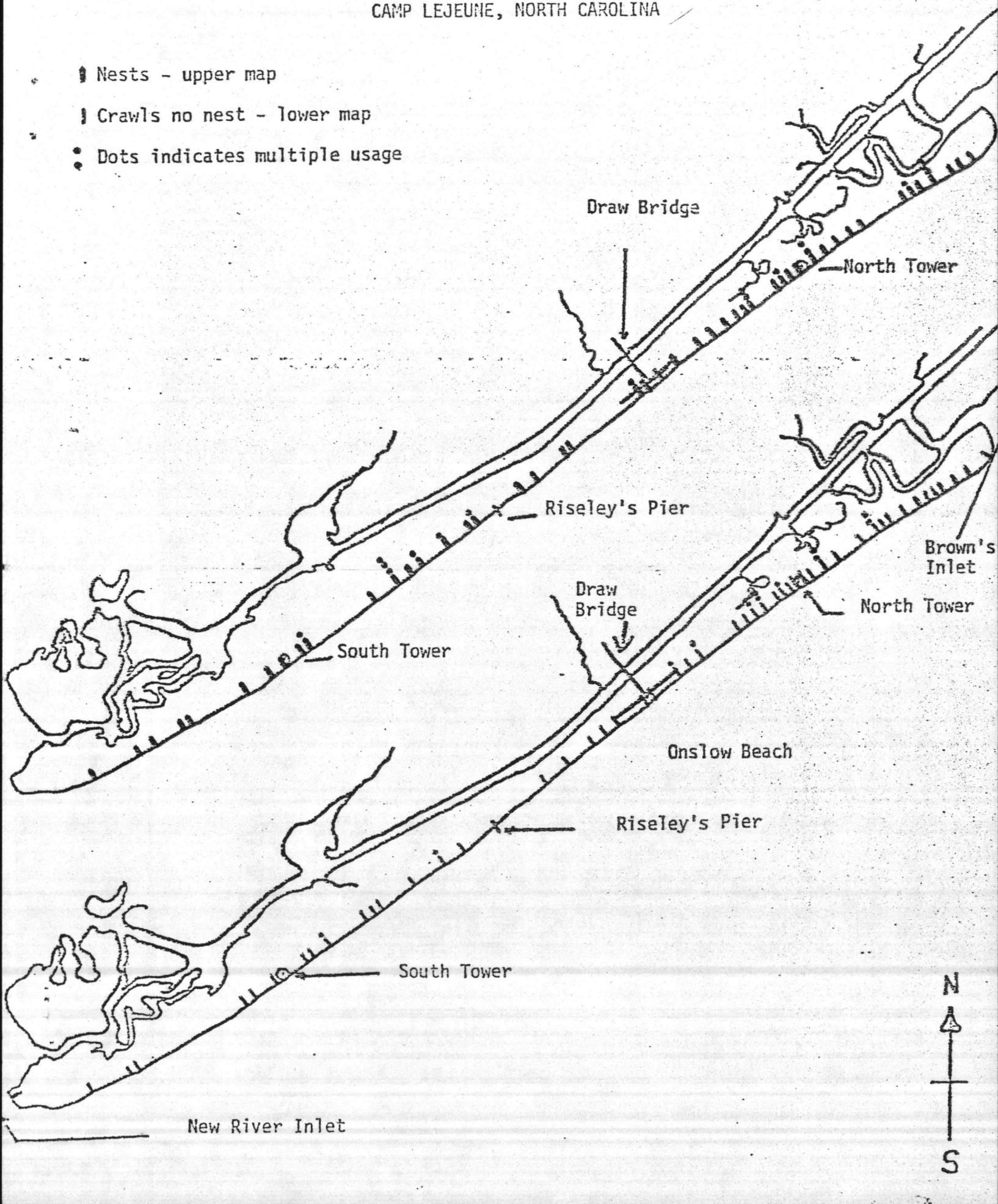
The Camp Lejeune Sea Turtle aerial surveillance flights covered beaches from New River Inlet to north to Bouge Inlet, which included Onslow Beach, Camp Lejeune, Brown's Island, Camp Lejeune and Bear Island (Hammock Beach State Park). Flight dates were scheduled such that they would fit in with the North Carolina to Louisiana surveys planned for 1980. The surveys were conducted from military helicopters piloted by Marine Corps personnel dispatched from Marine Corps Air Station, New River. Flights averaged 1 hour 15 minutes in duration and were flown at an altitude of 200 to 300 feet and a velocity of 30-60 knots. The return flights were flown approximately one half- one mile off the coast in an attempt to spot turtles in the water. A total of 12 flights were flown in sets of two at scattered intervals throughout the nesting period, for a total of 15 hours 35 minutes flight time. The number and location of all fresh nests and false crawls sighted were recorded along with the number and location of turtles observed offshore and of shrimping vessels within the survey data. Hammock Beach State Park personnel were notified in the event that nests and/or false crawls were sighted on their beach and written records of each flight were sent to State Fish and Wildlife personnel, Raleigh, North Carolina and Dr. F. J. Schwartz at IMS, Morehead City, North Carolina.

The Camp Lejeune Aerial Survey results (See Table III) are insignificant unless comparted to the overall aerial survey program for the East Coast, conducted by the U. S. Fish and Wildlife Service. Consequently, the discussion of the results will be held to a statement of total data taken. Observations were: 42 new nests, 18 false crawls, 10 swimming turtles and 30 shrimp boats within the survey bounds.

Questions concerning data contained in this report should be directed to the Commanding General, Marine Corps Base, Camp Lejeune, North Carolina - (Attention: Base Maintenance Division, Natural Resources and Environmental Affairs Branch).

MAP I

NEST AND CRAWL ACTIVITY
ONSLOW BEACH, MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA



MAP II

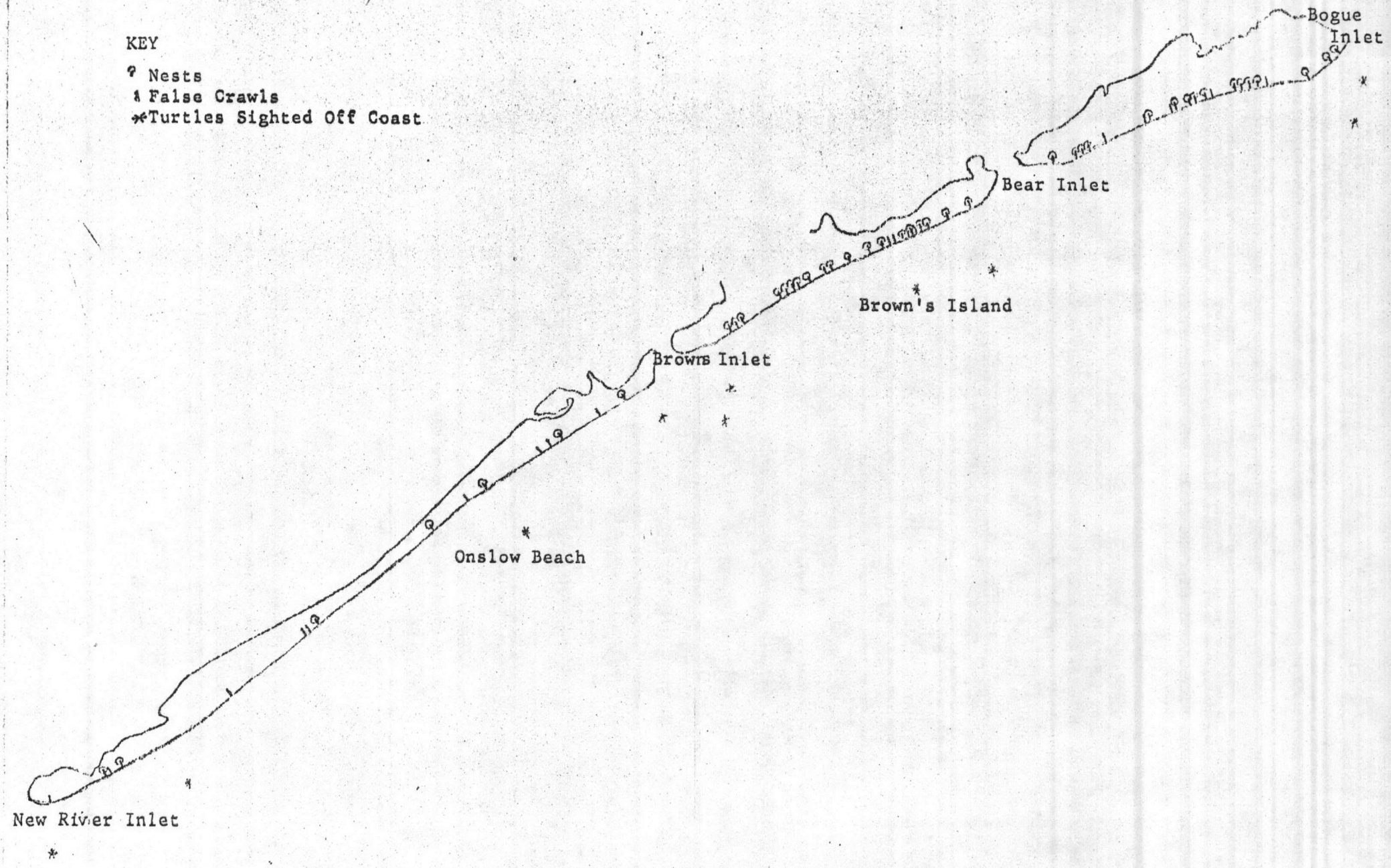

KEY
Nests
False Crawls
Turtles Sighted Off Coast
Bogue Inlet
Bear Inlet
Brown's Island
Browns Inlet
Onslow Beach
New River Inlet

TABLE I

CRAWL INFORMATION IN RELATION TO MOON AND TIDE CYCLES AND WEATHER CONDITIONS

(Nights handled as a whole not broken at midnight)

DATE Night of	Moon Rise % Illumin	Time of Hi Tide	Time Crawl W/O nest	Time Crawl W/ nest	Total	Weather	Temp H_2O	Temp Air
5-30-80		–		1	1	Clear Fair	20.5°C	19°C
5-31-80					0			
6-01-80	2151-95%	2130			0			
6-02-80	2241-90%	2216		1	1	Fair, Sctrd Clouds	22°C	21°C
6-03-80	2326-82%	2307			0			
6-04-80	0008-73%	0007	1	1	2	Fair Partly Cloudy	22°C	18.5°C
6-05-80	0047-63%	0103			0			
6-06-80	0125-51%	0207			0			
6-07-80	0203-40%	0311			0			
6-08-80	0242-29%	0412			0			
6-09-80	0323-19%	0512	1		1			
6-10-80	0407-11%	0607			0			
6-11-80	0455-05%	1835 0701 1926	1	2	3	Fair Partly Cloudy	24.9°C	–
6-12-80	0547-01%	0752			0			
6-13-80		2015	1		1			
6-14-80	0642-02%	2012	2		2			
6-15-80	0742-06%	2147			0			
6-16-80	0837-11%	2231			0			
6-17-80	0934-18%	2317		2100 2250	2	Fair Few Clouds	24°C	22°C
6-18-80	1030-27%	0005			0	Cool, Windy Cloudy	24°C	20°C
6-19-80	1125-36%	0053	2345	2345	2	Fair Clear	24.5°C	24°C
6-20-80	1219-45%	0144	2300	2210	2	Fair Cloudy	24°C	22.5°C
6-21-80	1313-55%	0237	2300	2300 2300	2			
6-22-80	1407-64%	0330		–	2			
6-23-80	1501-73%	0420			0	Fair	24°C	24°C
6-24-80	1558-81%	0508			0	Stormy	23°C	24°C

TABLE I

CRAWL INFORMATION IN RELATION TO MOON AND TIDE CYCLES AND WEATHER CONDITIONS

(Nights handled as a whole, not broken at midnight.)

DATE Night of	Moon Rise % Illumin	Time of Hi Tide	Time Crawl W/o nest	Time Crawl W/ nest	Total	Weather	Temp H_2O	Temp Air
6-25-80	1655-88%	0555 1819	0030 0200	2300	3	Partly Cloudy	24°C	23°C
6-26-80	1753-94% Full	0638 1901			0	Cloudy	24°C	23.5°C
6-27-80	1850-98%	0723	2200	2245	2	Fair & Clear	24°C	24°C
6-28-80	1945-100%	1943			0	Fair & Clear	24°C	26°C
6-29-80	2037-99%	2028		2200 0030 0100	3	Fair & Cloudy	25°C	26°C
6-30-80	2125-97%	2114	2115		1	Fair & Cloudy	24°C	22.5°C
7-1-80	2209-92%	2201	2300 0030		2	Fair & Clear	24°C	24°C
7-2-80	2249-85%	2251	0215		1	Fair & Clear	26°C	27°C
7-3-80	2328-75%	2346	2245	2230	2	Thunderstm Clearing 2400	24.5°C	23°C
7-4-80	0005-65%	0043		2300 2300 2300	3	Cloudy, Occ. Showers	24.5°C	24°C
7-5-80	0043-54%	0148		2400	1	Fair & Clear	26°C	26°C
7-6-80	0122-42%	0253	2345	2310 2330	3	Fair & Ptly Cloudy	26°C	26°C
7-7-80	0203-31%	0356	0200 0230	2340	3	Fair & Clear	24.5°C	26°C
7-8-80	0248-27%	0457		0200	1	Fair & Cloudy	26°C	26°C
7-10-80	0431-6%	1820 0645 1910	0015 0115 0030 0335	2345	5	ThundStm 2200 Clearing2400	26°C	23°C
7-11-80	0527-2%	0734	2340	0200	2	Fair & Clear	26.5°C	26°C
7-12-80	0624-0%	1957			0	Fair & Clear	26°C	27°C
7-13-80	- 1%	2038	0140 0115 0140	0250	4	Fair & Ptly Cloudy	26.5°C	24.5°C
7-14-80	0722-03%	2120	2320 2310	2315 0040	4	Fair & Clear	26°C	25°C
7-15-80	0819-08%	2201	2340 2340 2350	0330	4	Fair & Clear	25.5°C	25.5°C
7-16-80	0914-14%	2242	0215 0315	2145 2310 0300	5	Fair & Clear	26°C	26°C
7-17-80	1009-21%	2323	2240 0400	0245	3	Fair & In-crsg Clouds	27.5°C	26°
7-18-80	1103-29%	0006		0305	1	Fair & Ptly Cloudy	27°C	26°
7-19-80	1156-38%	0057	2200 0100 0200		3	Fair & Clear	27°C	27.5°C

TABLE I

CRAWL INFORMATION IN RELATION TO MOON AND TIDE CYCLES AND WEATHER CONDITIONS

(Nights handled as a whole, not broken at midnight.)

DATE Night of	Moon Rise % Illumin	Time of Hi Tide	Time Crawl W/O nest	Time Crawl W/ nest	Total	Weather	Temp H_2O	Temp Air
7-20-80	1250-48%	0149	2200	2330 0330	3	Fair & Clear	27°C	28.5°C
7-21-80	1345-57%	0241			0	Fair & Incrsg Cloudiness	27.5°C	27°C
7-22-80	1442-67%	0338		0040 0035	2	Fair & Cloudy	27°C	27°C
7-23-80	1539-76%	0431		0030	1	Rainy	25°C	25°C
7-24-80	1639-84%	0521		2215	1	Fair & Cloudy	26°C	26°C
7-25-80	1733-91%	0612		2215	1	Fair & CLoudy	26°C	26.5°C
7-26-80	1827-96%	1835 0658	2200 1835 0200		3	2200-2400 Rainy 0200 Thundstms	26°C	24.5°C
7-27-80	1917-99%	1922 0745	2200 2210 2200 2230		4	Heavy Rain	-	-
7-28-80	Full 2004-100%	2009		2210 2210	2	Cloudy	27°C	26°C
7-29-80	2047-98%	2054			0	Partly Cloudy	27°C	25°C
7-30-80	2128-93%	2144		2120	1	Fair & Clear	27°C	26°C
7-31-80	2206-86%	2233	0130		1	Fair & Clear	27.5°C	27.5°C
8-01-80	2224-77%	2328	0315	2200 2200 0245	4	2000-2200 Thunderstorm 2400 Clearing	27°C	26.5°C
8-02-80	2323-67%	0026		2330 0245 0300	3	Fair & Clear	27°C	28°C
8-03-80	0003/44%	0129	2		2		-	-
8-04-80	0047-33%	0235		2250	1	Partly Cloudy	27°C	28°C
8-05-80	0134-23%	0343		2230	1	Clear	27.5°C	28°C
8-06-80	0224-15%	0444			0	Clear	27°C	28°C
8-07-80	0318-8%	0540	2400		1	Partly Cloudy	27°C	26.5°C
8-08-80	0414-3%	1806 0630	2300 0200	2245 2315	4	Fair & Clear	27°C	27.5°C
8-09-80	0511-1%	1852 0715			0			
8-10-80	0608-0%	1934 0758		2	2			
8-11-80	- -	2013			0	Fair & Clear	27°C	27.5°C
8-12-80	0705-1%	2052		0230	1	Cloudy	27°C	27°C

TABLE I

CRAWL INFORMATION IN RELATION TO MOON AND TIDE CYCLES AND WEATHER CONDITIONS

(Nights handled as a whole not broken at midnight)

Date Night of	Moon Rise % Illumin	Time of Hi Tide	Time Crawl W/O nest	Time Crawl W/ nest	Total	Weather	Temp H_2O	Temp Air
8-13-80	0800-5%	2129			0	Fair & Clear	27°C	28°C
8-14-80	0854-10%	2206	2230	2300	2	Fair & Clear	27°C	28°C
8-15-80	0948-16%	2243			0	Clear & Windy	27.5°C	26.5°C
8-16-80	1041-23%	2323		1	1			
8-17-80	1135-32%	0010	0245		1	Cool & Cloudy	27°C	22°C
8-18-80	1230-41%	0100		0200	1	Thunderhd moving in Cloudy	26°C	23°C
8-19-80	1326-51%	0158			0	Cloudy	25.5°C	25°C
8-20-80	1422-60%	0258			0			
8-21-80	1518-70%	0356			0			
8-22-80	1613-79%	0258	1		1	Fair & Clear	25°C	23°C
8-23-80	1705-87%	0356						
8-24-80	1754-94%	0452	0100		1	Fair & Clear	23°C	19°C
8-25-80	1839-98%	0543 1721	between 2200-2400	between 2200-2400	2	Fair & Clear	23°C	19°C
8-26-80	1922-100%	0634 1859						
8-27-80	2002-99%	0723 1948						
8-28-80	2042-95%	0812						
8-29-80	2121-88%	2036						
8-30-80	2202-80%	2125						
8-31-80	2245-69%	2216						

TABLE II
RETURN RECORD OF TAGGED TURTLES

1980 SEA TURTLE INVENTORY

DATES 6/17/80 - 8/9/80

Date	Tag #	Return	Return	Return	Return
6/17/80	651				
6/17/80	652	7/3/80 ⊗	7/16/80	7/28/80	
6/19/80 ⊗	653				
6/19/80	654				
6/20/80	655	7/3/80 ⊗	7/15/80 ⊗ Retag 640	7/28/80	8/8/80
Green					②
6/25/80	657*	7/9/80 Retag 669	7/21/80 Retag 649	8/2/80	8/17/80
6/26/80 ⊗	NC0001	7/11/80 ⊗	7/24/80		
6/27/80 ⊗	648	7/24/80			
6/27/80	658				
6/29/80	650	7/12/80			
6/29/80	659				
6/30/80	660	7/14/80 ⊗ Retag 672	7/16/80	8/1/80	
7/1/80 ⊗	661	7/14/80	7/26/80 ⊗	8/8/80	
7/3/80	662				
7/6/80	663				
7/6/80 ⊗	664				
7/7/80	667	8/18/80 ⊗	8/20/80		
7/8/80 ⊗	665				
7/8/80 ⊗	666				
7/10/80 ⊗	670	7/23/80			
7/11/80 ⊗	671				
7/14/80	673				
7/14/80 ⊗	674				
7/15/80	675				
7/17/80	641				
7/17/80 ⊗	642	7/18/80			
7/18/80 ⊗	647	7/20/80	8/2/80		
7/19/80	645				
7/23/80	646				
7/25/80	644				
7/30/80	633				
8/1/80 ①	639	8/14/80			
8/3/80	638				
8/4/80	634				
8/5/80	637				
8/7/80 ⊗	636	8/12/80			
8/9/80 ⊗	635				

⊗ - Turtle was tagged but did not nest.

① - Turtle previously tagged but tag missing - tag hole present

② - Crawl body pit and eggs indicative of Green Turtle but turtle not observed

Tagged or

1 Turtle observed 5 times; 4 turtles observed 4 times; 3 turtle observed 3 times; 6 turtles observed 2 times; 23 turtles observed 1 time

TABLE III

AERIAL SURVEY

	May 30				May 31			
	N	FC	T	SB	N	FC	T	SB
Onslow Beach	1	0	0	2	0	0	0	1
Brown's Island	0	2	0	1	0	0	0	2
Bear Island	0	0	0	0	2	0	0	0

	June 13				June 14			
	N	FC	T	SB	N	FC	T	SB
Onslow Beach	0	1	2	1	0	1	0	3
Brown's Island	0	0	0	0	0	0	1	1
Bear Island	1	0	0	0	0	0	0	3

	July 1				July 2				July 11				July 12				July 21			
	N	FC	T	SB	N	FC	T	SB	N	FC	T	SB	N	FC	T	SB	N	FC	T	SB
Onslow Beach	0	0	0	0	0	2	0	0	1	3	2	0	1	1	0	2	1	0	0	1
Brown's Island	0	0	1	0	5	1	0	0	0	0	0	1	3	0	0	1	4	1	2	1
Bear Island	2	0	2	0	2	2	0	0	0	0	0	0	1	0	0	2	4	1	0	0

	Aug 1				Aug 11				Aug 12			
	N	FC	T	SB	N	FC	T	SB	N	FC	T	SB
Onslow Beach	0	1	0	1	2	0	0	0	1	0	0	2
Brown's Island	2	0	0	2	3	0	0	1	2	0	0	1
Bear Island	1	0	0	0	2	0	0	0	1	2	0	1

TOTAL

	N	FC	T	SB
Onslow Beach	7	9	4	13
Brown's Island	19	4	4	11
Bear Island	16	5	2	6
	42	18	10	30

Key N - Fresh Nests
FC - Fresh False Crawls
T - Turtles sighted off coast
SB - Shrimp Boats

TABLE IV

SEA TURTLE INVENTORY
(Hatching Success)
Marine Corps Base
Camp Lejeune, North Carolina 1980

*Green Turtle

Nest No.	Incubation Period DAYS	Total Eggs	Released Young	Emerged Young	Total Young	Percent of Success
001	65	115	67	39	106	92.2%
002	63	166	158	3	161	97 %
003	63	134	4	69	73	54.5%
006 IMS	69	53	24	—	24	45.3%
007	—	126	0	0	0	0
012	65	102	81	4	85	83.3%
013	64	175	4	119	123	70.3%
015	63	134	0	128	128	95.5%
016 IMS		121				
018 IMS		101				
019	64	86	6	75	81	94.2%
021	63	143	0	114	114	79.7%
* 022	56	168	148	0	148	88.1%
026	60	100	0	91	91	91 %
027	59	72	0	71	71	98.6%
028 IMS		119				
029	60	113	0	78	78	69 %
034	60	127	25	21	46	36.2%
036	60	152	53	56	109	71.7%
037	59	116	4	89	93	80.2%
038	59	131	8	75	83	63.4%
039	60	167	161	0	161	96.4%
040	62	131	125	4	129	98.5%
042	59	78	7	58	65	83.3%
043	62	99	98	0	98	99.9%
046	58	183	144	0	144	78.7%

SEA TURTLE INVENTORY
(Hatching Success)
Marine Corps Base
Camp Lejeune, North Carolina

1980

Nest No.	Incubation Period	Total Eggs	Released Young	Emerged Young	Total Young	Percent of Success
104 IMS	0	1	0	0	0	0
107 IMS		179				
108 IMS		134				
110 IMS		104				
112 IMS		104				
114 IMS		120				
115 IMS		80				
116 IMS		83				
118 IMS		112				
*119 IMS		145				
121 IMS		75				
125 IMS		99				
	TOTALS					
64		7352				
26 IMS		2823				
37 O B		4529				
GREEN TURTLE		819	(11.14% OF TOTAL)			

SEA TURTLE INVENTORY
(Hatching Success)
Marine Corps Base
Camp Lejeune, North Carolina

1980

Nest No.	Incubation Period	Total Eggs	Released Young	Emerged Young	Total Young	Percent of Success
048 IMS		124				
054	59	89	64	23	87	97.8%
058	58	109	51	55	106	97.2%
059	59	118	13	99	112	94.9%
062	58	97	3	91	94	96.9%
066	57	131	27	80	117	89.3%
067	63	99	0	88	88	88.9%
069	60	131	109	0	109	83.2%
072 IMS		123				
073	60	119	2	112	114	95.8%
075	60	160	4	154	158	98.75%
080		117	0	101	101	86.3%
*081 IMS		166				
082 IMS		96				
083		134				
084	59	116	4	106	110	94.8%
085	61	114	0	111	111	97.4%
086		89				
094 IMS		132				
095 IMS		102				
096		88	0	74	74	84.1%
098 IMS		114				
099 IMS		78				
*100 IMS		157				
102 IMS		114				
103 IMS		78				

Camp Lejeune 1980 Nests Incubated at Institute of Marine Sciences
26 Nests (3 of which were green)

Date Lain	Number Lain	Number Hatched	% Hatch	Locality
11 June	54	24	44.4	0.15 mi S. Risley Pier
20 June	121	82	68.1	0.6 mi S. Risley Pier
22 June	101	87	86.1	2.7 mi N. Risley Pier Sheet 16
29 June	117	26*	22.2	1.0 mi S. Risley Pier Sheet 16
10 July	119	0	0.0	Nest 048 - all infertile
17 July	120	43**	26.7	0.8 mi S. Risley Pier Grid 843254
21 July	166	1	.006	green turtles
20 July	96	94	98.0	0.8 mi S. Risley Pier Grid 892255
28 July	128	52	40.6	0.4 mi S. Risley Pier Grid 897258
28 July	101	11	10.9	0.8 mi S. Risley Pier Grid 892255
2 Aug	157	32	20.4	Nest 100 Grid 916275 - green turtles
1 Aug	75	68	90.7	Nest 099 Grid 894257
1 Aug	114	39	34.2	Nest 098 Grid 917275
2 Aug	114	61	53.5	Grid 933276
3 Aug	68	12	17.7	Grid 897258
4 Aug	179	63	35.2	Grid 952298 - Tag 634
5 Aug	132	1	0.75	Nest 108 - Tag 637
8 Aug	82	50	60.9	Nest 110 renest 661 - Grid 932286
8 Aug	103	99	96.1	Nest 112 renest 640 - Grid 882245
10 Aug	118	56	46.6	Nest 114 Grid 922279, 1.7 mi N. Risley Pier
10 Aug	71	65	91.4	Nest 115 Grid 871238, renest 645
12 Aug	82	76	92.7	Nest 116 2.1 mi N. Risley Pier - Grid 928284
14 Aug	110	54	49.1	Nest 118 retag 639 1.53
17 Aug	145	62	42.8	Nest 119 Grid 925281, 1.9 mi N. Risley Pier green turtles
20 Aug	73	38	52.1	3.4 mi N. Risley Pier - Grid 946295, Tag 667
26 Aug	98	56	57.2	Camp Lejeune
	2,844	1,252	44.0	Total Green and Loggerhead
	2,426	1,157	47.7	Total Loggerhead
	418	95	22.7	Total Green

Total Released - 1,581
" Loggerhead - 1,329 84.1%
" Green - 89 93.8%

1979 Camp Lejeune Data - 21 Nests (all loggerheads)

Total Eggs Lain	Hatched	%	Released	%
2,572	1,378	53.6	1,357	98.5

% Hatch Ranged: 0.8-99.2

*67 others developed but did not hatch.
**44 others developed but did not hatch.

TABLE V

Ground Survey Numbers

Date	Crawls No Nest	Crawls/Nest	Total Crawls
5-30-80		1	1
6-2-80		1	1
6-4-80	1	1	2
6-9-80	1		1
6-11-80	1	2	3
6-13-80	1		1
6-14-80	2		2
6-17-80		2	2
6-19-80	1	1	2
6-20-80	1	1	2
6-21-80	1	1	2
6-22-80		2	2
6-25-80		1	1
6-26-80	2		2
6-27-80	1	1	2
6-29-80		2	2
6-30-80	1	1	2
7-1-80	1		1
7-2-80	1		1
7-3-80	2	1	3
7-4-80		3	3
7-5-80		1	1
7-6-80	1	2	3
7-7-80		1	1
7-8-80	2		2
7-9-80		1	1
7-10-80	1	1	2
7-11-80	5		5
7-12-80		1	1
7-14-80	5	2	7
7-15-80	3	1	4
7-16-80		3	3
7-17-80	3	1	4
7-18-80	1	1	2
7-19-80	1	1	2
7-20-80	3	1	4
7-21-80		1	1
7-23-80		2	2
7-24-80		2	2
7-25-80		1	1
7-26-80	2		2
7-27-80	5		5
7-28-80		2	2
7-30-80		1	1

TABLE V Cont'd

Ground Survey Numbers

Date	Crawls No Nest	Crawls/Nest	Total Crawls
8-1-80	1	2	3
8-2-80	1	2	3
8-3-80	2	2	4
8-4-80		1	1
8-5-80		1	1
8-7-80	1		1
8-8-80	1	2	3
8-9-80	1		1
8-10-80		2	2
8-12-80		1	1
8-14-80	1	1	2
8-15-80			0
8-16-80			0
8-17-80		1	1
8-18-80	1		1
8-19-80			0
8-20-80			0
8-21-80			0
8-22-80	1		1
8-23-80			0
8-24-80	1		1
8-25-80	1	1	2
8-26-80			0
8-27-80			0
8-28-80			0
8-29-80			0
8-30-80			0

TABLE VI

Camp Lejeune 1980 Nests Incubated at Institute of Marine Sciences
26 Nests (3 of which were green)

Date Lain	Number Lain	Number Hatched	% Hatch	Locality
11 June	54	24	44.4	0.15 mi S. Risley Pier
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2 Aug	157	32	20.4	Nest 100 Grid 916275 - green turtles
1 Aug	75	68	90.7	Nest 099 Grid 894257
1 Aug	114	39	34.2	Nest 098 Grid 917275
2 Aug	114	61	53.5	Grid 933276
3 Aug	68	12	17.7	Grid 897258
4 Aug	179	63	35.2	Grid 952298 - Tag 634
5 Aug	132	1	0.75	Nest 108 - Tag 637
8 Aug	82	50	60.9	Nest 110 renest 661 - Grid 932286
8 Aug	103	99	96.1	Nest 112 renest 640 - Grid 882245
10 Aug	118	56	46.6	Nest 114 Grid 922279, 1.7 mi N. Risley Pier
10 Aug	71	65	91.4	Nest 115 Grid 871238, renest 645
12 Aug	82	76	92.7	Nest 116 2.1 mi N. Risley Pier - Grid 928284
14 Aug	110	54	49.1	Nest 118 retag 639 1.53
17 Aug	145	62	42.8	Nest 119 Grid 925281, 1.9 mi N. Risley Pier green turtles
20 Aug	73	38	52.1	3.4 mi N. Risley Pier - Grid 945295, Tag 667
26 Aug	98	56	57.2	Camp Lejeune
	2,844	1,252	44.0	Total Green and Loggerhead
	2,426	1,157	47.7	Total Loggerhead
	418	95	22.7	Total Green

Total Released - 1,581
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Total Eggs Lain	Hatched	%	Released	%
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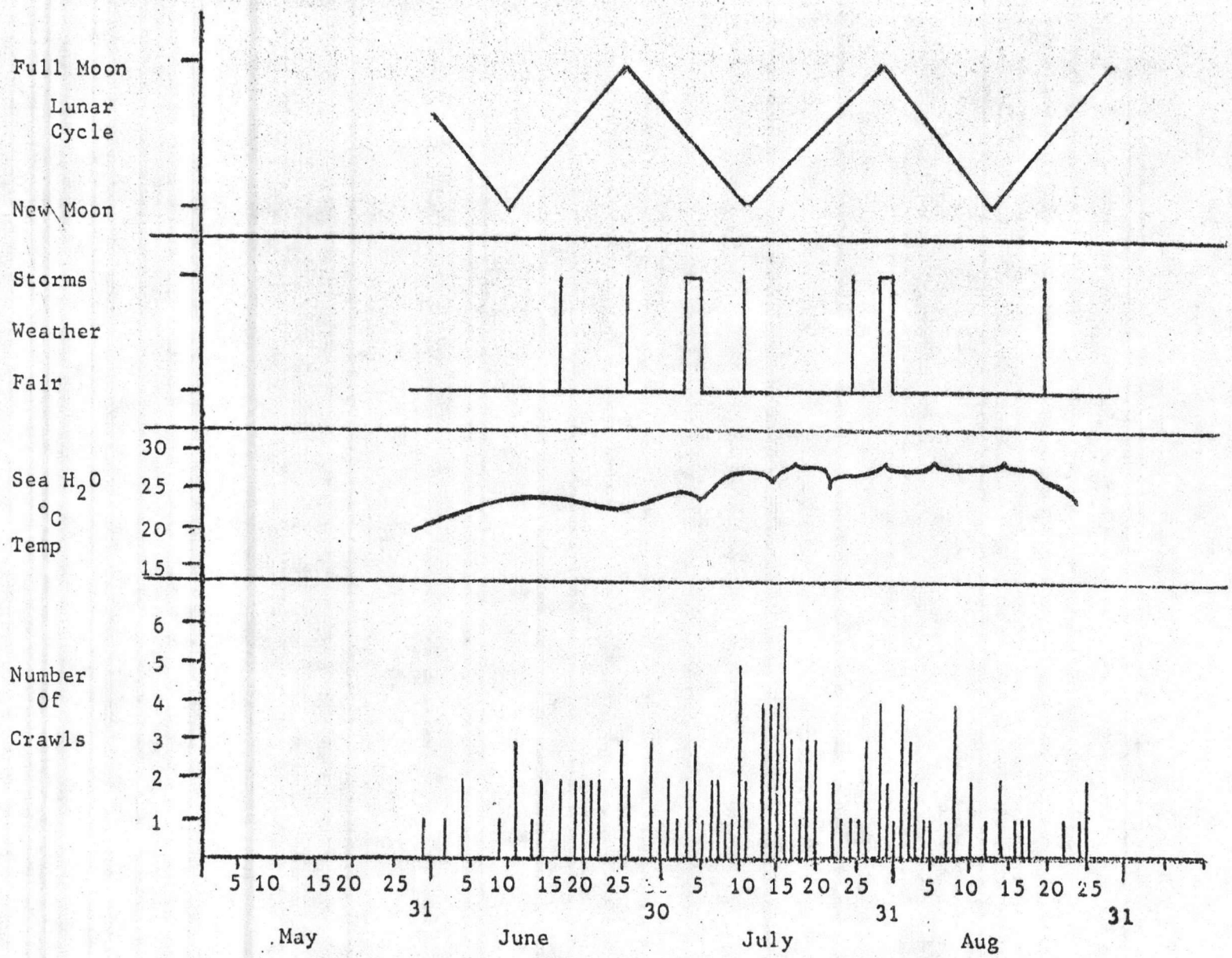
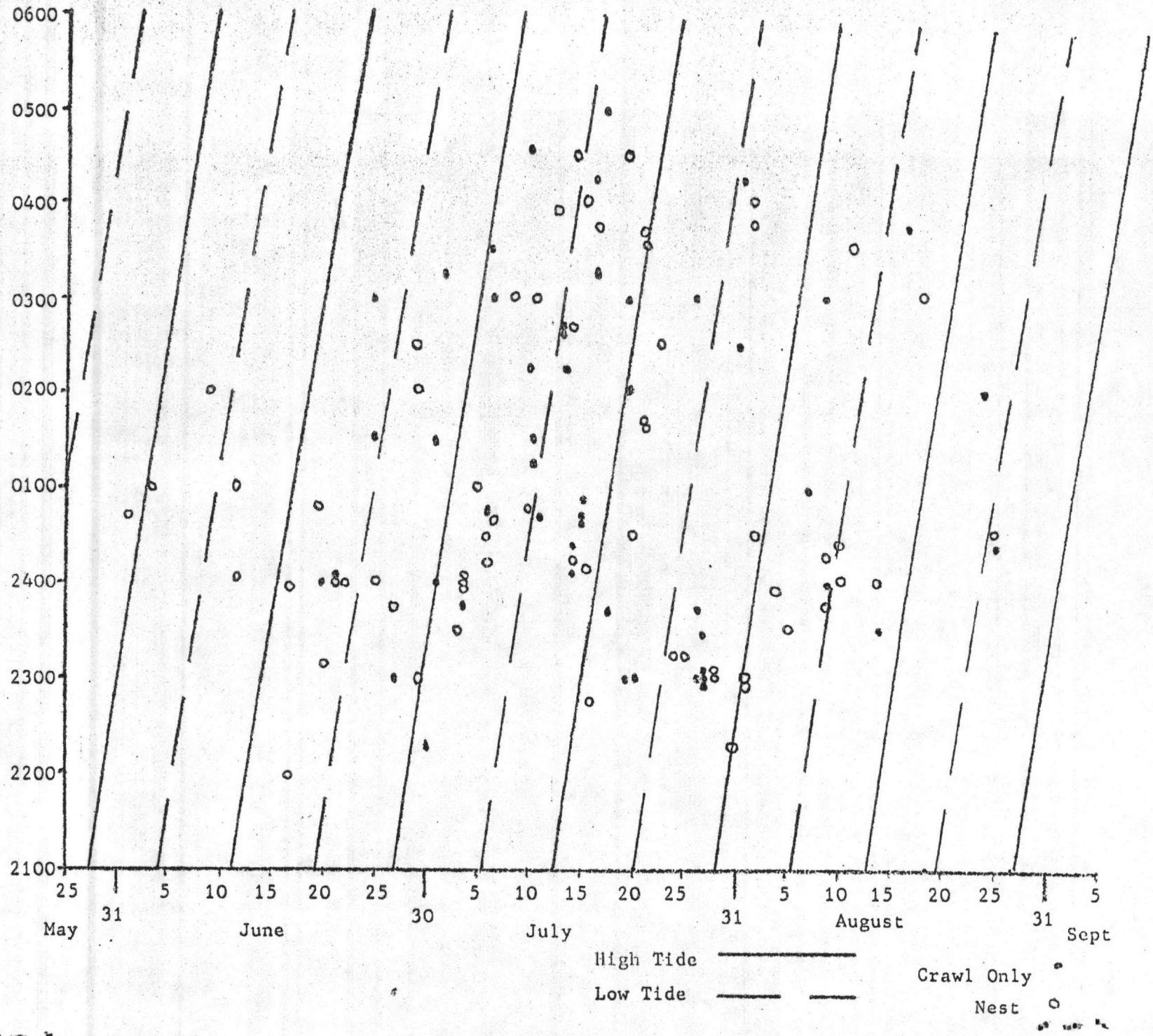
% Hatch Ranged: 0.8-99.2

*67 others developed but did not hatch.
**44 others developed but did not hatch.

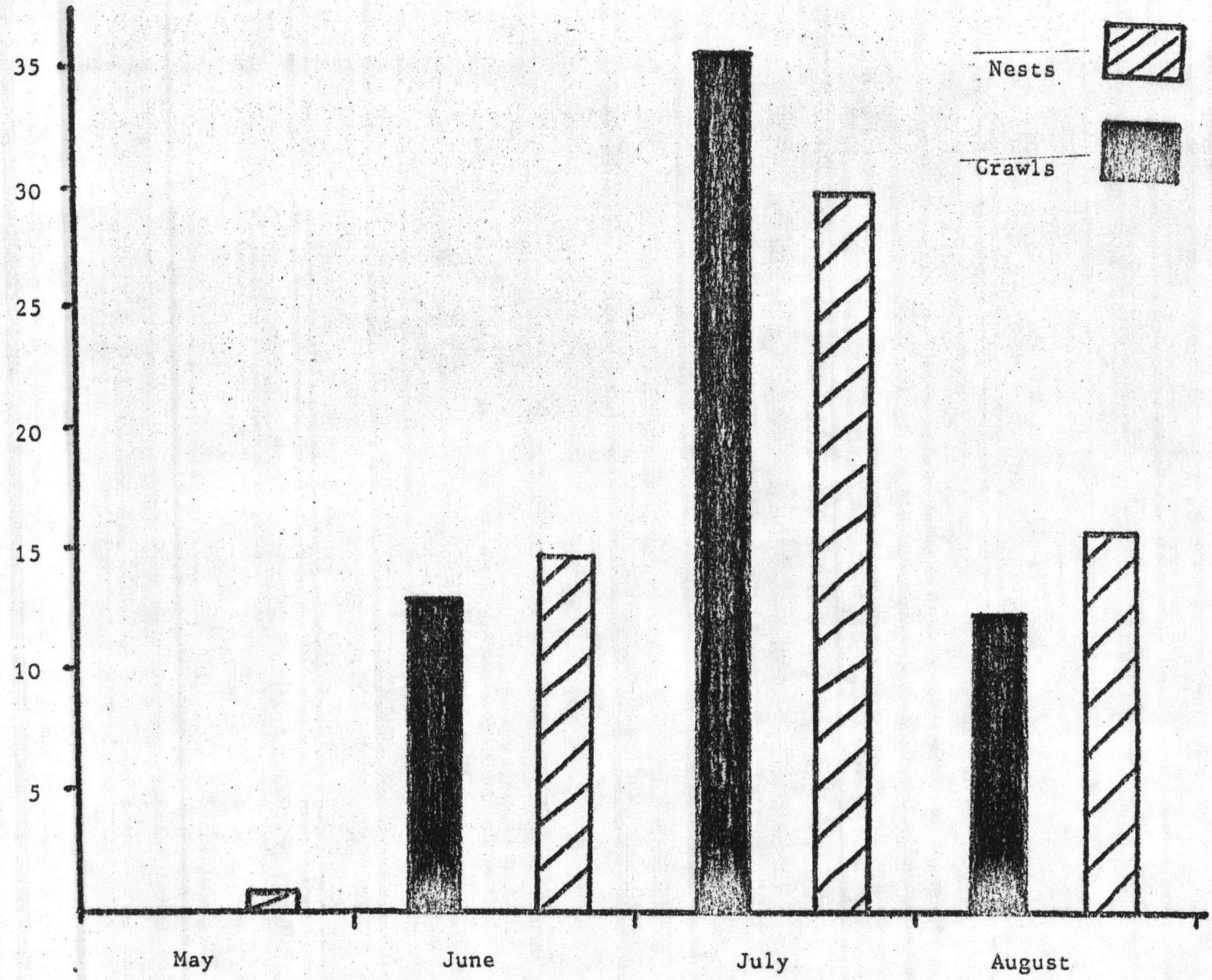
GRAPH I


Full Moon
Lunar Cycle
New Moon
Storms
Weather
Fair
Sea H_2O °C Temp
30
25
20
15
Number Of Crawls
6
5
4
3
2
1
5 10 15 20 25 31
5 10 15 20 25 30
5 10 15 20 25 31
5 10 15 20 25 31
May
June
July
Aug

GRAPH II NESTING IN RELATION TO TIME AND TIDAL CYCLE



GRAPH III TOTAL CRAWLS AND NEST BY MONTH 1980 NEST SEASON



GRAPH III

Total Crawls and Nest by Month 1980 Nest Season

TABLE II

RETURN RECORD OF TAGGED TURTLES

1980 SEA TURTLE INVENTORY

DATES 6/17/80 - 8/9/80

Date	Tag #	Return	Return	Return	Return
6/17/80	651				
6/17/80	652	7/3/80 ⊗	7/16/80	7 / 28/80	
6/19/80 ⊗	653				
6/19/80	654				
6/20/80	655	7/3/80 ⊗	7/15/80 ⊗ Retag 640	7/28/80	8/8/80
Green 6/25/80	657*	7/9/80 Retag 669	7/21/80 Retag 649	8/2/80	(2) 8/17/80
6/26/80 ⊗	NC0001	7/11/80 ⊗	7/24/80		
6/27/80 ⊗	648	7/24/80			
6/27/80	658				
6/29/80	650	7/12/80			
6/29/80	659				
6/30/80	660	7/14/80 ⊗ Retag 672	7/16/80	8/1/80	
7/1/80 ⊗	661	7/14/80	7/26/80 ⊗	8/8/80	
7/3/80	662				
7/6/80	663				
7/6/80 ⊗	664				
7/7/80	667	8/18/80 ⊗	8/20/80		
7/8/80 ⊗	665				
7/8/80 ⊗	666				
7/10/80 ⊗	670	7/23/80			
7/11/80 ⊗	671				
7/14/80	673				
7/14/80 ⊗	674				
7/15/80	675				
7/17/80	641				
7/17/80 ⊗	642	7/18/80			
7/18/80 ⊗	647	7/20/80	8/2/80		
7/19/80	645				
7/23/80	646				
7/25/80	644				
7/30/80	633				
8/1/80 (1)	639	8/14/80			
8/3/80	638				
8/4/80	634				
8/5/80	637				
8/7/80 ⊗	636	8/12/80			
8/9/80 ⊗	635				

⊗ - Turtle was tagged but did not nest.

(1) - Turtle previously tagged but tag missing - tag hole present

(2) - Crawl body pit and eggs indicative of Green Turtle but turtle not observed

Tagged or

1 Turtle observed 5 times; 4 turtles observed 4 times; 3 turtle observed 3 times; 6 turtles observed 2 times; 23 turtles observed 1 time

61 sightings of tagged turtles

SEA TURTLE INVENTORY
(Hatching Success)
Marine Corps Base
Camp Lejeune, North Carolina

1980

Table 4

*- Green Turtle

Nest No.	Incubation Period Days	Total Eggs	Released Young	Emerged Young	Total Young	Percent of Success
2.4(S) 001	5-30 8-3-80 65 62-66	115	67	39	106	92.2%
3.1(S) 002	6-2 8-4-8 63 60-65	166	158	3	161	97%
2.3(N) 003	6-4 8-6-80 63 60-65	134	4	69	73	54.5%
006 IMS	6-11 8-19 69 68-70	~~60~~ 53	24	—	24	45.3%
2.6(N) 007	6-11 (INUNDATED) — ALL EGGS ROTTEN	126	0	0	0	0
3.0(N) 012	6-17 8-21 65 63-69	102	81	4	85	83.3%
2.5(N) 013	6-17 8-20 64 61-65	175	4	119	123	68%
2.1(N) 015	6-19 8-21 63 61-65	134	0	128	128	95.5%
016 IMS	6-20	121	—	—	82	68.1
018 IMS	6-22	101	—	—	87	86.1
2.7(N) 019	6-21 8-24 64 62-66	86	6	75	81	92.6%
3.5(N) 021	6-22 8-24 63 61-65	143	0	114	114	79.7%
* 2.1(N) R 022	6-25 8-20 56 54-58	168	148	0	148	88.1%
1.7(S) 026	6-27 8-26 60 58-61	100	0	91	91	91%
0.2(N) 027	6-29 8-29 59	72	0	71	71	98.6%
028 IMS	6-29	~~119~~ 117	—	—	26	22.2
1.5(N) 029	6-30 8-28 60	113	0	78	78	69%
3.3(N) 034	7-3 9-1 60	127	25	21	46	36.2%
3.35(N) 036	7-4 9-2 60	152	53	56	109	71.7%
0.1(N) 037	7-4 9-1 59	116	4	89	93	80.2%
1.8(S) 038	7-4 9-1 59	131	8	75	83	63.4%
2.6(N) 039	7-5 9-3 60	167	161	0	161	96.4%
2.0(N) 040	7-6 9-6 62	131	125	4	129	98.5%
3.65(N) 042	7-6 9-3 59	78	7	58	65	83.33%
2.6(N) 043	7-7 9-6 62	99	98	0	98	99.9%
* 2.1(N) R 046	7-9 9-5 58	183	144	0	144	78.7%
		3219			1895 LOGGERHEADS	FROM NESTS ON BEACH

SEA TURTLE INVENTORY
(Hatching Success)
Marine Corps Base
Camp Lejeune, North Carolina

1980

Nest No.	Incubation Period	Total Eggs	Released Young	Emerged Young	Total Young	Percent of Success
104 IMS	0	1 (ROTTEN)	0	0	0	0
107 IMS	8-4	179			63	35.2
108 IMS	8-5	~~134~~ 132			1	0.75
110 IMS	8-8	~~104~~ 82			50	60.9
112 IMS	8-8	~~104~~ 103			99	96.1
114 IMS	8-10	~~120~~ 118			56	46.6
115 IMS	8-10	~~80~~ 71			65	91.4
116 IMS	8-12	~~83~~ 82			76	92.7
118 IMS	8-14	~~112~~ 110			54	49.1
* 119 IMS	8-17	145			62	42.8
121 IMS	8-20	~~75~~ 73			38	52.1
125 IMS	8-25	~~99~~ 98			56	57.2
		1236				
						1 Cogs

Totals

all nests Ims, Green, Beach	7373			5011	67.96%
Ims only Lghd	2376			1157	48.7%
Green	468			95	20.3%
Loggerhead on Beach	4178			3467	83%
Green	315			292	83.2%
				1348	

SEA TURTLE INVENTORY
(Hatching Success)
Marine Corps Base
Camp Lejeune, North Carolina

1980

Nest No.	Incubation Period	Total Eggs	Released Young	Emerged Young	Total Young	Percent of Success
104 IMS	0	1 (ROTTEN)	0	0	0	0
107 IMS	8-4	179			63	35.2
108 IMS	8-5	~~134~~ 132			1	0.75
110 IMS	8-8	~~104~~ 82			50	60.9
112 IMS	8-8	~~104~~ 103			99	96.1
114 IMS	8-10	~~120~~ 118			56	46.6
115 IMS	8-10	~~80~~ 71			65	91.4
116 IMS	8-12	~~83~~ 82			76	92.7
118 IMS	8-14	~~112~~ 110			54	49.1
* 119 IMS	8-17	145			62	42.8
121 IMS	8-20	~~75~~ 73			38	52.1
125 IMS	8-25	~~99~~ 98			56	57.2
		~~1236~~				
					2915 total eggs to IMS	
				672 S 2447 4278		
	TOTALS					
65	~114.88 eggs/nest	~~7444~~ ~~7352~~			~~7444~~ 7373 Eggs total	
26 IMS		~~2815~~ ~~2823~~ 2922				
37 O.B.		4529			LOGGERHEADS 2910	
					6554 Log eggs	
Green Turtle		(674) 11.14% of total 819			819 G eggs 468 G E - IMS 2376 L Pa to IMS	
					~~7398~~	

674
8.19
11.139 %

SEA TURTLE INVENTORY
(Hatching Success)
Marine Corps Base
Camp Lejeune, North Carolina

1980

Nest No.	Incubation Period	Total Eggs	Released Young	Emerged Young	Total Young	Percent of Success
048 IMS	7-10	~~124~~ 119	—	—	0	0
2 2.9(N) .054	7-12 9-9 59	89	64	23	87	97.8%
3 2.05(N) .058	7-14 9-10 58	109	51	55	106	97.2%
6 2.05(N) .059	7-14 9-11 59	118	13	99	112	94.9%
3 3.5(N) .062	7-15 9-11 58	97	3	91	94	96.9%
2.8(N) .066	7-16 9-11 57	131	37	80	117	89.3%
0.6(N) .067	7-16 9-17 63	99	0	88	88	88.9%
27 0.55(N) 069	7-17 9-15 60	131	109	0	109	83.2%
072 IMS	7-16	~~123~~ 120	—	—	43	26.7
1.8(N) 073	7-18 9-16 60	119	2	112	114	95.8%
2 3.5(N) 075	7-19 9-17 60	160	4	154	158	98.75%
0.3(N) ✓ 080	7-20 UNKNOWN	117	0	101	101	86.3%
* 081 IMS	7-21	166	Removed ? — Ims ? — yes	—	1	.006
082 IMS	7-23	96	—	—	94	98.0
2.35(N) 083	7-23	134	2	81	83	61.9%
2.1(N) 084	7-24 9-21 59	116	4	106	110	94.8%
3.7(N) 085	7-24 9-23 61	114	0	111	111	97.4%
3.35(N) 086	7-25 9-26 63	89	0	88	88	98.9%
094 IMS	7-28	~~132~~ 128			52	40.6
095 IMS	7-28	~~102~~ 101			11	10.9
3.5(N) 096	7-30	88	0	74	74	84.1
098 IMS	8-1	114			39	34.2
099 IMS	8-1	~~78~~ 75			68	90.7
* 100 IMS	8-2	157	Removed ? IMS ? yes		32	20.4
102 IMS	8-2	114			61	53.5
103 IMS	8-3	~~79~~ 68			12	17.7
		2996				

This may be used for aerial Survey section

SEATURTLE AERIAL SURVEILLANCE FLIGHTS

THE PURPOSE OF THE A.S.: 1) TO DETERMINE WHICH BEACHES WERE MOST FREQUENTED 2) WHEN NESTING ACTIVITIES PEAK 3) WHETHER THIS PEAK CHANGES FROM YEAR TO YEAR 4) WHETHER SEATURTLE POPULATIONS ARE DECLINING OR INCREASING 5) WHETHER CHANGES IN NESTING OCCUR AT SPECIFIC BEACHES

THE PROCEDURE USED WAS AS FOLLOWS: FLIGHTS COVERED BEACHES FROM NEW RIVER INLET NORTH TO BOGUE INET, WHICH INCLUDED ONSLOW BEACH, CAMP LEJEUNE, BROWN'S ISLAND CAMP LEJEUNE, AND BEAR ISLAND COMMONLY KNOWN AS HAMMOCK'S BEACH STATE PARK.

THE SURVEY WAS CONDUCTED FROM MILITARY HELICOPTERS PILOTED BY MARINE CORPS PERSONNEL. FLIGHTS AVERAGED 1 HOUR AND 15 MINUTES IN ~~IN~~DURATION AND WERE FLOWN AT AN ALTITUDE OF 200'-300', VELOCITY OF 30-60 KNOTS. THE RETURN FLIGHT WAS FLOWN APPROX ½-1 MILE OFF THE COAST IN AN ATTEMPT TO SPOT TURTLES IN WATER. THE LOCATION OF ALL FRESH NESTS AND FALSE CRAWLS SIGHTED WERE RECORDED ON MAPS ALONG WITH THE NUMBER AND LOCATION OF TURTLES SIGHTED OFFSHORE AND OF SHRIMPING VESSELS IN THE AREA.

* insert sentence back of page identified by an "*" see

HAMMOCK'S BEACH STATE PARK PERSONNEL WERE NOTIFIED IN THE EVENT THAT NESTS AND/OR FALSE CRAWLS WERE SIGHTED ON THEIR BEACH AND WRITTEN RECORDS OF EACH FLIGHT WERE SENT

TO STATE PERSONNEL IN RALEIGH, N.C. AND DR. FRANK J. SCHWARTZ AT THE UNIVERSITY OF NORTH CAROLINA INSTITUTE OF MARINE SCIENCE, MOOREHEAD CITY, N.C. WHERE ALL DATA TAKEN BY THIS AND OTHER AGENCIES WILL BE CUMULATED AND SUMMARIZED

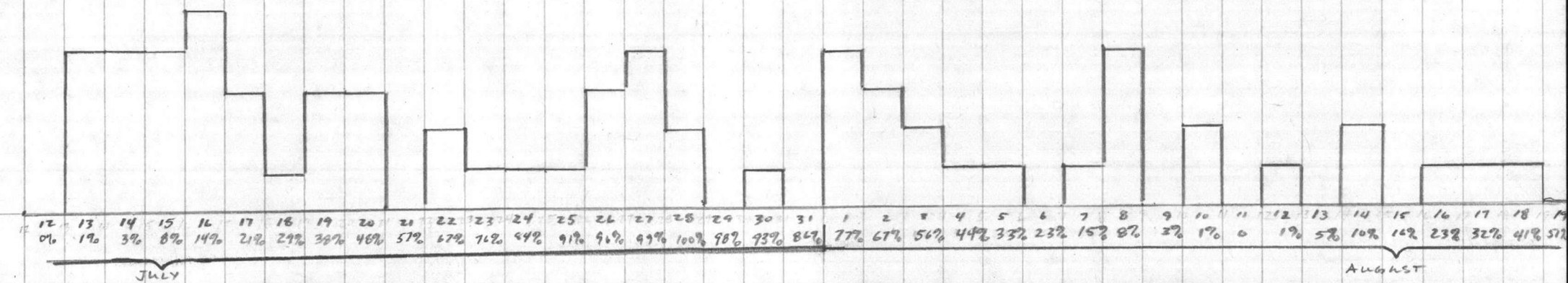
FLIGHTS DATES WERE DETERMINED SUCH THAT THEY WOULD FIT IN WITH THE NORTH CAROLINA TO LOUISIANA SURVEYS PLANNED FOR 1980 ~~RATHER THAN IN ACCORDANCE WITH MOON PHASE, AS PREVIOUS DATA SUGGESTED THAT NESTING WAS NOT CENTERED ARROUND FULL MOON.~~

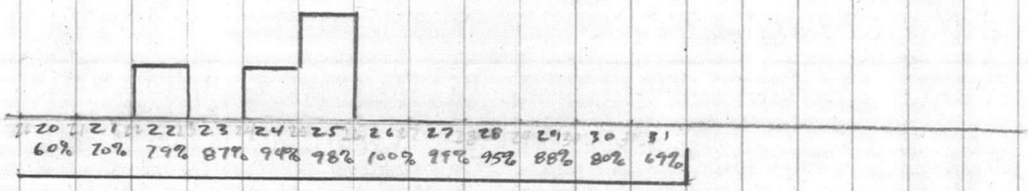
Sorry only preliminary

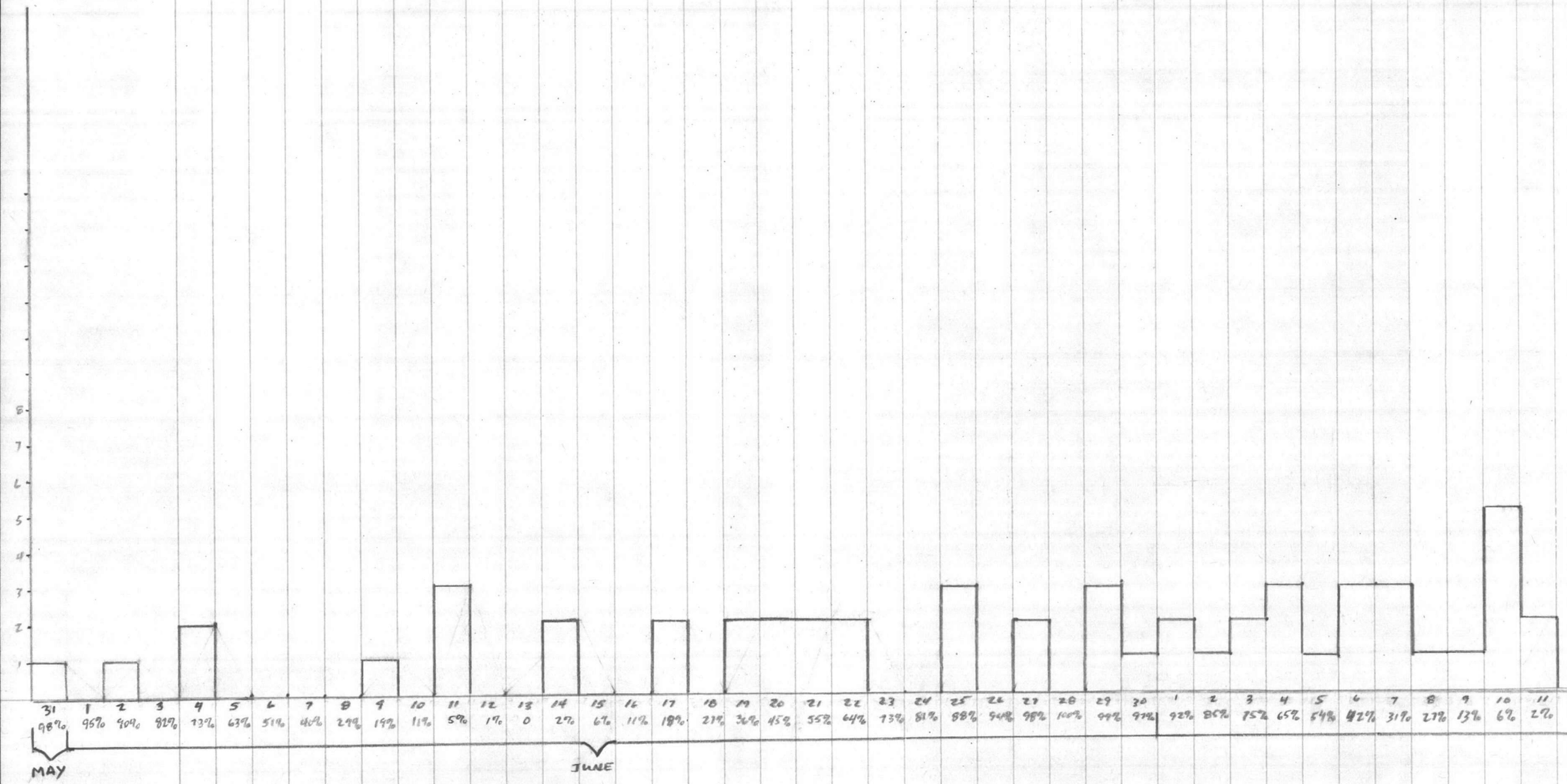
RESULTS A TOTAL OF 12 FLIGHTS WERE FLOWN IN SETS OF 2 AT SCATTERED INTERVALS THROUGH OUT THE NESTING PERIOD, MAKING A TOTAL OF 15 HOURS 35 MINS FLIGHT TIME.

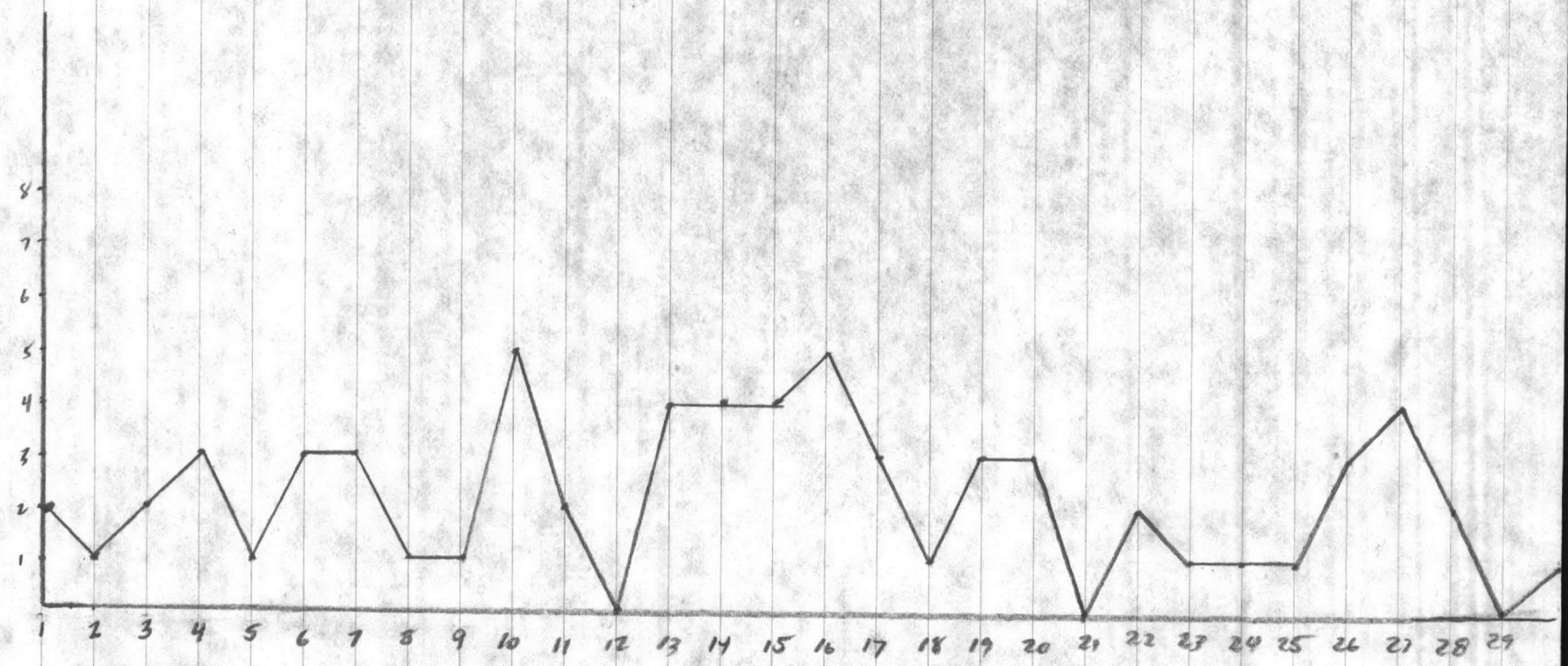
Results ~~BROWNS~~ ISLAND SHOWED THE HEAVIEST CONCENTRATION OF TURTLE ACTIVITY WITH A TOTAL OF 19 NESTS AND 4 FALSE CRAWLS OBSERVED FROM AIR FOLLOWED BY BEAR ISLAND WHICH SHOWED A TOTAL OF 15 NESTS AND 6 FALSE CRAWLS/CRAWLS. 18 NESTS AND 9 FALSE CRAWLS WERE OBSERVED ON ONSLOW BEACH.

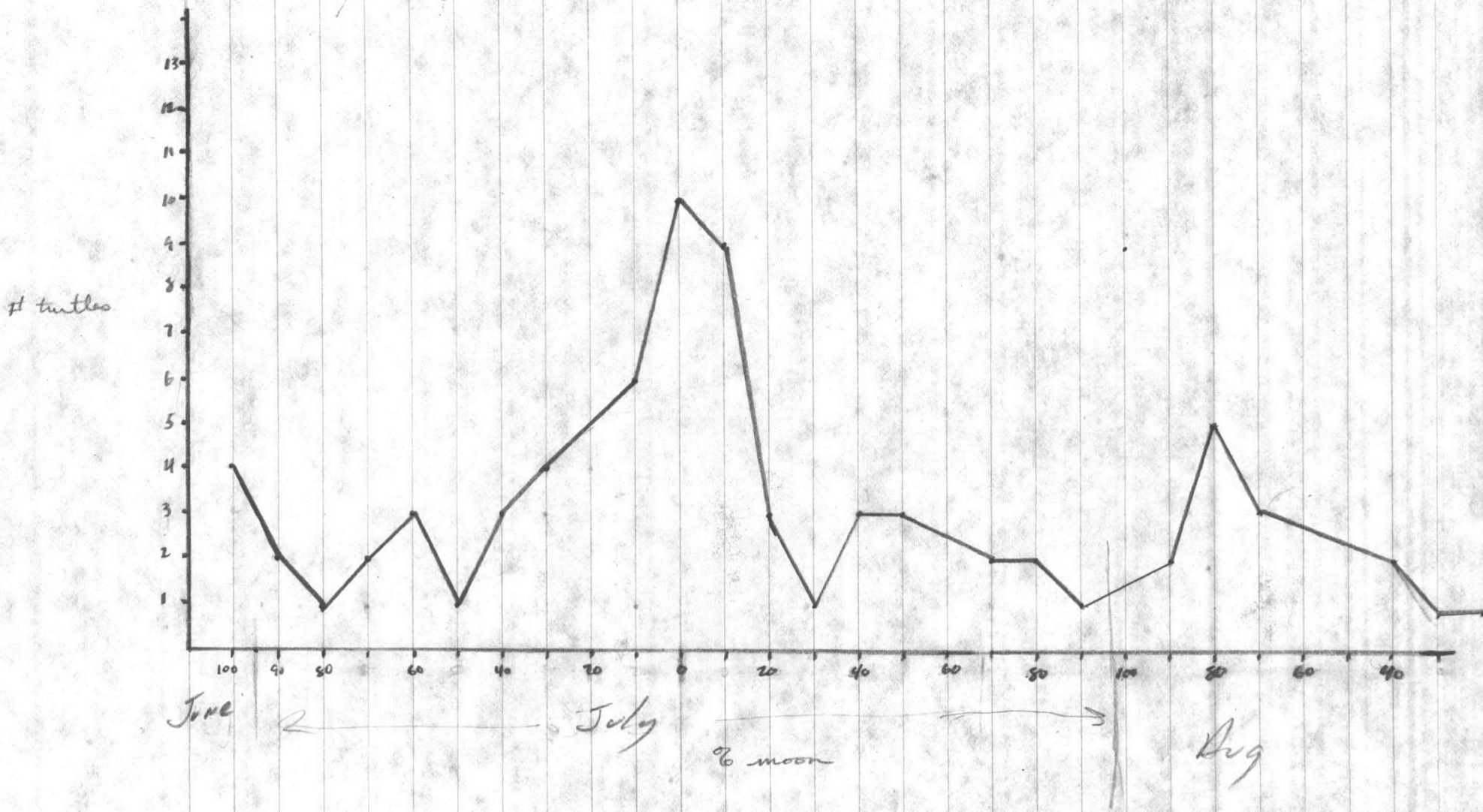
use your

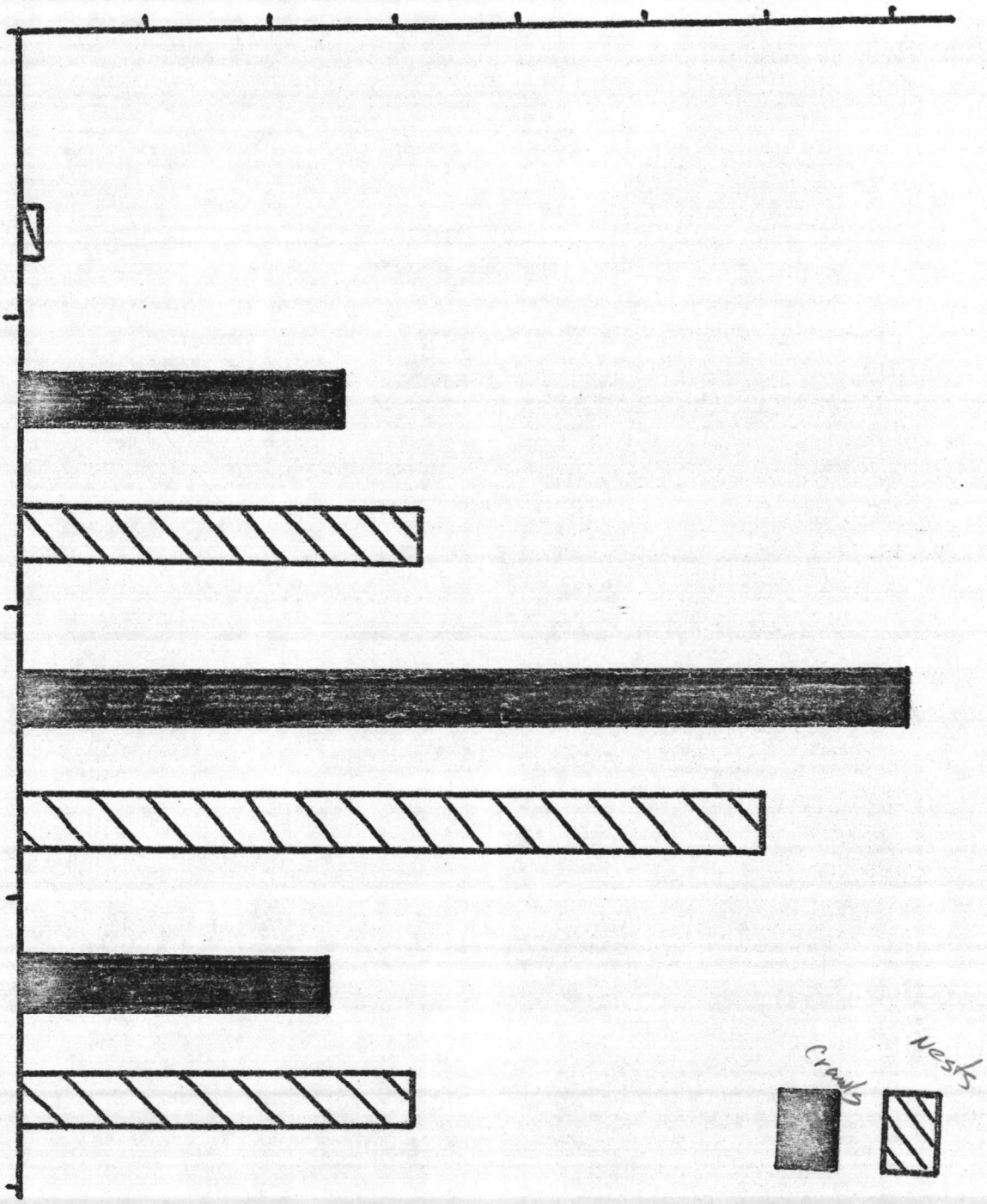

12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
0% 1% 3% 8% 14% 21% 29% 38% 48% 57% 67% 76% 84% 91% 96% 99% 100% 98% 93% 86% 77% 67% 56% 44% 33% 23% 15% 8% 3% 1% 0 1% 5% 10% 16% 23% 32% 41% 51%
JULY
AUGUST


20 21 22 23 24 25 26 27 28 29 30 31
60% 70% 79% 87% 94% 98% 100% 99% 95% 88% 80% 69%


8
7
6
5
4
3
2
1
31 98%
1 96%
2 90%
3 82%
4 73%
5 63%
6 51%
7 46%
8 29%
9 19%
10 11%
11 5%
12 1%
13 0
14 2%
15 6%
16 11%
17 18%
18 27%
19 36%
20 45%
21 55%
22 64%
23 73%
24 81%
25 88%
26 94%
27 98%
28 100%
29 99%
30 97%
1 92%
2 85%
3 75%
4 65%
5 54%
6 42%
7 31%
8 27%
9 13%
10 6%
11 2%
MAY
JUNE


8
7
6
5
4
3
2
1
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29


#turtles
13
12
11
10
9
8
7
6
5
4
3
2
1
100
80
60
40
20
0
20
40
60
80
100
80
60
40
June
July
Aug
% moon



1980

They look good to me
but I'm sleepy now &
could be missing something

Hafe

30 June 81

Hugh -

Let me know if this is alright - how many copies of this for future years, etc.

CB.

~~Charles-~~

~~Here is the~~ 1980 ~~report. Hope it~~ is ~~ok.~~

~~Hugh~~

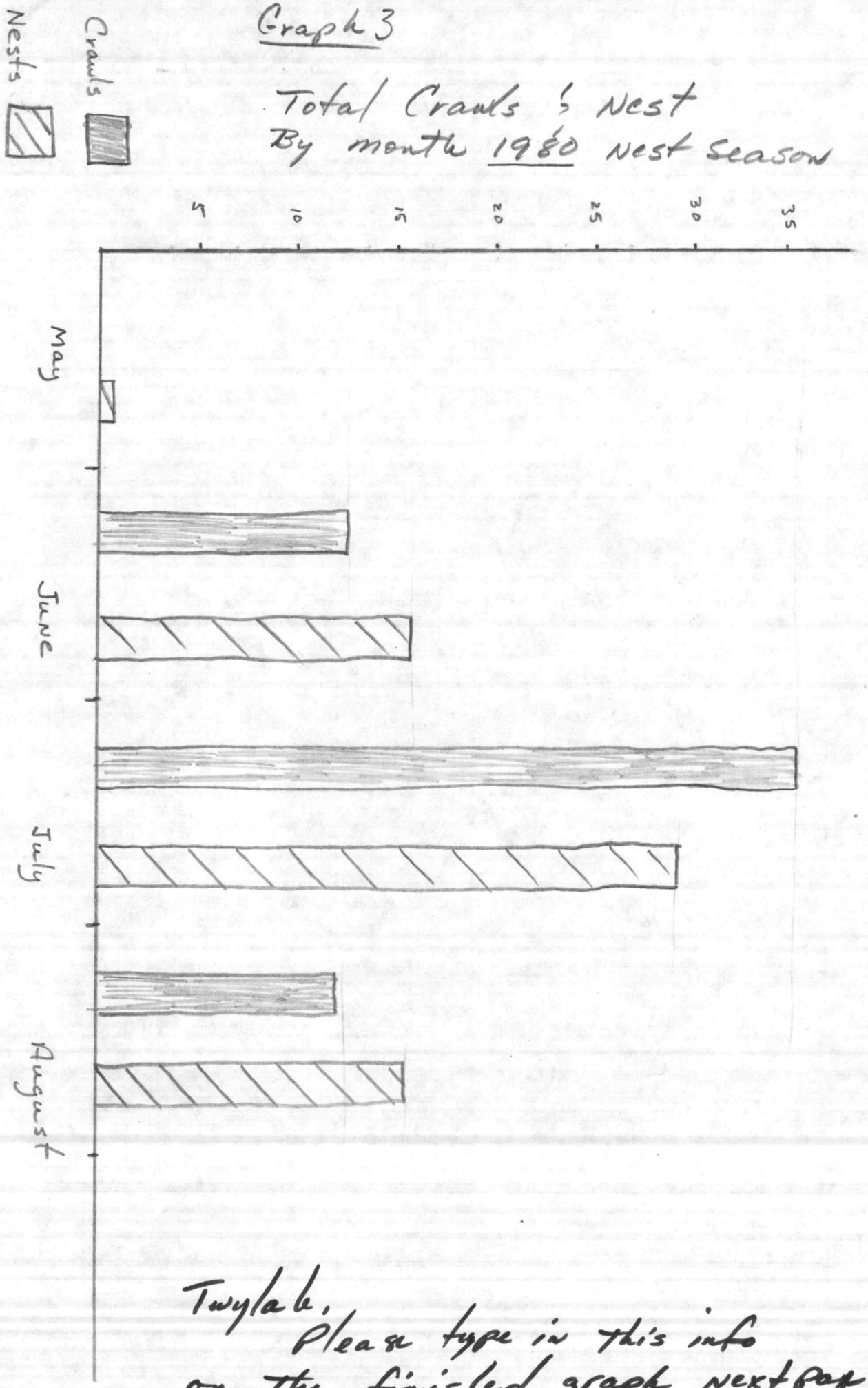
Charles

This is all the rough work - please save for reference

Hugh

Graph 3

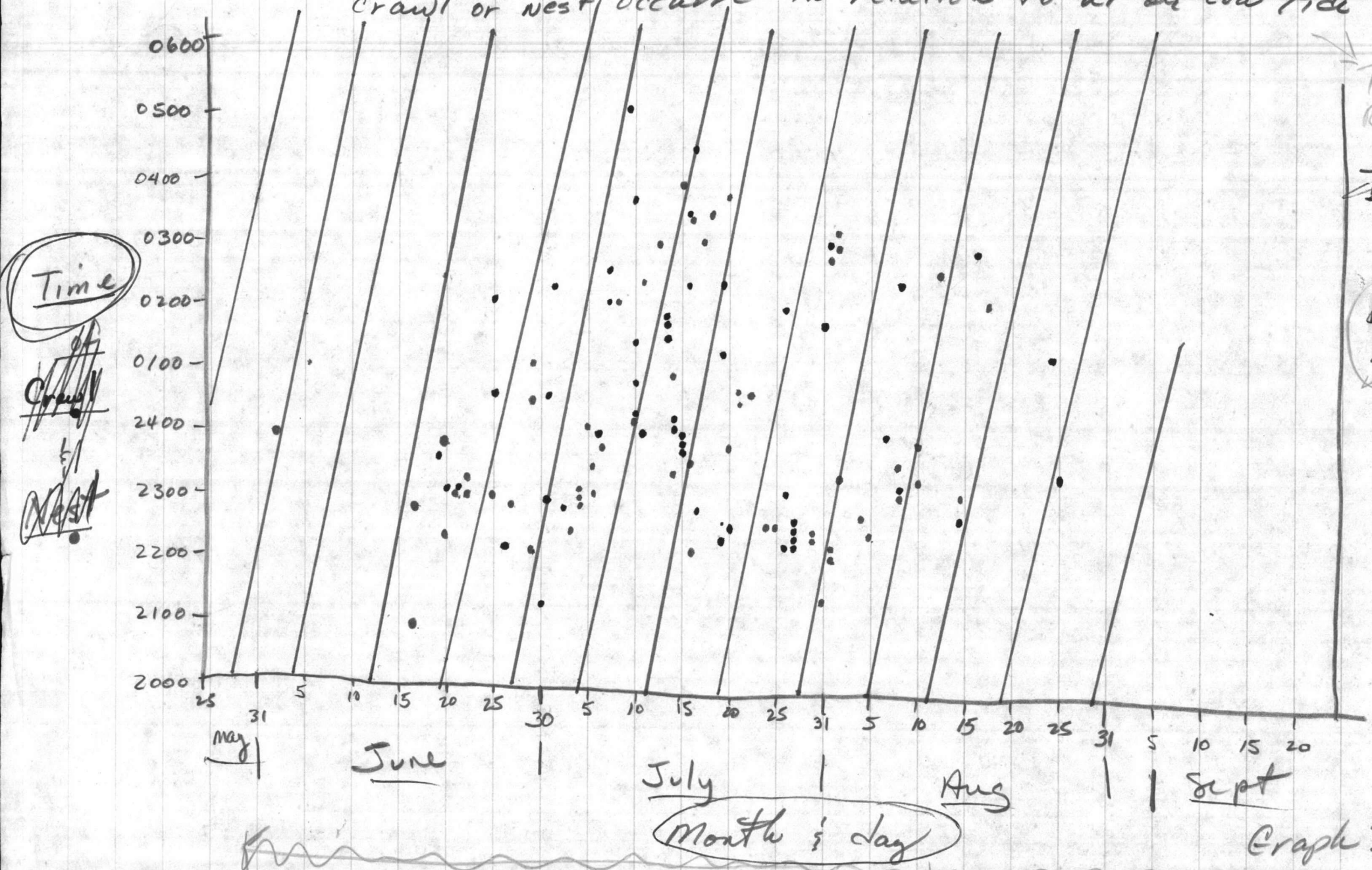
Total Crawls & Nest
By month 1980 Nest Season



Twylah,
Please type in this info
on the finished graph next page.
Hah

Charles if you like this graph I will do it on plain paper so we can use it - Just shows when crawl or nest occurred in relation to hi or low tide -

is there a pattern



Needs work

Titles - Nest Relationship Time and Tide Cycles

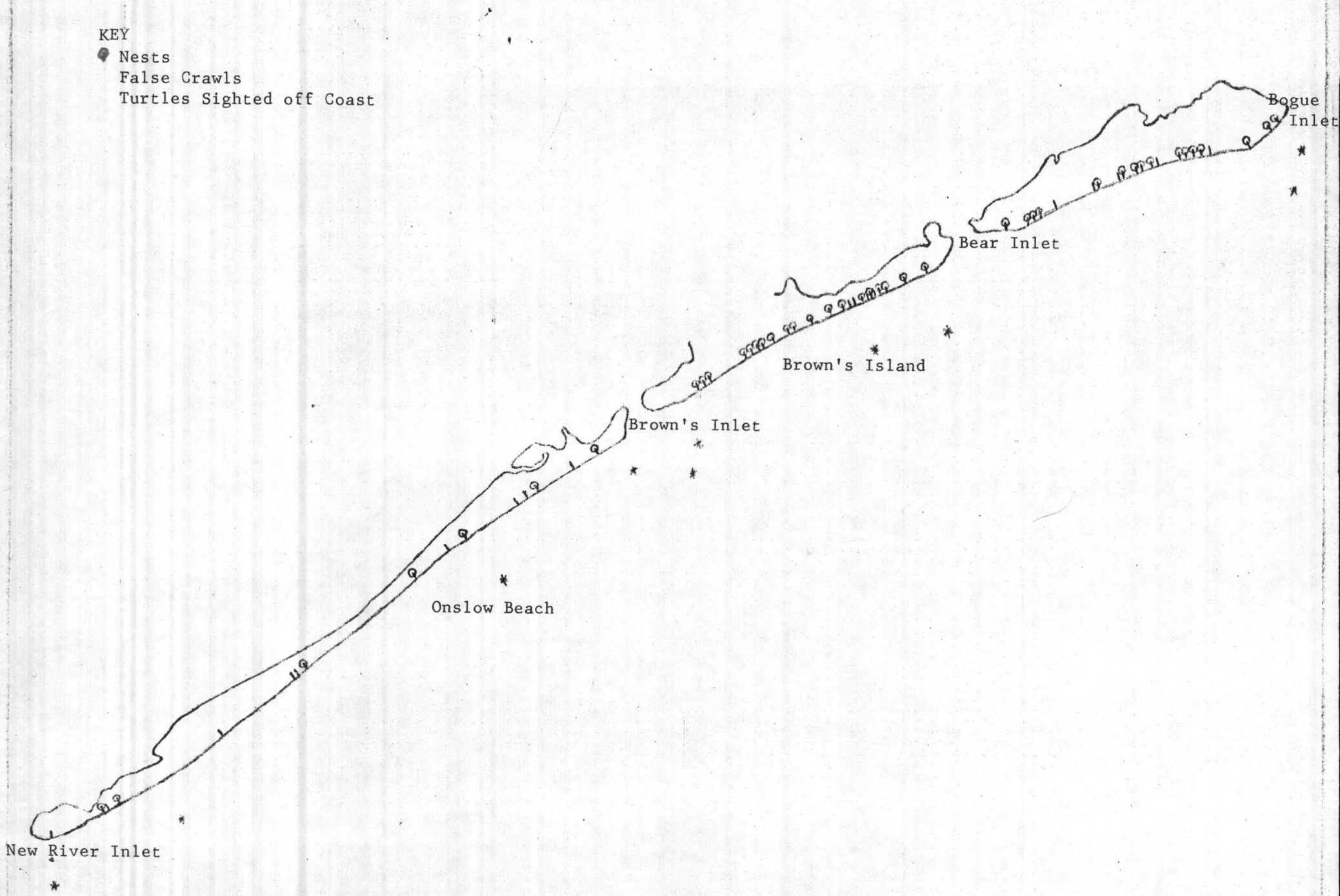
~~Time of Tide~~

~~High to Red~~

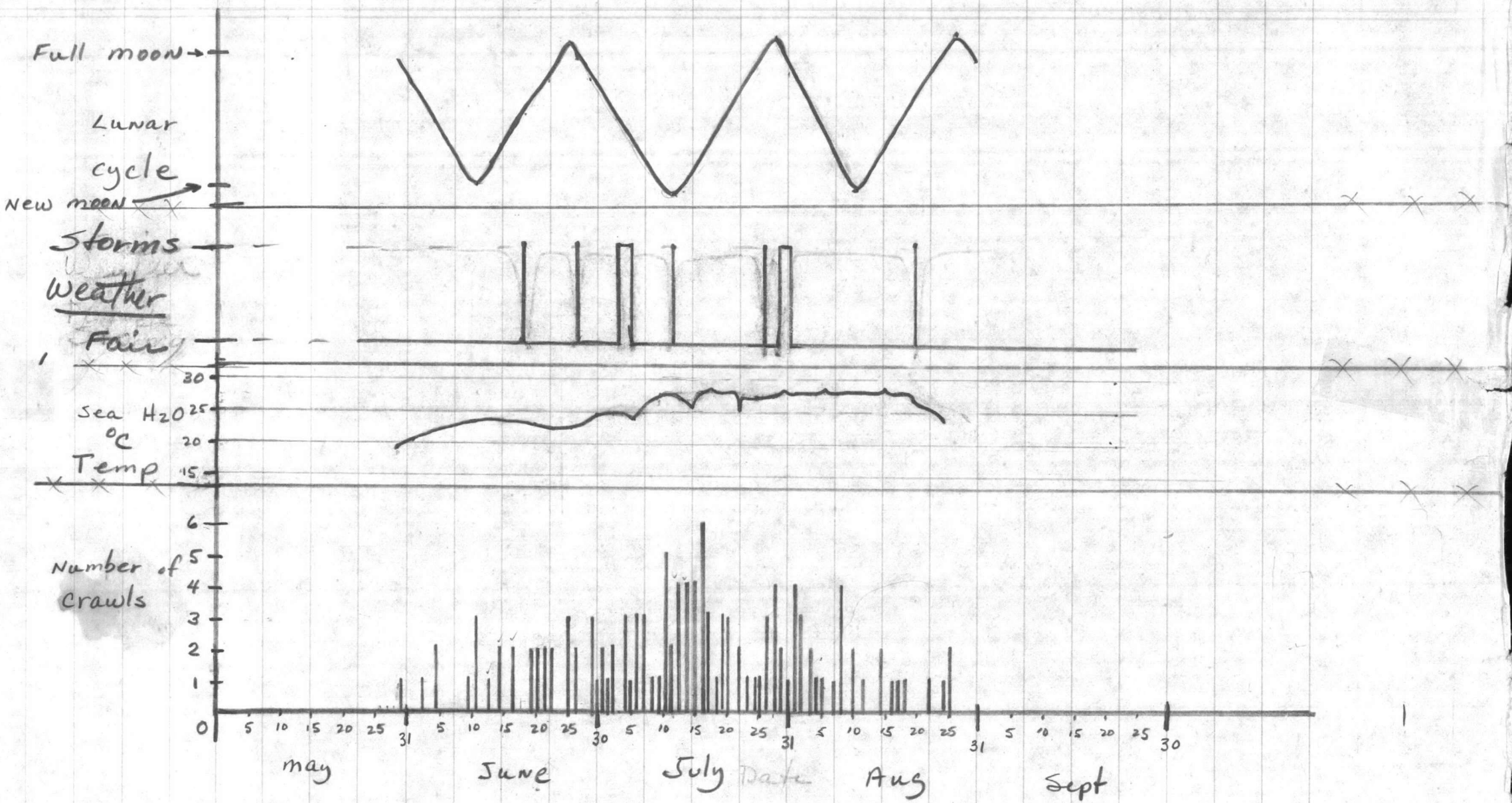
Low to Green

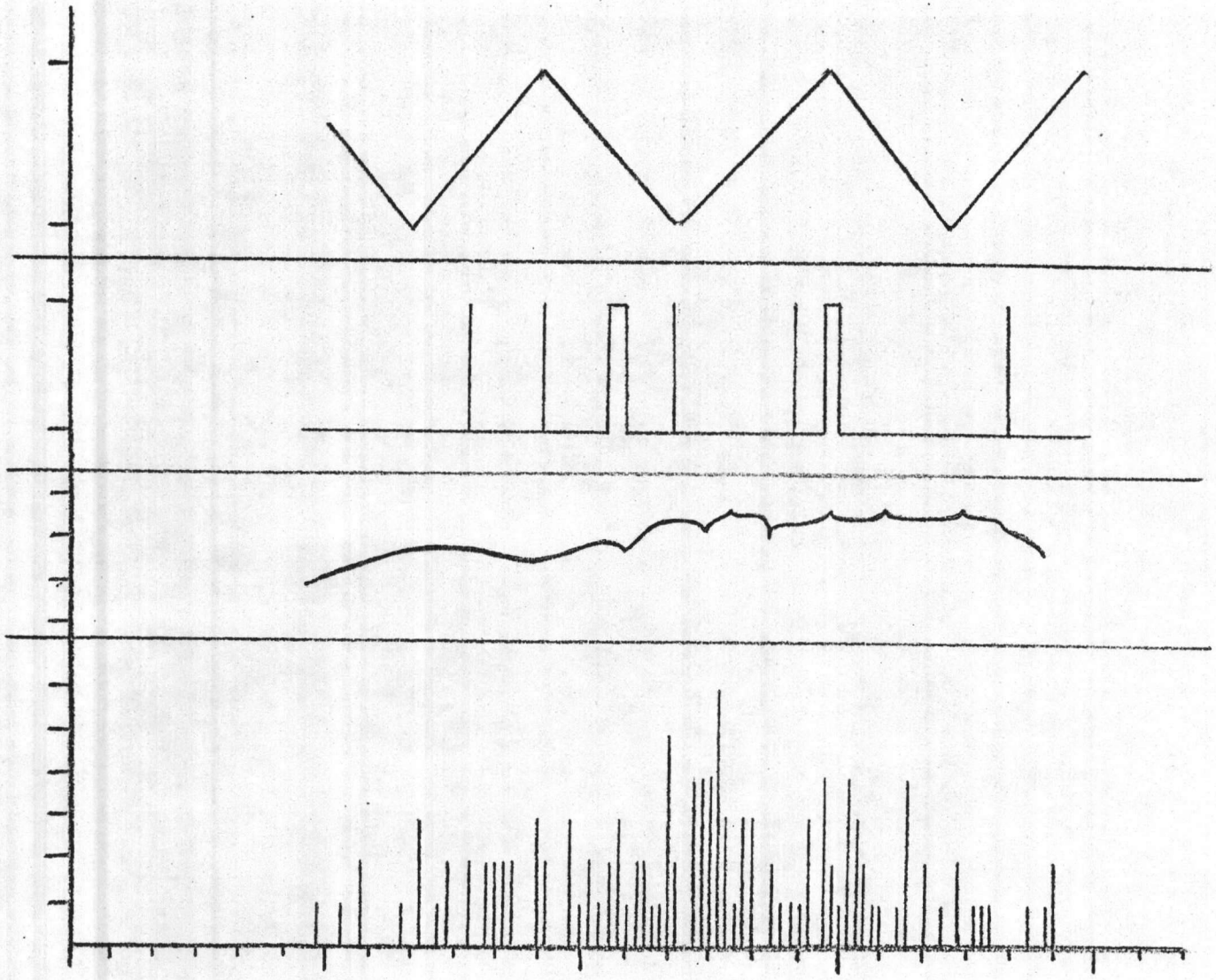
Graph II

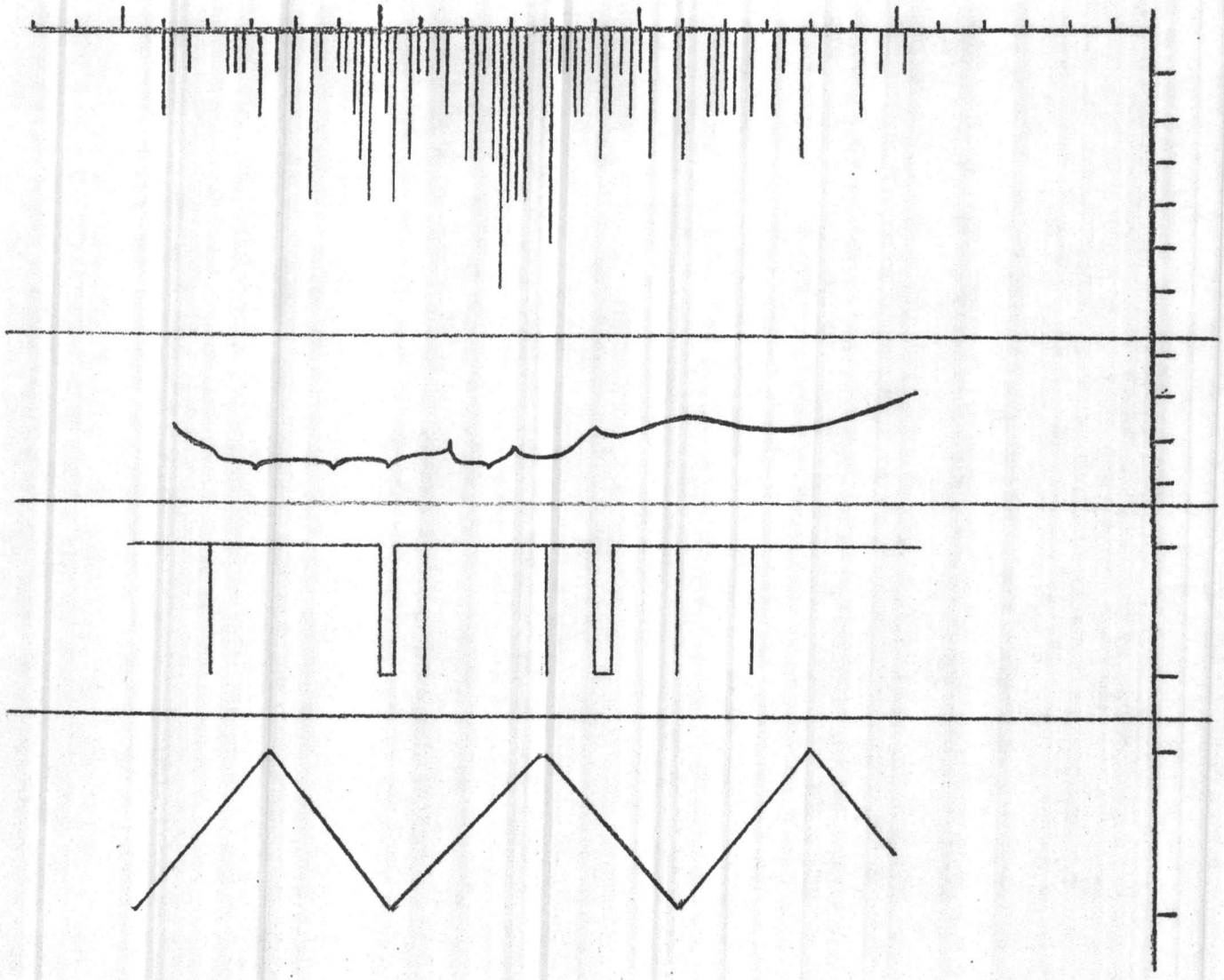
MAP II


KEY
Nests
False Crawls
Turtles Sighted off Coast
Bogue Inlet
Bear Inlet
Brown's Island
Brown's Inlet
Onslow Beach
New River Inlet

Graph I


Full moon
Lunar cycle
New moon
Storms
Weather
Fair
Sea H_2O °C Temp
30
25
20
15
Number of crawls
6
5
4
3
2
1
0
5 10 15 20 25 31 5 10 15 20 25 30 5 10 15 20 25 31 5 10 15 20 25 31 5 10 15 20 25 30
May
June
July
Date
Aug
Sept





Cover

Marine Corps Base, Camp Lejeune
Sea Turtle Inventory
Summer and Fall 1980

Director ~~Head~~: Julian I. Wooten
supervisor: Charles D. Peterson
Technicians. John A Fridell,
Hugh R Passingham
Advisor: Dr Frank B. Schwartz, Institute of Marine Science Morehead city N.C.

Contents

Introduction

The Sea Turtle Inventory for 1980 is a continuation of past efforts by Marine Corps Base Camp Lejeune, North Carolina to protect ~~endangered~~ THREATENED Loggerhead Sea Turtles. The program was begun in 1974 by the Marine Corps and Camp Lejeune Biologists when evidence indicated that a high percentage of Loggerhead nests on Onslow Beach were being destroyed by predators. This action was taken prior to the addition of the Loggerhead Turtle to the endangered species list as threatened. The protection program to date has had ~~three~~ two main objectives. First ~~and foremost~~ ~~probably the most important conservation practice~~ has been to protect the turtles and their nests from predation. Second has been to study the nesting habits of the Loggerhead turtle (Caretta caretta).

First for the compliance of the Endangered Species Act through biological opinions rendered by the USFWS.

There are several related projects that ~~mat~~ comprise the protection program. These include:

- Nightly Beach Patrols
- Tagging Adult Turtles
- Collection of Nesting Data
- Insitu Weather Observations
- Aerial Surveys
- Nesting and Hatching Success
- Occasional Hatchling Tagging.
- Stranding Reports on Dead Turtles.

The University of North Carolina Institute of Marine Science in Morehead City (IMS) assists the Marine Corps ~~and~~ in the turtle protection program. IMS provides tags for adult and hatchling turtles and assists in the tagging process. Dr. Frank Schwartz of IMS is also a valuable source of information for the Camp Lejeune Biologists.

In 1980 the Loggerhead program took on new dimensions when a ~~Atlantic~~ Green Turtle, ~~Caretta~~ Chelonia mydas mydas, ~~was discovered~~ NESTED ~~Nesting~~ on Onslow Beach. The Green turtle was observed nesting four times and is believed to have nested five times, since for one unobserved nest the crawl, nest, ~~and~~, eggs, and hatchlings were indicative of a Green Turtle.

?

Results

The nesting season for 1980 began with the first nest on May 30 and ended with the last nest on August 25. There were a total of 125 ~~attempts~~ CRAWLS to nest on Onslow Beach of which 65 were successful. This compares closely to the data from the 1979 nesting season where 138 ~~attempts~~ CRAWLS and 63 successful nests were observed.

The rate of nest predation on Onslow Beach for the 1980 nesting season was zero. There were 37 nests, 35 Loggerhead and 2 Green Turtle, protected by wire cages ON Onslow Beach.

During the 1980 nesting season a total of 36 turtles were tagged. One turtle had been tagged previously with tag # NC 0001 and subsequently was not retagged by the Camp Lejeune technicians. Of the 36 tagged turtles there were 29 return trips to the beach to lay. (Table III Pg ___) One Loggerhead was observed laying 5 times at 12-13 day intervals. Four Loggerheads were observed 4 times. Three were observed 3 times, six turtles were observed 2 times and 23 were observed 1 time, for a total of 59 sightings of tagged turtles.

No turtles were observed on Onslow Beach that had been tagged on previous years. ~~that had been previously tagged on Onslow Beach.~~ The Green Turtle was observed 4 times retagged twice and is believed to have nested 5 times.

The Green Turtle nests produced 819 eggs of which 387 hatched for a 47.2% success rate. There were 2 deformed and 5 white (not albino) Green Turtle hatchlings from the 5 nests. Two of the Green Turtle nests were naturally incubated. Those nests contained 315 eggs of which 292 hatched for a 83.2% rate of hatchling success (See Table IV Page —). The three remaining Green Turtle nests were taken to IMS where they were artifically incubated. Those nests contained 468 eggs, of which 95 hatched for a 20.3% rate of hatchling success (Table VI Page —).

Loggerhead nests produced 6554 eggs total. Of the 6554 eggs, 4178 were allowed to hatch naturally, 3467 of those eggs hatched for a 83% success rate (Table IV Page —). IMS artifically incubated 2376 Loggerhead eggs of which 1157 hatched for a 48.7% success rate. (Table VI Page —) Therefore of 6554 total loggerhead eggs laged 4624 hatched for a 70.6% success rate. When Green and Loggerhead turtle nest data are combined a total of 7373 eggs were laged of which 5011 hatched for a years success rate of 67.96%. This overall success rate is better than the 1979 season success rate which was 57%.

(Note over) Camp Lejeune Aerial Survey results, see Table VII Page —, are insignificant unless compared to the overall Aerial

Survey program done by the United states Fish and Wildlife Service for the East coast of the U.S. Consequently the discussion of Camp Lejeune's Aerial Surveys will be held to a statement of total data taken. Observations were; 42 new nests, 18 crawls without nesting, 10 swimming turtles and 30 shrimp-boats within the survey bounds.

Questions concerning data contained in this report should be directed to the Commander Marine Corps Base Camp Lejeune, North Carolina and Base Maintenance Branch Natural Resources and Environmental Affairs -

Pete

John has written an excellent Aerial Survey section which would probably be much better than I have presented here - I don't think it would be hard to incorperate unless you feel it is too long or unnecessary - next page -

Nate

The Camp Lejeune Sea Turtle Aerial Surveilance flights covered beaches from New River Inlet north to Bogue Inlet, which included Onslow Beach, Camp Lejeune; Brown's Island, Camp Lejeune and Bear Island (Hammock's Beach State Park). Flight dates were ~~[illegible]~~ scheduled such that they would fit in with the North Carolina to Louisiana surveys planned for 1980. The surveys were conducted from military helicopters piloted by Marine Corps personnel dispachted from Marine Corps Air Station, New River. Flights averaged 1 hour 15 min. in duration and were flown at an altitude of 200' to 300' and a velocity of 20-60 knots. The return flights were flown approximately 1/2 - 1 mile off the coast in an attempt to spot turtles in the water. A total of 12 flights were flown in sets of 2 at scattered intervals throughout the nesting period, for a total of 15 hours 35 mins. flight time. The number and location of all fresh nests and false crawls sighted were recorded along with the number and location of turtles observed offshore and of shrimping vessels within the survey area. Hammocks Beach State Park personnel were notified in the event that nests and/or false crawls were sighted on their beach and written records of each flight were sent to state fish and wildlife personnel in Raleigh, N.C. and to Dr. F.J. Schwartz at I.M.S. Moorhead City, N.C., ~~[illegible] flight data taken by this and other agencies will be accumulated and summarized.~~

The Camp Lejeune Aerial Survey results, see Table III and Map II page ___, are insignificant unless compared to the overall Aerial Survey program for the East coast, conducted by the United States Fish and Wildlife Service. Consequently the discussion of the results will be held to a statement of total data taken. Observations were; 42 new nests, 18 false

crawls, 10 swimming turtles and 30 shrimp boats within the survey bounds.

Questions concerning data contained in this report should be directed to the Commanding General, of Marine Corps Base Camp Lejeune, North Carolina Attention: ~~and~~ Base Maintenance Department, Natural Resources and Environmental Affairs Division.

Page 1

Table 1

Crawl information in relation to moon and tide cycles and weather conditions.

(Note) Nights handled as a whole not broken at midnight.

Date Night of	Moon Rise % illumin	Time of Hi Tide	Time Crawl w/o Nest	Time Crawl w/ Nest	Total	Weather	Temp. H_2O	Temp. Air
5-30-80		–		I	1	FAIR CLEAR	20.5°C	19°C
31					0			
6-1-80	2151-95%	2130			0			
2	2241-90%	2216		I	1	FAIR SCATTERED CLOUDS	22°C	21°C
3	2326-82%	2307			0			
4	0008-73%	0007	I	I	2	FAIR PARTLY CLOUDY	22°C	18.5°C
5	0047-63%	0103			0			
6	0125-51%	0207			0			
7	0203-40%	0311			0			
8	0242 29%	0412			0			
9	0323 19%	0512	I		1			
10	0407 11%	0607			0			
11	0455 5%	1835 0701	I	II	3	FAIR PARTLY CLOUDY	24.9°C	–
12	0547 1%	1926 0752			0			
13	0	2015	I		1			
14	0642-2%	2102	II		2			
15	0740-6%	2147			0			
16	0837-11%	2231			0			
17	0934-18%	2317		2100 2250	2	FAIR FEW CLOUDS	24°C	22°C
18	1030-27%	0005			0	COOL, WINDY, CLOUDY	24°C	20°C
19	1125-36%	0053	2345	2345	2	FAIR CLEAR	24.5°C	24°C
20	1219-45%	0144	2300	2210	2	FAIR CLOUDY	24°C	22.5°C
21	1313-55%	0237	2300	2300	2			
22	1407-64%	0330		2300 —	2			
23	1501-73%	0420			0	FAIR	24°C	24°C
24	1558-81%	0508			0	STORMY	23°C	24°C
25	1655-88%	0555	0030 0200	2300	3	PARTLY CLOUDY	24°C	23°C
26	1753 94%	1819 0638			0	CLOUDY	24°C	23.5°C

Page 2

Crawl info vs/weather Night as 1 unit Not broken at 2400/0000

Date Night of	Moon Rise & % illum.	Time of Hi Tide	Time Crawl w/o Nest	Time Crawl w/Nest	Total	Weather	Temp H_2O	Temp Air
6-27-80	Full 1850 98%	1901 0723	2200	2245	2	FAIR & CLEAR	24°	24°
28	1945 - 100%	1943			0	FAIR & CLEAR	24°	26°
29	2037 - 99%	2028		2200 0030 0100	3	FAIR & CLOUDY	25°	26°
30	2125 - 97%	2114	2115		1 29	FAIR & CLOUDY	24°	22.5°
7-1-80	2209 - 92%	2201	2300 0030		2	FAIR & CLEAR	24°	24°
2	2249 - 85%	2251	0215		1	FAIR & CLEAR	26°	27°
3	2328 - 76%	2346	2245	2230	2	THUNDER STORM 2200 2400 CLEARING	24.5°	23°
4	0005 - 65%	0043		2300 2300 2300	3	CLOUDY - OCCASSIONAL SHOWERS	24.5°	24°
5	0043 - 54%	0148		2400	1	FAIR & CLEAR	26°	26°
6	0122 - 42	0253	2345	2310 2330	3	FAIR & PARTLY CLOUDY	26°	26°
7	0203 - 31	0356	0200 0230	2340	3	FAIR & CLEAR	24.5°	26°
8	0248 27	0457		0200	1	FAIR & CLOUDY	26°	26°
9	0338 13	0553	0500		1	FAIR & PARTLY CLOUDY	27°	27°
10	0431 6	1820 0645	0015 0115 0030 0335	2345	5	THUNDER STORM 2200 2400 CLEARING	26°	23°
11	0527 2	1910 0734	2340	0200	2	FAIR & CLEAR	26.5°	26°
12	0624 0	1957			0	FAIR & CLEAR	26°	27°
13	— 1%	2038	0140 0115 0140	0250	4	FAIR & PARTLY CLOUDY	26.5°	24.5°
14	0722 - 3%	2120	2320 2310	2315 0040	4	FAIR & CLEAR	26°	25°
15	0819 - 8%	2201	2340 2340 2350	0330	4	FAIR & CLEAR	25.5°	25.5°
16	0914 - 14%	2242	0215 0315	2145 2310 0300	5	FAIR & CLEAR	26°	26°
17	1009 - 21%	2323	2240 0400	0245	3	FAIR & INCREASING CLOUDINESS	27.5°	26°
18	1103 - 29%	0006		0305	1	FAIR & PARTLY CLOUDY	27°	26°
19	1156 - 38%	0057	2200 0100 0200		3	FAIR & CLEAR	27°	27.5°
20	1250 - 48%	0149	2200	2330 0330	3	FAIR & CLEAR	27°	28.5°
21	1345 57%	0241			0	FAIR & INCREASING CLOUDINESS	27.5°	27°
22	1442 67%	0338		0040 0035	2	FAIR & CLOUDY	27°	27°
23	1539 76%	0431		0030	1	RAINY	25°	25°
24	1639 84%	0521		2215	1	FAIR & CLOUDY	26°	26°

45°

Page 3

Crawl info vs weather nights as 1 unit not broken at 2400/0000

Date Night of	Moon Rise / % illum.	Time of Hi Tide	Time Crawl w/o nest	Time crawl w/nest	Total	Weather	Temp H2O	Temp Air
7-25-80	1733/91	0612		2215	1	FAIR & CLOUDY	26°	26.5°
26	1827/96	1835 0658	2200 2245 0200		3	2200-2400 RAINY 0200 THUNDERSTORMS	26°	24.5°
27	1917/99	1922 0745	2200 2210 2200 2230		4	HEAVY RAIN	–	–
Full 28	Full 2004/100	2009		2210 2210	2	CLOUDY	27°	26°
29	2047/98	2054			0	PARTLY CLOUDY	27°	25°
30	2128/93	2144		2120	1	FAIR & CLEAR	27°	26°
31	2206/86	2233	0130		1 98	FAIR & CLEAR	27.5°	27.5°
8-1-80	2224/77	2328	0315	2200 2200 0245	4	2000-2200 THUNDERSTORM 2400-CLEARING	27°	26.5°
2	2323/67	0026		2330 0245 0300	3	FAIR & CLEAR	27°	28°
3	0003/44	0129	11		2		–	–
4	0047/33	0235		2250	1	PARTLY CLOUDY	27°	28°
5	0134/23	0343		2230	1	CLEAR	27.5°	28°
6	0224/15	0444			0	CLEAR	27°	28°
7	0318/8	0540	2400		1	PARTLY CLOUDY	27°	26.5°
8	0414/3	1806 0630	2300 0200	2245 2315	4	FAIR & CLEAR	27°	27.5°
9	0511/1	1852 0715			0			
10	0608/0	1934 0758		11	2	FAIR & CLEAR	27°	27.5°
11	—	2013			0	FAIR & CLEAR	27°	27.5°
12	0705/1	2052		0230	1	CLOUDY	27°	27°
13	0800/5	2129	2030	2100	0	FAIR & CLEAR	27°	28°
14	0854/10	2206	2230	2300	2	FAIR & CLEAR	27°	28°
15	0948/16	2243			0	CLEAR & WINDY	27.5°	26.5°
16	1041/23	2323		1	1			
17	1135/32	0010	0245		1	COOL & CLOUDY	27°	22°
18	1230/41	0100	0230	0200	1	(THUNDER HEAD MOVING IN) CLOUDY	26°	23°
19	1326/51	0158			0	CLOUDY	25.5°	25°
20	1422/60	0258			0			
21	1518/70	0356			0			

DATE NIGHT OF	MOON RISE % ILLUM.	TIME OF HIGH TIDE	TIME OF CRAWL w/o NEST	TIME OF CRAWL w/ NEST	TOTAL	WEATHER	TEMP. H_2O	TEMP. AIR
8-22-80	1613/79	0258	1		1	FAIR & CLEAR	25°C	23°C
23	1705/87	0356						
24	1754/94	0452	0100		1	FAIR & CLEAR	23°C	19°C
25	1839/98	0543	between 2200 - 2400	2200 - 2400	2	"	"	"
26	1922/100	1721 0634						
27	2002/99	1859 0723						
28	2042/95	1948 0812						
29	2121/88	2036						
30	2202/80	2125						
31	2245/69	2216						

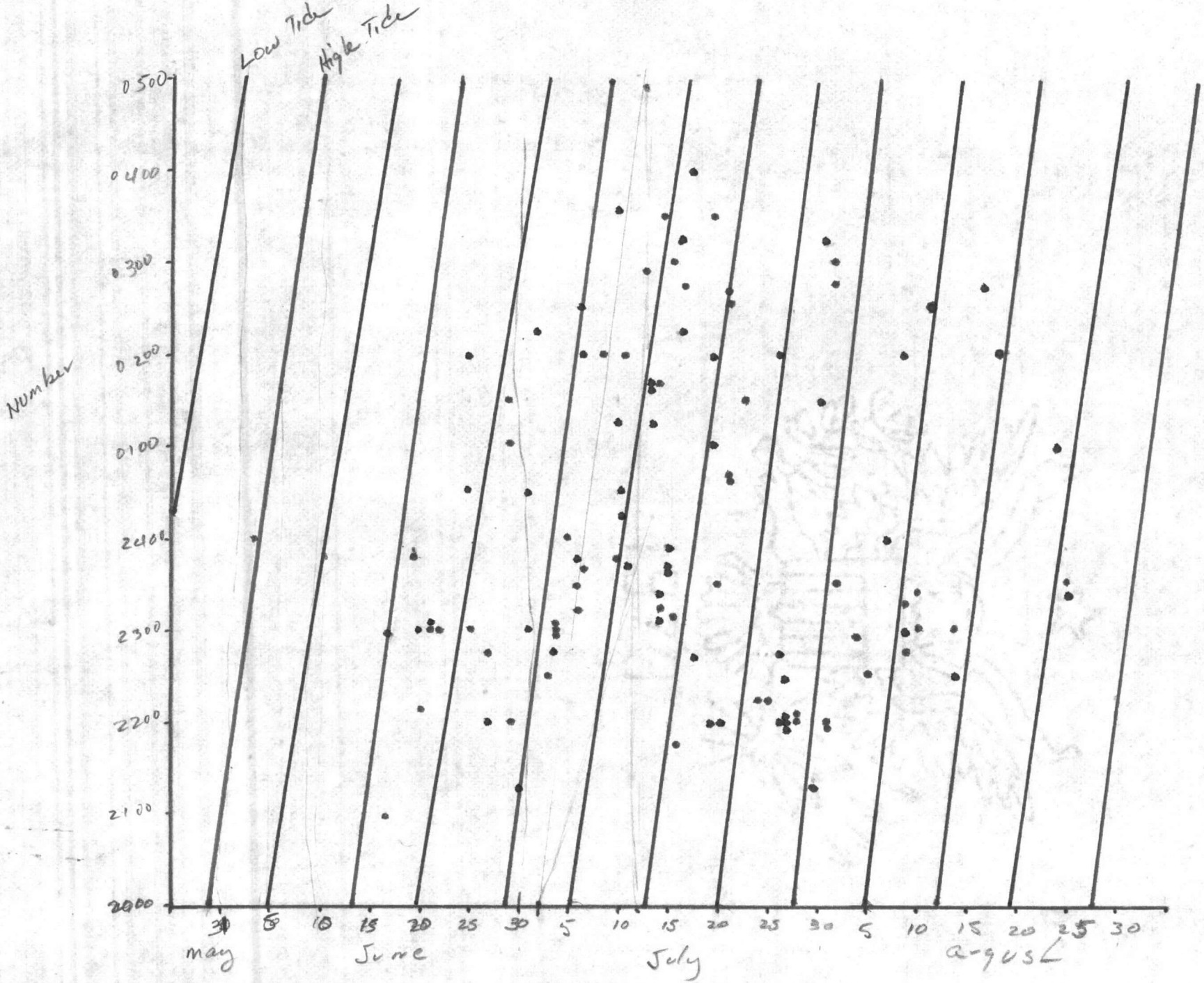

Low Tide
High Tide
Number
0500
0400
0300
0200
0100
2400
2300
2200
2100
2000
30
5
10
15
20
25
30
5
10
15
20
25
30
5
10
15
20
25
30
may
June
July
August

Table 2

Return Record of Tagged Turtles

1980 SEA TURTLE Inventory

Dates

Date	Tag #	Return	Return	Return	Return	Return
6-17-80	651					
"	652	7-3-80 ⊗	7-16-80	7-28-80		
6-19-80 ⊗	653					
"	654					
6-20-80	655	7-3-80 ⊗	retag 640 7-15-80	7-28-80	8-8-80	
Green 6-25-80	657*	Retag 669 7-9-80	retag 649 7-21-80	8-2-80	② 8-17-80	
6-26-80 ⊗	NC0001	7-11-80 ⊗	7-24-80			
6-27-80 ⊗	648	7-24-80				
"	658					
6-29-80	650	7-12-80				
"	659					
6-30-80	660	retag 672 7-14-80	7-16-80	8-1-80		
7-1-80 ⊗	661	7-14-80	7-26-80 ⊗	8-8-80		
7-3-80	662					
7-6-80	663					
" ⊗	664					
7-7-80	667	8-18-80 ⊗	8-20-80			
7-8-80 ⊗	665					
" ⊗	666					
7-10-80 ⊗	670	7-23-80				
7-11-80 ⊗	671					
7-14-80	673					
" ⊗	674					
7-15-80	675					
7-17-80	641					
" ⊗	642	7-18-80				
7-18-80 ⊗	647	7-20-80	8-2-80			
7-19-80	645					

Title

Date

Date	Tag #	return	return	return	return	return	return
7-23-80	646						
7-25-80	644						
7-30-80	633						
8-1-80 ①	639	8-14-80					
8-3-80	638						
8-4-80	634						
8-5-80	637						
8-7-80 ⊗	636	8-12-80					
8-9-80 ⊗	635						

⊗ - Turtle was tagged but did Not Nest.
① - Turtle previously tagged but tag missing - tag hole present
② - Crawl Body pit and eggs indicative of Green Turtle but turtle Not observed.

		Tagged or	
1	turtle	observed	5 times
4	turtles	observed	4 times
3	turtles	observed	3 times
4	turtles	observed	2 times
23	turtles	observed	1 time

59 sightings of tagged turtles

AERIAL SURVEY TABLE # 3

	MAY 30				MAY 31			
	N	FC	T	SB	N	FC	T	SB
ONSLOW BEACH	1	0	0	2	0	0	0	1
BROWN'S ISLAND	0	2	0	1	0	0	0	2
BEAR ISLAND	0	0	0	0	2	0	0	0

	JUNE 13				JUNE 14			
	N	FC	T	SB	N	FC	T	SB
ONSLOW BEACH	0	1	2	1	0	1	0	3
BROWN'S ISLAND	0	0	0	0	0	0	1	1
BEAR ISLAND	1	0	0	0	0	0	0	3

	JULY 1				JULY 2				JULY 11				JULY 12				JULY 31			
	N	FC	T	SB	N	FC	T	SB	N	FC	T	SB	N	FC	T	SB	N	FC	T	SB
ONSLOW BEACH	0	0	0	0	0	2	0	0	1	3	2	0	1	1	0	2	1	0	0	1
BROWN'S ISLAND	0	0	1	0	5	1	0	0	0	0	0	1	3	0	0	1	4	1	2	1
BEAR ISLAND	2	0	2	0	2	2	0	0	0	0	0	0	1	0	0	2	4	1	0	0

	AUG 1				AUG 11				AUG 12			
	N	FC	T	SB	N	FC	T	SB	N	FC	T	SB
ONSLOW BEACH	0	1	0	1	2	0	0	0	1	0	0	2
BROWN'S ISLAND	2	0	0	2	3	0	0	1	2	0	0	1
BEAR ISLAND	1	0	0	0	2	0	0	0	1	2	0	1

TOTAL	N	FC	T	SB
ONSLOW BEACH	7	9	4	13
BROWNS ISLAND	19	4	4	11
BEAR ISLAND	16	5	2	6
	42	18	10	30

KEY N - FRESH NESTS
FC - " FALSE CRAWLS
T - TURTLES SIGHTED OFF COAST
SB - SHRIMP BOATS

~~1980 Sea Turtle Project~~

Table 5 Ground Survey Numbers

Date	Crawls No Nest	crawls / nest	Total crawls
5-30-80		1	1
6-2-80		1	1
6-4-80	1	1	2
6-9-80	1		1
6-11-80	1	11	3
6-13-80	1		1
6-14-80	11		2
6-17-80		11	2
6-19-80	1	1	2
6-20-80	1	1	2
6-21-80	1	1	2
6-22-80		11	2
6-25-80		1	1
6-26-80	11		2
6-27-80	1	1	2
6-29-80		11	2
6-30-80	1	1	2
7-1-80	1		1
7-2-80	1		1
7-3-80	11	1	3
7-4-80		111	3
7-5-80		1	1
7-6-80	1	11	3
7-7-80		1	1
7-8-80	11		2
7-9-80		1	1
7-10-80	1	1	2
7-11-80	~~111~~		5

1980 Sea Turtle Project

Date	Crawls w/o nest	Crawls / Nest	Total crawls
7-12-80		I	1
7-14-80	~~IIII~~	II	7
7-15-80	III	I	4
7-16-80		III	3
7-17-80	III	I	4
7-18-80	I	I	2
7-19-80	I	I	2
7-20-80	III	I	4
7-21-80		I	1
7-23-80		II	2
7-24-80		II	2
7-25-80		I	1
7-26-80	II		2
7-27-80	~~IIII~~		5
7-28-80		II	2
7-30-80		I	1
8-1-80	I	II	3
8-2-80	I	II	3
8-3-80	II	II	4
8-4-80		I	1
8-5-70		I	1
8-7-80	I		1
8-8-80	I	II	3
8-9-80	I		1
8-10-80		II	2
8-12-80		I	1
8-14-80	I	I	2

DATE	CRAWLS W/O NEST	CRAWLS W/ NEST	TOTAL CRAWLS
8-15-80			0
16			0
17		1	1
18	1		1
19			0
20			0
21			0
22	1		1
23			0
24	1		1
25	1	1	2
26			
27			1
28			
29			
30			

Page 1

Table 1

Crawl information in relation to moon and tide cycles and weather conditions.

(Note) Nights handled as a whole not broken at midnight.

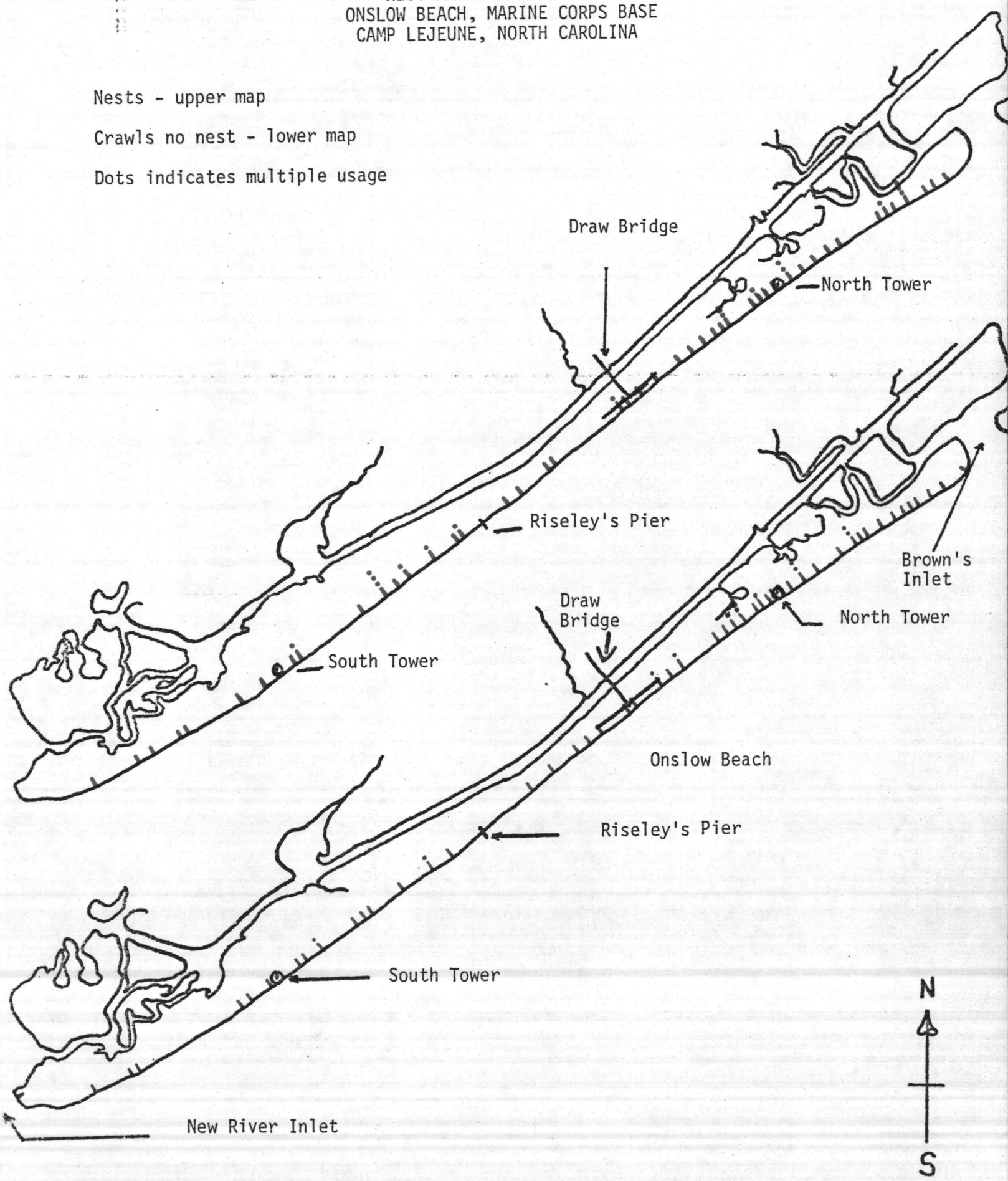
Date Night of	Moon Rise % illumin	Time of Hi Tide	Time Crawl w/o Nest	Time Crawl w/ Nest	Total	Weather	Temp. H_2O	Temp. Air
5-30-80		–		1	1	FAIR CLEAR	20.5°C	19°C
31					0			
6-1-80	2151-95%	2130			0			
2	2241-90%	2216		1	1	FAIR SCATTERED CLOUDS	22°C	21°C
3	2326-82%	2307			0			
4	0008-73%	0007	1	1	2	FAIR PARTLY CLOUDY	22°C	18.5°C
5	0047-63%	0103			0			
6	0125-51%	0207			0			
7	0203-40%	0311			0			
8	0242 29%	0412			0			
9	0323 19%	0512	1		1			
10	0407 11%	0607			0			
11	0455 5%	1835 0701	1	11	3	FAIR PARTLY CLOUDY	24.9°C	–
12	0547 1%	1926 0752			0			
13	0	2015	1		1			
14	0642-2%	2102	11		2			
15	0740-6%	2147			0			
16	0837-11%	2231			0			
17	0934-18%	2317		2100 2250	2	FAIR FEW CLOUDS	24°C	22°C
18	1030-27%	0005			0	COOL, WINDY, CLOUDY	24°C	20°C
19	1125-36%	0053	2345	2345	2	FAIR CLEAR	24.5°C	24°C
20	1219-45%	0144	2300	2210	2	FAIR CLOUDY	24°C	22.5°C
21	1313-55%	0237	2300	2300	2			
22	1407-64%	0330		2300 —	2			
23	1501-73%	0420			0	FAIR	24°C	24°C
24	1558-81%	0508			0	STORMY	23°C	24°C
25	1655-88%	0555	0030 0200	2300	3	PARTLY CLOUDY	24°C	23°C
26	1753 94%	1819 0638			0	CLOUDY	24°C	23.5°C

NEST AND CRAWL ACTIVITY
ONSLOW BEACH, MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

Nests - upper map

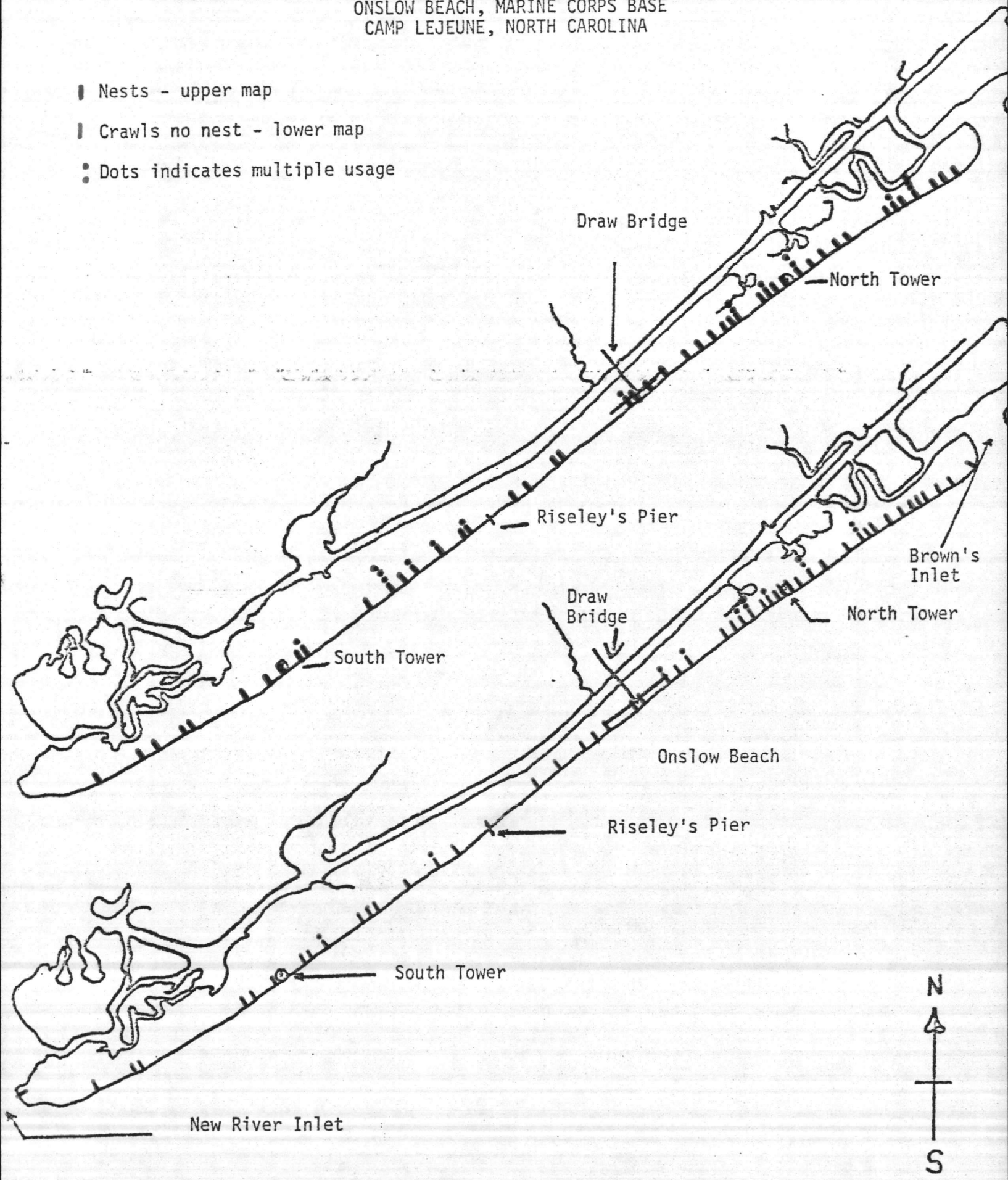
Crawls no nest - lower map

Dots indicates multiple usage



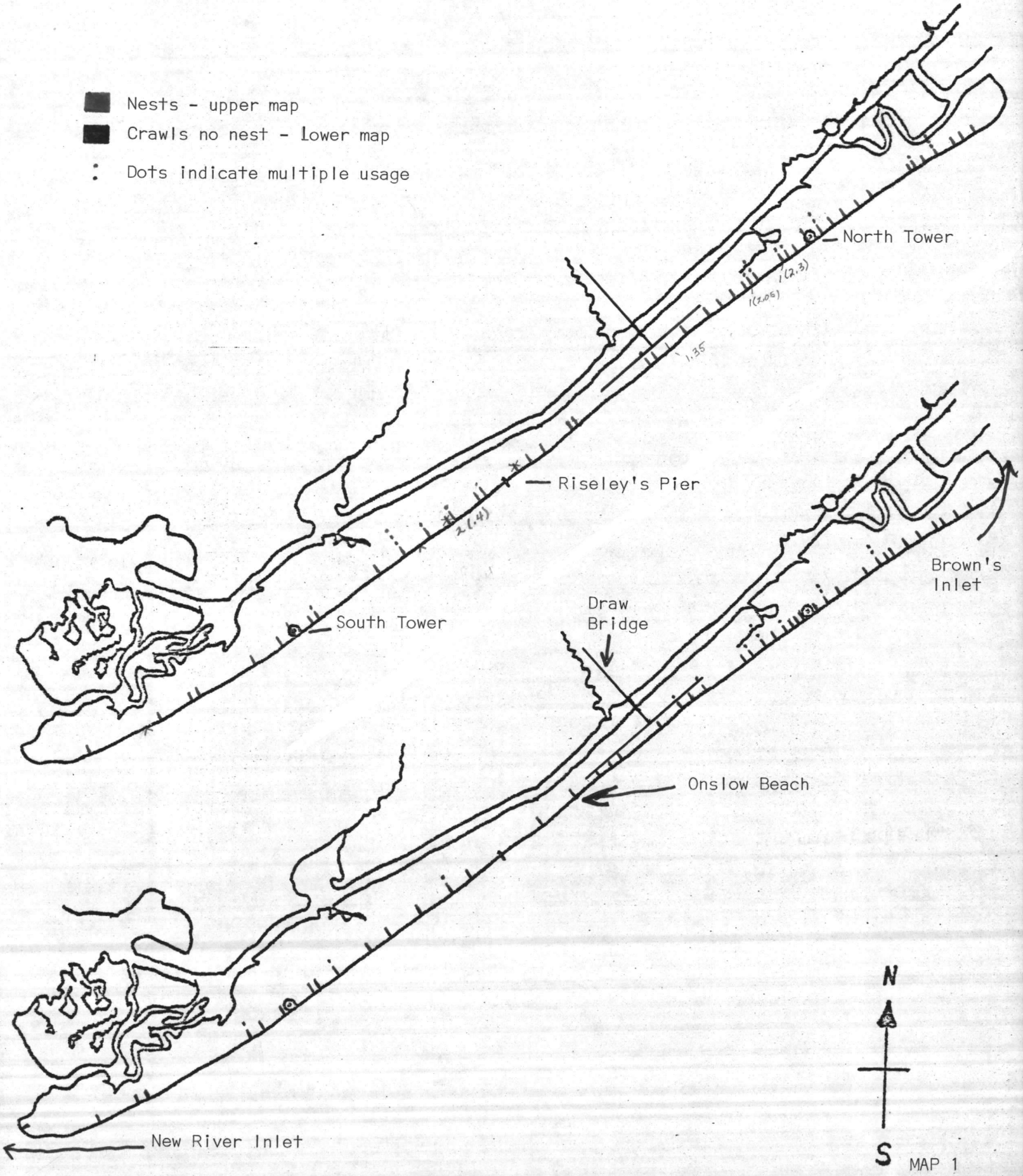
MAP 1

NEST AND CRAWL ACTIVITY
ONSLOW BEACH, MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

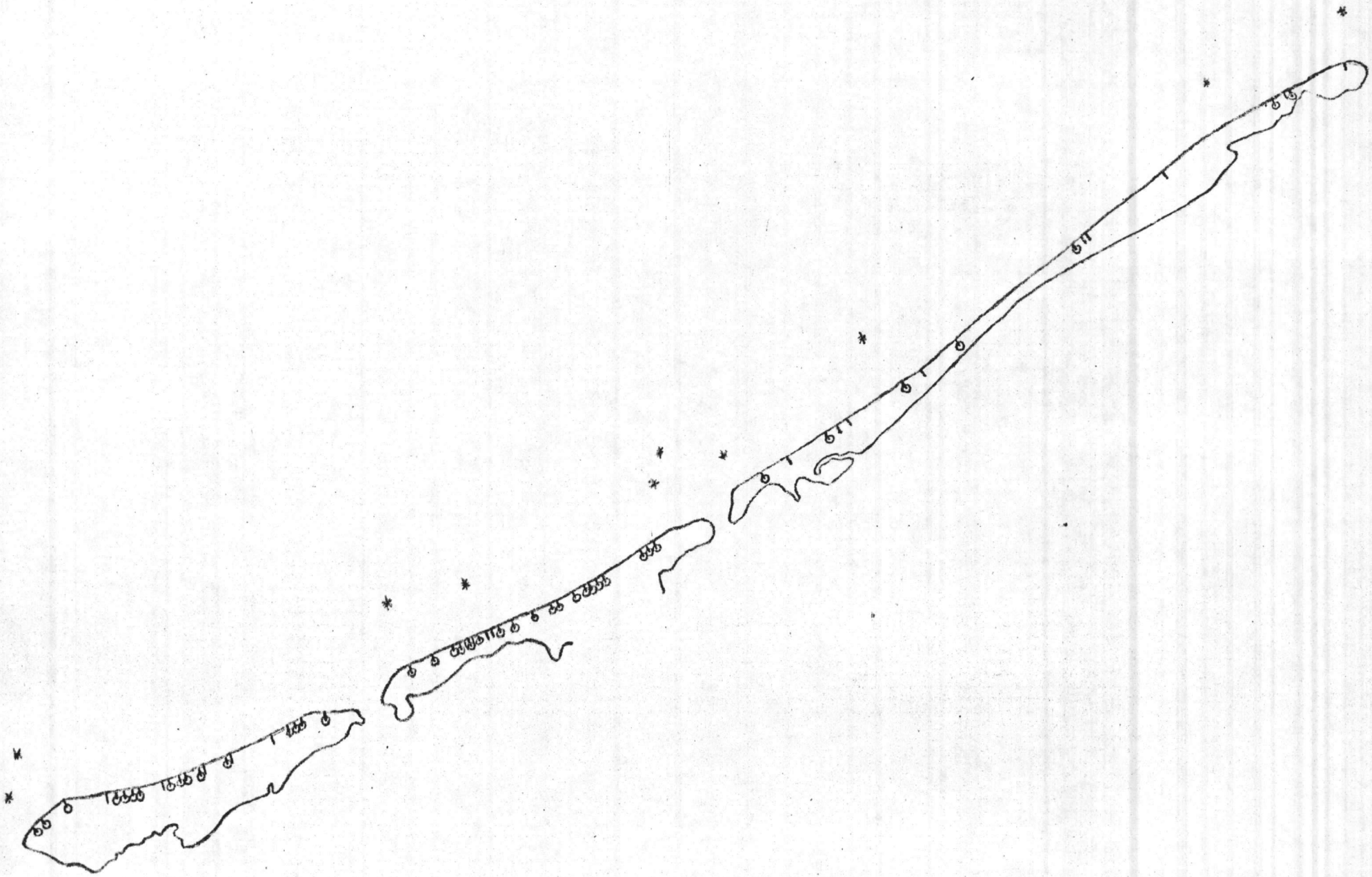


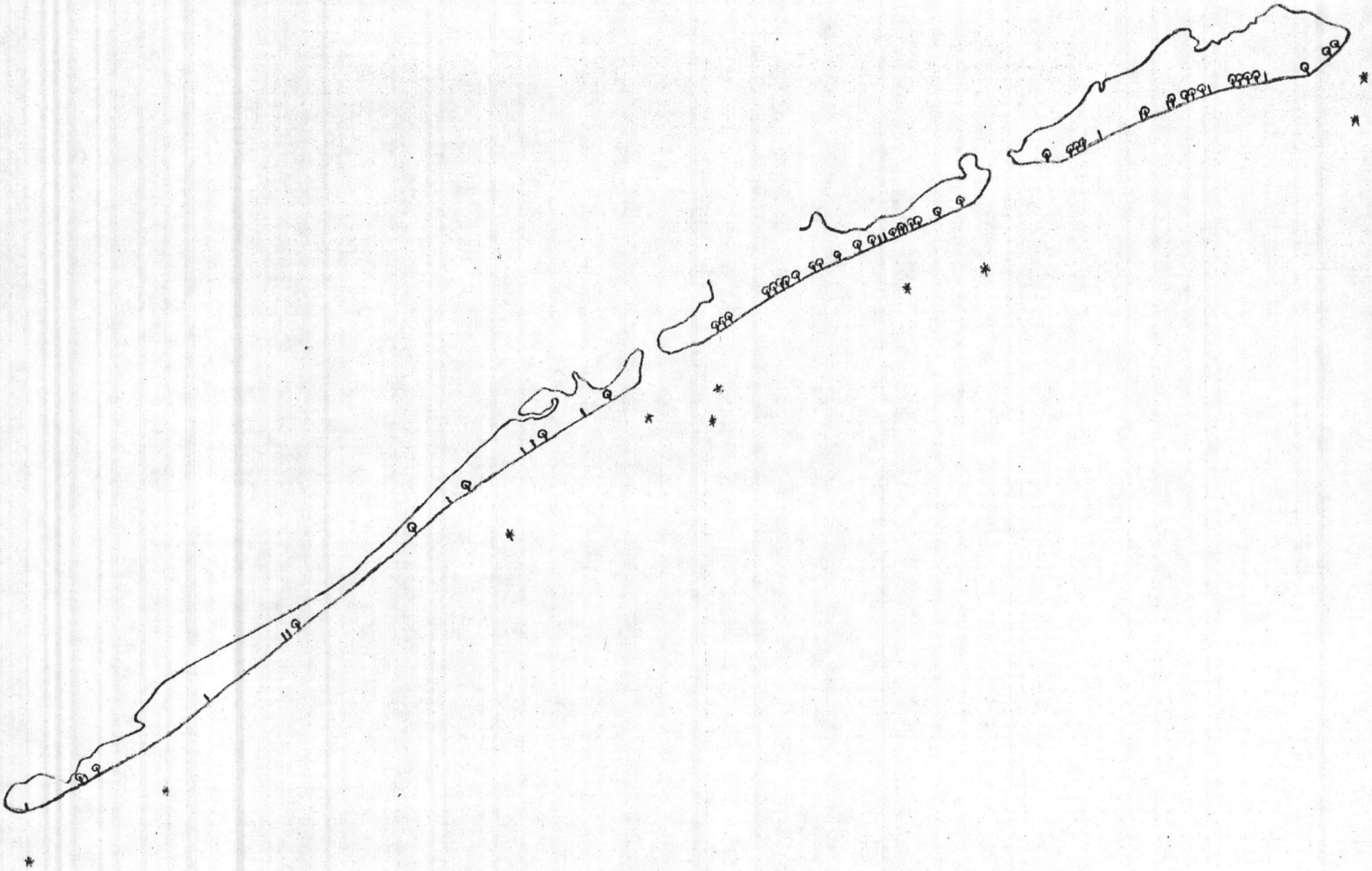
MAP 1

NEST AND CRAWL ACTIVITY
ONSLOW BEACH, MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

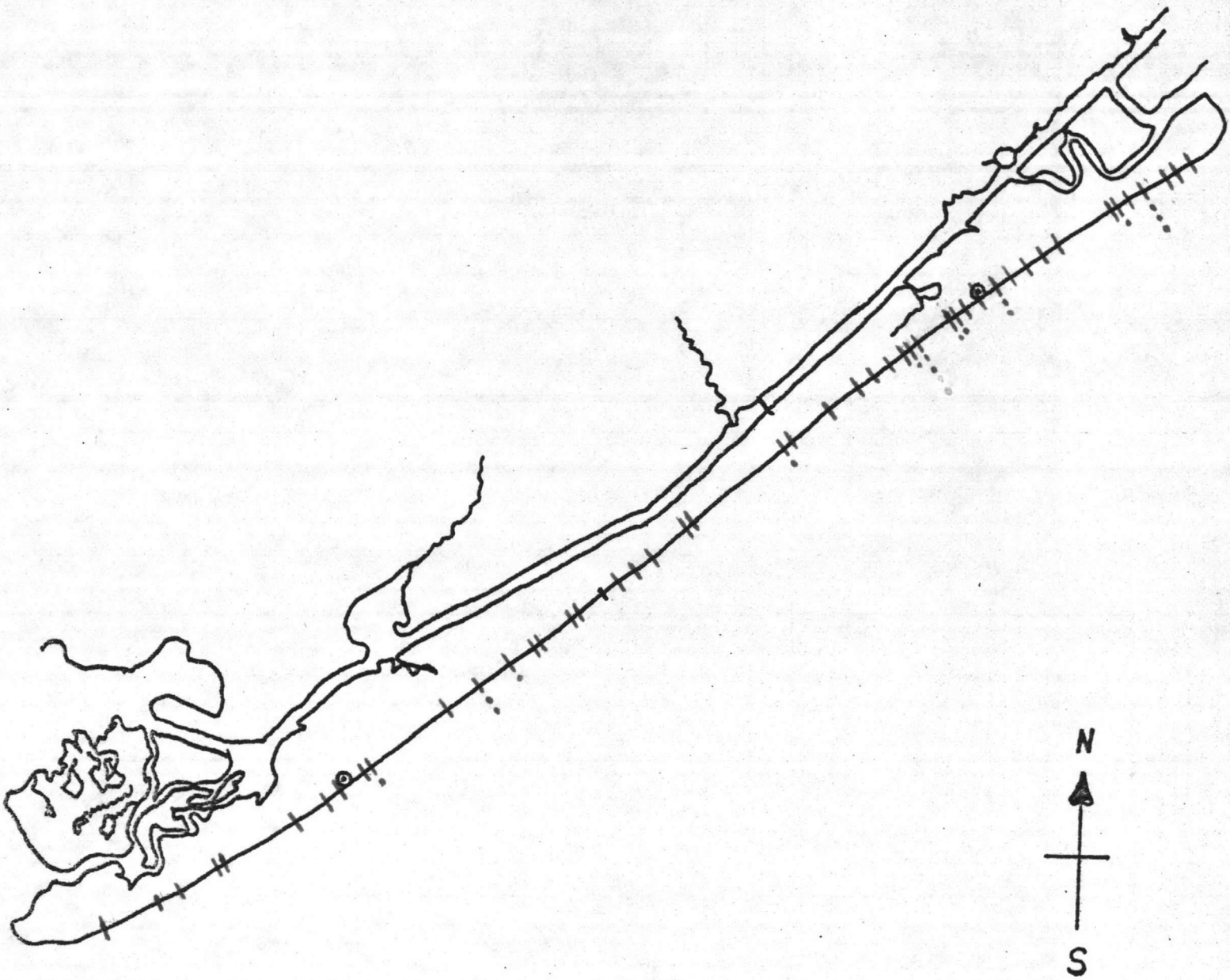


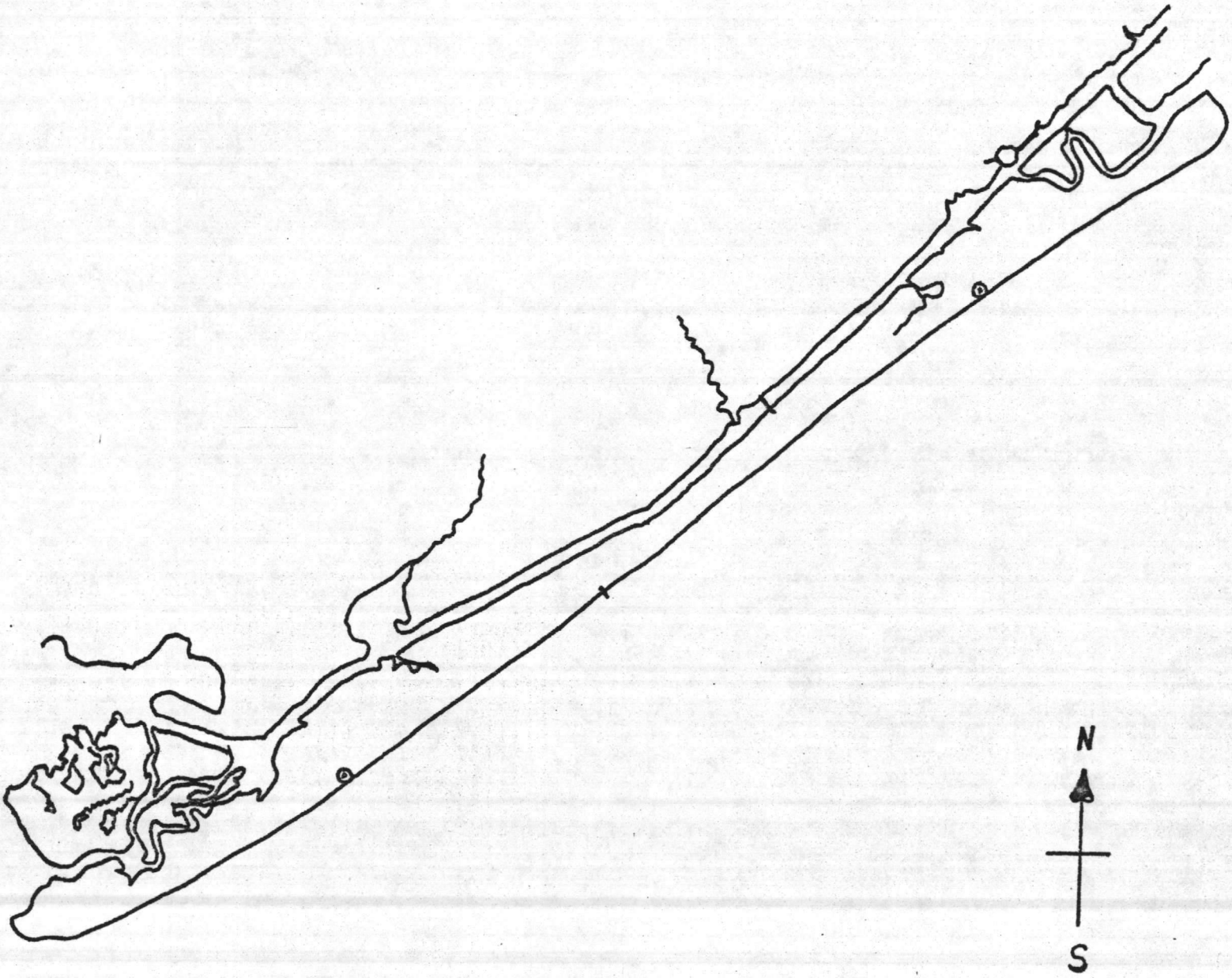
MAP 1





Nests in Red

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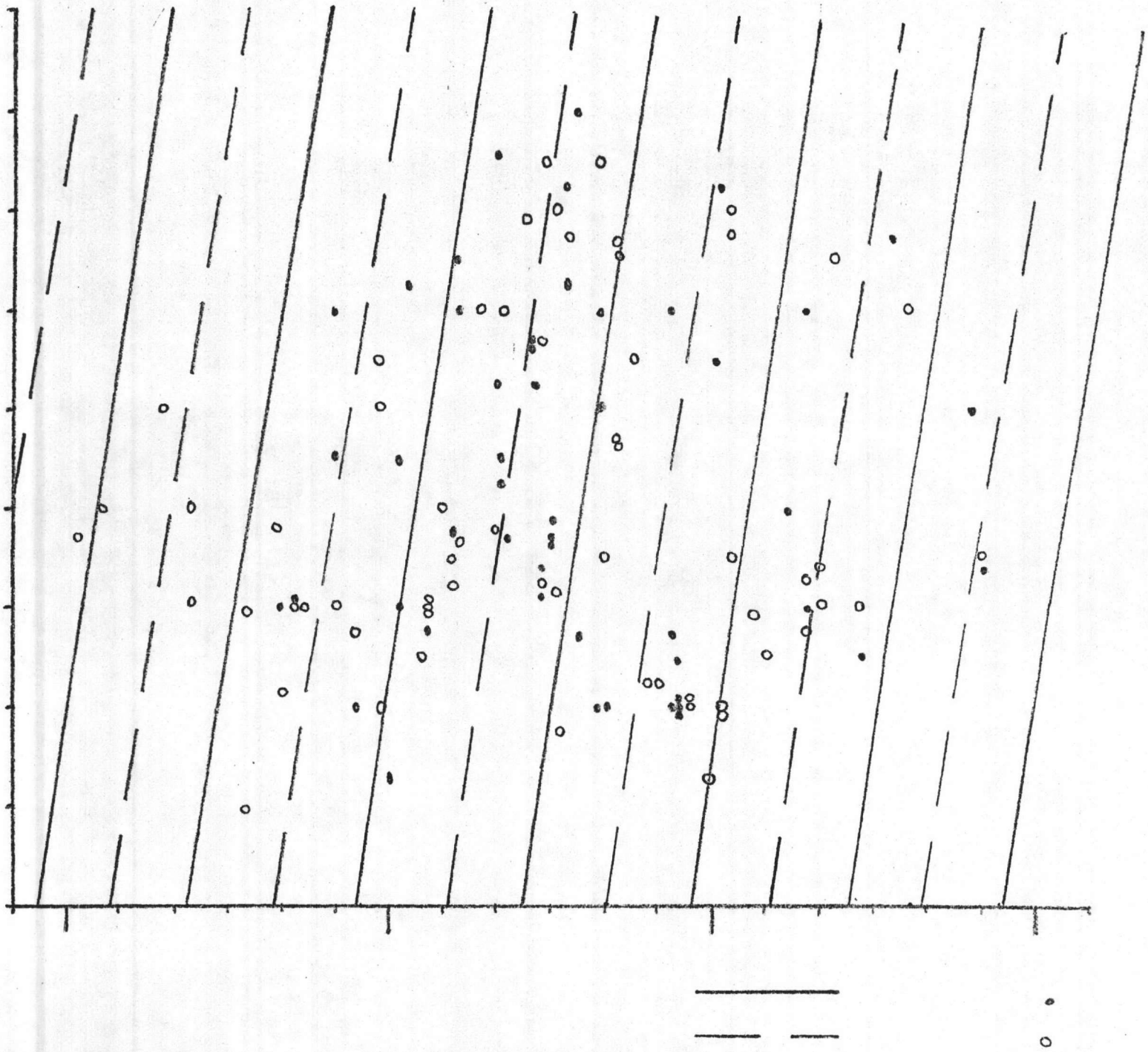

Call Dr. Schwantz
Dial 1113 ask Cherry Pt.
ask to call 726-6848
say official call

WEATHER SERVICES DIVISION
Operations Department
Marine Corps Air Station
(Helicopter)
New River, Jacksonville
North Carolina 28545

214:RTR:rtr
3139
24 April 1980

TIDE TABLES FOR THE MONTH OF JULY 1980

	DATE	HIGH	HEIGHT	LOW	HEIGHT	HIGH	HEIGHT	LOW	HEIGHT
John	-01	0940	2.9	1537	-0.1	2201	3.3	0329	-0.3
	-02	1029	3.0	1629	0.0	2251	3.3	0415	-0.2
	03	1124	3.1	1728	0.1	2346	3.2	0503	-0.1
	04	1223	3.2	1831	0.2			0557	0.0
John	✓05	1324	3.3	1938	0.3	0043	3.1	0654	0.1
	✓06	1429	3.4	2045	0.3	0148	3.0	0755	0.1
	07	1532	3.4	2151	0.2	0253	3.0	0857	0.1
	08	1633	3.5	2253	0.1	0356	2.9	0956	0.0
	09	1729	3.5	2350	0.0	0457	2.9	1055	0.0
	10	1820	3.6			0553	2.9	1150	-0.1
HP	-11	1910	3.5	0041	-0.1	0645	2.9	1241	-0.1
	✓-12	1957	3.4	0129	-0.2	0734	2.9	1329	-0.1
HP	✓13	2038	3.3	0214	-0.2	0820	2.9	1415	-0.1
	14	2120	3.2	0256	-0.2	0905	2.9	1500	0.0
HP off	15	2201	3.1	0337	-0.1	0947	2.8	1542	0.1
	16	2242	2.9	0415	0.0	1032	2.8	1629	0.2
	17	2323	2.7	0456	0.0	1114	2.7	1712	0.3
	18			0536	0.1	1159	2.7	1800	0.3
John	✓19	0006	2.6	0618	0.2	1246	2.7	1853	0.4
	✓20	0057	2.5	0703	0.2	1335	2.7	1945	0.4
	21	0149	2.3	0753	0.2	1427	2.7	2044	0.3
	22	0241	2.3	0842	0.1	1519	2.7	2139	0.2
	23	0338	2.3	0935	0.0	1612	2.8	2231	0.1
	24	0431	2.3	1026	-0.1	1702	3.0	2321	-0.1
	25	0521	2.4	1116	-0.2	1749	3.1		
HP	✓26	0612	2.6	1204	-0.3	1835	3.3	0009	-0.2
	✓27	0658	2.8	1253	-0.3	1922	3.4	0051	-0.3
	28	0745	3.0	1341	-0.3	2009	3.5	0136	-0.3
	29	0832	3.2	1431	-0.3	2054	3.5	0221	-0.3
	30	0922	3.3	1523	-0.2	2144	3.5	0307	-0.3
John	-31	1013	3.4	1617	0.0	2233	3.5	0353	-0.2

ALL TIMES ARE EASTERN STANDARD TIME

FOR BOGUE INLET:
HEIGHTS - High 0.8 feet less
- Low No Correction
TIMES - High 3 Minutes Earlier
- Low 2 Minutes Earlier

FOR TOPSAIL INLET:
HEIGHTS - No Corrections
TIMES - High 4 Minutes Later
- Low 43 Minutes Later

WEATHER SERVICES DIVISION
Operations Department
Marine Corps Air Station
(Helicopter)
New River, Jacksonville
North Carolina 28545

214:RTR:rtr
3139
24 April 1980

ASTRONOMICAL DATA FOR THE MONTH OF JULY 1980

DATE	SUNRISE	SUNSET	MOONRISE	MOONSET	PHASE	% OF ILLUM.
01	0501	1927	2209	0819		92
02	0501	1927	2249	0925		85
03	0501	1927	2328	1031	3 Qtrs	75
04	0502	1927		1136		65
05	0502	1927	0005	1242	Half Moon	54
06	0503	1927	0043	1348		42
07	0503	1927	0122	1453		31
08	0504	1926	0203	1558	Last Qtr	29
09	0504	1926	0248	1701		13
10	0505	1926	0338	1800		6
11	0506	1926	0431	1855		2
12	0506	1925	0527	1945	New Moon	0
13	0507	1925	0624	2029		1
14	0507	1924	0722	2108		3
15	0508	1924	0819	2143		8
16	0509	1924	0914	2216		14
17	0509	1923	1009	2247	First Qtr	21
18	0511	1922	1103	2317		29
19	0511	1922	1156	2348		38
20	0511	1921	1250		Half Moon	48
21	0512	1921	1345	0020		57
22	0513	1920	1442	0055		67
23	0513	1920	1539	0133	3rd Qtr	76
24	0514	1919	1639	0216		84
25	0515	1918	1733	0305		91
26	0516	1918	1827	0400		96
27	0516	1917	1917	0500		99
28	0517	1916	2004	0605	Full Moon	100
29	0518	1915	2047	0712		98
30	0518	1914	2128	0819		93
31	0519	1914	2206	0927		86

ALL TIMES ARE EASTERN STANDARD TIME

NOTES: To compute Civil Twilight AM, subtract 27 minutes from sunrise.
To compute Civil Twilight PM, add 27 minutes to sunset.
To compute Nautical Twilight AM subtract 50 minutes from sunrise.
To compute Nautical Twilight PM, add 50 minutes to sunset.

WEATHER SERVICES DIVISION
Operations Department
Marine Corps Air Station
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New River, Jacksonville
North Carolina 28545

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24 April 1980

ASTRONOMICAL DATA FOR THE MONTH OF JULY 1980

DATE	SUNRISE	SUNSET	MOONRISE	MOONSET	PHASE	% OF ILLUM.
01	0501	1927	2209	0819		92
02	0501	1927	2249	0925		85
03	0501	1927	2328	1031	3 Qtrs	75
04	0502	1927		1136		65
05	0502	1927	0005	1242	Half Moon	54
06	0503	1927	0043	1348		42
07	0503	1927	0122	1453		31
08	0504	1926	0203	1558	Last Qtr	29
09	0504	1926	0248	1701		13
10	0505	1926	0338	1800		6
11	0506	1926	0431	1855		2
12	0506	1925	0527	1945	New Moon	0
13	0507	1925	0624	2029		1
14	0507	1924	0722	2108		3
15	0508	1924	0819	2143		8
16	0509	1924	0914	2216		14
17	0509	1923	1009	2247	First Qtr	21
18	0511	1922	1103	2317		29
19	0511	1922	1156	2348		38
20	0511	1921	1250		Half Moon	48
21	0512	1921	1345	0020		57
22	0513	1920	1442	0055		67
23	0513	1920	1539	0133	3rd Qtr	76
24	0514	1919	1639	0216		84
25	0515	1918	1733	0305		91
26	0516	1918	1827	0400		96
27	0516	1917	1917	0500		99
28	0517	1916	2004	0605	Full Moon	100
29	0518	1915	2047	0712		98
30	0518	1914	2128	0819		93
31	0519	1914	2206	0927		86

ALL TIMES ARE EASTERN STANDARD TIME

NOTES: To compute Civil Twilight AM, subtract 27 minutes from sunrise.
To compute Civil Twilight PM, add 27 minutes to sunset.
To compute Nautical Twilight AM subtract 50 minutes from sunrise.
To compute Nautical Twilight PM, add 50 minutes to sunset.

WEATHER SERVICES DIVISION
Operations Department
Marine Corps Air Station
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New River, Jacksonville
North Carolina 28545

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24 April 1980

TIDE TABLES FOR THE MONTH OF JULY 1980

DATE	HIGH	HEIGHT	LOW	HEIGHT	HIGH	HEIGHT	LOW	HEIGHT
01	0940	2.9	1537	-0.1	2201	3.3	0329	-0.3
02	1029	3.0	1629	0.0	2251	3.3	0415	-0.2
03	1124	3.1	1728	0.1	2346	3.2	0503	-0.1
04	1223	3.2	1831	0.2			0557	0.0
05	1324	3.3	1938	0.3	0043	3.1	0654	0.1
06	1429	3.4	2045	0.3	0148	3.0	0755	0.1
07	1532	3.4	2151	0.2	0253	3.0	0857	0.1
08	1633	3.5	2253	0.1	0356	2.9	0956	0.0
09	1729	3.5	2350	0.0	0457	2.9	1055	0.0
10	1820	3.6			0553	2.9	1150	-0.1
11	1910	3.5	0041	-0.1	0645	2.9	1241	-0.1
12	1957	3.4	0129	-0.2	0734	2.9	1329	-0.1
13	2038	3.3	0214	-0.2	0820	2.9	1415	-0.1
14	2120	3.2	0256	-0.2	0905	2.9	1500	0.0
15	2201	3.1	0337	-0.1	0947	2.8	1542	0.1
16	2242	2.9	0415	0.0	1032	2.8	1629	0.2
17	2323	2.7	0456	0.0	1114	2.7	1712	0.3
18			0536	0.1	1159	2.7	1800	0.3
19	0006	2.6	0618	0.2	1246	2.7	1853	0.4
20	0057	2.5	0703	0.2	1335	2.7	1945	0.4
21	0149	2.3	0753	0.2	1427	2.7	2044	0.3
22	0241	2.3	0842	0.1	1519	2.7	2139	0.2
23	0338	2.3	0935	0.0	1612	2.8	2231	0.1
24	0431	2.3	1026	-0.1	1702	3.0	2321	-0.1
25	0521	2.4	1116	-0.2	1749	3.1		
26	0612	2.6	1204	-0.3	1835	3.3	0009	-0.2
27	0658	2.8	1253	-0.3	1922	3.4	0051	-0.3
28	0745	3.0	1341	-0.3	2009	3.5	0136	-0.3
29	0832	3.2	1431	-0.3	2054	3.5	0221	-0.3
30	0922	3.3	1523	-0.2	2144	3.5	0307	-0.3
31	1013	3.4	1617	0.0	2233	3.5	0353	-0.2

ALL TIMES ARE EASTERN STANDARD TIME

FOR BOGUE INLET:
HEIGHTS - High 0.8 feet less
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TIMES - High 3 Minutes Earlier
- Low 2 Minutes Earlier

FOR TOPSAIL INLET:
HEIGHTS - No Corrections
TIMES - High 4 Minutes Later
- Low 43 Minutes Later

WEATHER SERVICES DIVISION
Operations Department
Marine Corps Air Station
(Helicopter)
New River, Jacksonville
North Carolina 28545

214:RTR:rtr
3139
25 April 1980

TIDE TABLES FOR THE MONTH OF AUGUST 1980

DATE	HIGH	HEIGHT	LOW	HEIGHT	HIGH	HEIGHT	LOW	HEIGHT
01	1106	3.5	1715	0.1	2328	3.3	0442	-0.1
02	1205	3.5	1816	0.3			0536	0.1
03	1306	3.5	1921	0.4	0026	3.2	0634	0.2
04	1412	3.5	2030	0.5	0129	3.1	0735	0.3
05	1516	3.5	2139	0.4	0235	3.0	0840	0.3
06	1617	3.5	2241	0.3	0343	3.0	0942	0.3
07	1713	3.5	2337	0.2	0444	3.0	1043	0.2
08	1806	3.5			0540	3.0	1136	0.1
09	1852	3.4	0025	0.1	0630	3.0	1227	0.1
10	1934	3.4	0108	0.0	0715	3.0	1313	0.0
11	2013	3.3	0149	-0.1	0758	3.0	1354	0.0
12	2052	3.2	0227	-0.1	0838	3.0	1435	0.0
13	2129	3.1	0303	0.0	0915	3.0	1515	0.1
14	2206	2.9	0339	0.0	0953	3.0	1554	0.2
15	2243	2.8	0413	0.1	1032	2.9	1635	0.3
16	2323	2.7	0451	0.2	1114	2.9	1720	0.4
17			0529	0.3	1157	2.8	1808	0.5
18	0010	2.5	0613	0.3	1246	2.8	1901	0.5
19	0100	2.5	0701	0.4	1340	2.8	1958	0.5
20	0158	2.4	0756	0.3	1437	2.9	2058	0.4
21	0258	2.5	0855	0.3	1533	3.0	2156	0.3
22	0356	2.6	0954	0.1	1629	3.1	2247	0.1
23	0452	2.7	1051	0.0	1721	3.3	2337	0.0
24	0543	3.0	1143	-0.1	1810	3.5		
25	0634	3.2	1235	-0.2	1859	3.6	0024	-0.2
26	0723	3.4	1326	-0.3	1948	3.7	0110	-0.2
27	0812	3.6	1417	-0.2	2036	3.8	0156	-0.3
28	0901	3.8	1510	-0.1	2125	3.7	0243	-0.2
29	0953	3.8	1603	0.0	2216	3.6	0331	-0.1
30	1047	3.8	1659	0.3	2310	3,5	0422	0.1
31	1144	3.8	1800	0.5			0514	0.3

ALL TIMES ARE EASTERN STANDARD TIME

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FOR TOPSAIL INLET:
HEIGHTS - No Cor ections
TIMES - High 4 Minutes Later
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WEATHER SERVICES DIVISION
Operations Department
Marine Corps Air Station
(Helicopter)
New River, Jacksonville
North Carolina 28545

214:RTR:CWS:rtr
3139
25 April 1980

ASTRONOMICAL DATA FOR THE MONTH OF AUGUST 1980

DATE	SUNRISE	SUNSET	MOONRISE	MOONSET	PHASE	% OF ILLUM.
01	0520	1913	2224	1031	3 Qtrs	77
02	0521	1912	2323	1140		67
03	0522	1911		1246	Half Moon	56
04	0522	1910	0003	1350		44
05	0523	1909	0047	1453		33
06	0524	1908	0134	1553	Last Qtr	23
07	0524	1907	0224	1648		15
08	0525	1906	0318	1739		8
09	0526	1905	0414	1824		3
10	0527	1904	0511	1905		1
11	0527	1903	0608	1942	New Moon	0
12	0528	1902	0705	2016		1
13	0529	1901	0800	2048		5
14	0530	1900	0854	2118		10
15	0530	1859	0948	2148		16
16	0531	1857	1041	2220	First Qtr	23
17	0532	1856	1135	2253		32
18	0533	1855	1230	2329		41
19	0533	1854	1326		Half Moon	51
20	0534	1853	1422	0009		60
21	0535	1851	1518	0054		70
22	0536	1850	1613	0145	3rd Qtr	79
23	0536	1849	1705	0242		87
24	0537	1848	1754	0345		94
25	0538	1846	1839	0451		98
26	0539	1845	1922	0600	Full Moon	100
27	0539	1844	2002	0710		99
28	0540	1843	2042	0819		95
29	0541	1841	2121	0928		88
30	0541	1840	2202	1036		80
31	0542	1839	2245	1143	3 Qtrs	69

ALL TIMES ARE EASTERN STANDARD TIME

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To compute Nautical Twilight PM, add 50 minutes to sunset.

WEATHER SERVICES DIVISION
Operations Department
Marine Corps Air Station
(Helicopter)
New River, Jacksonville
North Carolina 28545

214:RTR:rtr
3139
29 April 1980

ASTRONOMICAL DATA FOR THE MONTH OF SEPTEMBER 1980

DATE	SUNRISE	SUNSET	MOONRISE	MOONSET	PHASE	% OF ILLUM.
01	0543	1837	2332	1247	Half Moon	58
02	0544	1836		1348		47
03	0544	1834	0021	1444		37
04	0545	1833	0114	1536	Last Qtr	27
05	0546	1832	0209	1623		18
06	0547	1830	0305	1705		11
07	0547	1829	0401	1742		5
08	0548	1828	0457	1817	New Moon	2
09	0549	1826	0553	1849		0
10	0549	1825	0647	1919		0
11	0550	1823	0741	1950		2
12	0551	1822	0834	2020	First Qtr	6
13	0552	1820	0928	2052		11
14	0552	1819	1022	2127		18
15	0553	1818	1117	2205		26
16	0554	1816	1212	2247	Half Moon	35
17	0554	1815	1307	2334		44
18	0555	1813	1401			54
19	0556	1812	1453	0027		64
20	0557	1810	1542	0125	Third Qtr	74
21	0557	1809	1628	0229		83
22	0558	1808	1712	0336	Full Moon	91
23	0559	1806	1754	0445		97
24	0559	1805	1834	0556		100
25	0600	1803	1914	0707	3 Qtrs	100
26	0601	1802	1956	0818		96
27	0602	1801	2040	0928		91
28	0602	1759	2126	1035		82
29	0603	1758	2216	1140	Half Moon	73
30	0604	1756	2309	1240		62

ALL TIMES ARE EASTERN STANDARD TIME

NOTES: To compute Civil Twilight AM, subtract 27 minutes from sunrise.
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To compute Nautical Twilight PM, add 50 minutes to sunset.

WEATHER SERVICES DIVISION
Operations Department
Marine Corps Air Station
(Helicopter)
New River, Jacksonville
North Carolina 28545

214:RTR:rtr
3139
28 April 1980

TIDE TABLES FOR THE MONTH OF SEPTEMBER 1980

TE	HIGH	HEIGHT	LOW	HEIGHT	HIGH	HEIGHT	LOW	HEIGHT
01	1247	3.7	1905	0.6	0010	3.3	0613	0.4
02	1352	3.6	2015	0.7	0114	3.2	0717	0.6
03	1458	3.5	2123	0.7	0222	3.1	0823	0.6
04	1601	3.5	2223	0.6	0328	3.1	0929	0.6
05	1656	3.5	2316	0.4	0430	3.1	1029	0.5
06	1745	3.4			0524	3.1	1121	0.4
07	1830	3.4	0001	0.3	0609	3.1	1209	0.2
08	1907	3.3	0041	0.2	0651	3.2	1252	0.2
09	1947	3.2	0118	0.1	0730	3.2	1332	0.1
10	2022	3.2	0153	0.0	0807	3.2	1410	0.1
11	2057	3.1	0227	0.1	0843	3.2	1447	0.1
12	2133	2.9	0301	0.1	0918	3.2	1524	0.2
13	2208	2.8	0333	0.2	0955	3.1	1603	0.3
14	2247	2.7	0408	0.3	1032	3.1	1644	0.4
15	2330	2.7	0445	0.4	1114	3.0	1728	0.6
16			0527	0.5	1200	3.0	1821	0.6
17	0021	2.6	0618	0.6	1255	3.0	1917	0.6
18	0119	2.6	0717	0.5	1354	3.1	2017	0.6
19	0224	2.7	0823	0.5	1458	3.2	2119	0.5
20	0327	2.9	0927	0.3	1556	3.3	2212	0.3
21	0425	3.1	1028	0.2	1654	3.5	2305	0.1
22	0518	3.4	1126	0.0	1745	3.6	2356	-0.1
23	0611	3.6	1218	-0.2	1837	3.7		
24	0701	3.9	1309	-0.2	1928	3.8	0043	-0.2
25	0751	4.0	1401	-0.2	2016	3.8	0131	-0.2
26	0841	4.1	1453	-0.1	2107	3.8	0218	-0.1
27	0933	4.1	1547	0.1	2158	3.7	0308	0.0
28	1026	4.0	1643	0.3	2253	3.5	0400	0.2
29	1123	3.9	1744	0.5	2352	3.4	0454	0.4
30	1225	3.7	1847	0.7			0553	0.6

ALL TIMES ARE EASTERN STANDARD TIME

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WEATHER SERVICES DIVISION
Operations Department
Marine Corps Air Station
(Helicopter)
New River, Jacksonville
North Carolina 28545

214:RTR:rtr
3139
29 April 1980

ASTRONOMICAL DATA FOR THE MONTH OF SEPTEMBER 1980

DATE	SUNRISE	SUNSET	MOONRISE	MOONSET	PHASE	% OF ILLUM.
01	0543	1837	2332	1247	Half Moon	58
02	0544	1836		1348		47
03	0544	1834	0021	1444		37
04	0545	1833	0114	1536	Last Qtr	27
05	0546	1832	0209	1623		18
06	0547	1830	0305	1705		11
07	0547	1829	0401	1742		5
08	0548	1828	0457	1817	New Moon	2
09	0549	1826	0553	1849		0
10	0549	1825	0647	1919		0
11	0550	1823	0741	1950		2
12	0551	1822	0834	2020	First Qtr	6
13	0552	1820	0928	2052		11
14	0552	1819	1022	2127		18
15	0553	1818	1117	2205		26
16	0554	1816	1212	2247	Half Moon	35
17	0554	1815	1307	2334		44
18	0555	1813	1401			54
19	0556	1812	1453	0027		64
20	0557	1810	1542	0125	Third Qtr	74
21	0557	1809	1628	0229		83
22	0558	1808	1712	0336	Full Moon	91
23	0559	1806	1754	0445		97
24	0559	1805	1834	0556		100
25	0600	1803	1914	0707	3 Qtrs	100
26	0601	1802	1956	0818		96
27	0602	1801	2040	0928		91
28	0602	1759	2126	1035		82
29	0603	1758	2216	1140	Half Moon	73
30	0604	1756	2309	1240		62

ALL TIMES ARE EASTERN STANDARD TIME

NOTES: To compute Civil Twilight AM, subtract 27 minutes from sunrise.
To compute Civil Twilight PM, add 27 minutes to sunset.
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WEATHER SERVICES DIVISION
Operations Department
Marine Corps Air Station
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New River, Jacksonville
North Carolina 28545

214:RTR:rtr
3139
28 April 1980

TIDE TABLES FOR THE MONTH OF SEPTEMBER 1980

TE	HIGH	HEIGHT	LOW	HEIGHT	HIGH	HEIGHT	LOW	HEIGHT
01	1247	3.7	1905	0.6	0010	3.3	0613	0.4
02	1352	3.6	2015	0.7	0114	3.2	0717	0.6
03	1458	3.5	2123	0.7	0222	3.1	0823	0.6
04	1601	3.5	2223	0.6	0328	3.1	0929	0.6
05	1656	3.5	2316	0.4	0430	3.1	1029	0.5
06	1745	3.4			0524	3.1	1121	0.4
07	1830	3.4	0001	0.3	0609	3.1	1209	0.2
08	1907	3.3	0041	0.2	0651	3.2	1252	0.2
09	1947	3.2	0118	0.1	0730	3.2	1332	0.1
10	2022	3.2	0153	0.0	0807	3.2	1410	0.1
11	2057	3.1	0227	0.1	0843	3.2	1447	0.1
12	2133	2.9	0301	0.1	0918	3.2	1524	0.2
13	2208	2.8	0333	0.2	0955	3.1	1603	0.3
14	2247	2.7	0408	0.3	1032	3.1	1644	0.4
15	2330	2.7	0445	0.4	1114	3.0	1728	0.6
16			0527	0.5	1200	3.0	1821	0.6
17	0021	2.6	0618	0.6	1255	3.0	1917	0.6
18	0119	2.6	0717	0.5	1354	3.1	2017	0.6
19	0224	2.7	0823	0.5	1458	3.2	2119	0.5
20	0327	2.9	0927	0.3	1556	3.3	2212	0.3
21	0425	3.1	1028	0.2	1654	3.5	2305	0.1
22	0518	3.4	1126	0.0	1745	3.6	2356	-0.1
23	0611	3.6	1218	-0.2	1837	3.7		
24	0701	3.9	1309	-0.2	1928	3.8	0043	-0.2
25	0751	4.0	1401	-0.2	2016	3.8	0131	-0.2
26	0841	4.1	1453	-0.1	2107	3.8	0218	-0.1
27	0933	4.1	1547	0.1	2158	3.7	0308	0.0
28	1026	4.0	1643	0.3	2253	3,5	0400	0.2
29	1123	3.9	1744	0.5	2352	3.4	0454	0.4
30	1225	3.7	1847	0.7			0553	0.6

ALL TIMES ARE EASTERN STANDARD TIME

FOR BOGUE INLET: HEIGHTS - High 0.8 feet less
- Low No Correction
TIMES - High 3 minutes earlier
- Low 2 minutes earlier

FOR TOPSAIL INLET: HEIGHTS - No Corrections
TIMES - High 4 minutes later
- Low 43 minutes later

WEATHER SERVICES DIVISION
Operations Department
Marine Corps Air Station
(Helicopter)
New River, Jacksonville
North Carolina 28545

455-6322
(NEW RIVER WEATHER DEPT.)

214:ALS:rtr
3139
14 March 1980

ASTRONOMICAL DATA FOR THE MONTH OF JUNE 1980

DATE	SUNRISE	SUNSET	MOONRISE	MOONSET	PHASE	% OF ILLUM.
01	0458	1918	2151	0725	3/4	95
02	0458	1919	2241	0823		90
03	0458	1919	2326	0924		82
04	0458	1920		1028		73
05	0457	1920	0008	1132	Half Moon	63
06	0457	1921	0047	1238		51
07	0457	1921	0125	1344		40
08	0457	1922	0203	1450	Last Qtr.	29
09	0457	1922	0242	1557		19
10	0457	1923	0323	1704		11
11	0457	1923	0407	1810	New Moon	5
12	0456	1924	0455	1913		1
13	0456	1924	0547	2012		Ø
14	0457	1924	0642	2105		2
15	04571	1925	0740	2152	1st Qtr.	6
16	0457	1925	0837	2234		11
17	0457	1926	0934	2311		18
18	0457	1926	1030	2344		27
19	0457	1926	1125		Half Moon	36
20	0457	1926	1219	0016		45
21	0457	1927	1313	0047		55
22	0458	1927	1407	0117		64
23	0458	1927	1501	0148	3rd Qtr.	73
24	0458	1927	1558	0222		81
25	0458	1927	1655	0258		88
26	0459	1927	1753	0339		94
27	0459	1927	1850	0425	Full Moon	98
28	0459	1927	1945	0514		100
29	0500	1927	2037	0614		99
30	0500	1927	2125	0715	3/4	97

ALL TIMES ARE EASTERN STANDARD TIME

NOTES: To compute Civil Twilight A.M., subtract 28 minutes from sunrise.
To compute Civil Twilight P.M., add 28 minutes to sunset.
To compute Nautical Twilight A.M., subtract 50 minutes from sunset.
To compute Nautical Twilight P.M., add 50 minutes to sunset.

Marine Corps Base, Camp Lejeune
Sea Turtle Inventory
Summer and Fall 1980

Head: Julian Wooten
Supervisor: Charles Peterson
Technicians: Hugh Passingham
John Fridel
Advisor: Dr. Frank Schwartz
Institute Marine Science Morehead, N.C.

The ~~Camplejeune~~ sea Turtle Inventory for 1980 is a continuation of past efforts by ~~the~~ Marine Corps Base, Camp Lejeune, North Carolina to protect endangered Loggerhead sea Turtles. The program was begun in 1974 by the Marine Corps and Camp Lejeune Biologists when evidence indicated that a high percentage of Loggerhead nests on Onslow Beach were being destroyed by predators. This action was taken prior to the addition of the Loggerhead Turtle to the endangered species list as threatened. !
The protection program to date has had ~~to~~ two main objectives. First and foremost has been to protect the Turtles and their nests from predation. The Second has been to study the nesting habits of the Loggerhead turtle.
There are several related projects that make up the entire protection program. These include: Nightly beach patrols, ~~tagging~~ adult turtles and collecting of nesting data,

continuous on-site weather observations, aerial surveys to coincide with US FWS aerial surveys, nest and hatching success, and occasional tagging of hatchlings.

The Institute of Marine science (IMS) University of North Carolina in Morehead City assists in this program. ~~IMS provides an artificial incubation center called Head Start for nests that may be threatened~~ by pedestrian or vehicular traffic, and severe ~~weather~~ ~~sturing~~ late season ~~nesting~~. IMS provides tags and assistance for tagging some newly hatched turtles. Dr. Frank Schwartz of IMS is also a valuable source of information for the Camp Lejeune Biologists.

IN 1980 the Loggerhead program took on new dimensions when an Atlantic Green Turtle, Caretta mydas mydas, was discovered nesting on Onslow Beach. The Green turtle was observed nesting four times and is believed to have nested five times since for one unobserved nest the crawl, nest, and eggs were indicative of a Green Turtle.

Results

Tabulation of data taken for the 1980 nesting season may be inspected on Maps 1,2 Tables 1,2,etc. and graphs 1,2,etc. on pages ? thru ?.

Observation:

Contains: map 1 Nest & Crawl activity Ground S.
map 2 Nest & crawl activity aerial S.
Table 1 Crawl info related to moon tide & weather
Table 2 Tag returns
Table 3 Aerial survey
Table 4 - Hatch Success
Table 5 - Ground survey Numbers
Table 6 → IMS Data
Graph 1 - Sea Turtle, Beach activity, H_2O, Tem, weather - Lunar cyc. vs. time -
Graph 2 Crawls & Nests vs Date & Tidal Cycle.
~~Graph 3 Activity vs time & tide~~
Graph 3 Monthly Nest/crawl activity

Results -

The nesting season for 1980 began with the first nest on May 30 and ended with the last nest on August 25. There were a total of 125 attempts to nest on Onslow Beach of which 65 were successful. This compares closely to the data from the 1979 nesting season where 138 attempts and 63 successful nests were observed.

37 The rate of nest predation for the 1980 nesting season was zero. very good

There were 37 nests protected by wire cages on Onslow Beach. 35 Log head 2 green

~~Three of these cages were moved some time during the incubation period, probably by pranksters. All three nests were found within several yards of the cages and when inspected there was no indication of nest tampering. These nests were #'s 067, 069 and 080. Each nest had better than 80% hatching success.~~

During the 1980 nesting season a total of 36 turtles were tagged. One turtle had been tagged previously with tag # NC0001 and was not retagged by the CLE and technicians. Of the 36 tagged turtles there were 29 return trips to the beach to lay. One Loggerhead was observed laying 5 times at 12-13 day intervals. Four loggerheads were observed 4 times, Three were observed 3 times, six were observed 2 times and 23 were observed 1 Time for a total of 59 sightings of tagged turtles. No turtles were observed that had been tagged on Onslow Beach previously. The Green Turtle was observed 4 times Retagged twice and is believed to have nested five times. The Green nests produced 819 eggs of which 387 hatched for 47.2% success. There were also 2 deformed Green young and 5 white (Not albino) young from the five nests. Two of the Green nests were Naturally incubated. Those nests contained 351 eggs of which 292 hatched for a 83.2% hatching success. The three remaining Green turtle nests were taken to IMS where they were

168
183
351

148
144
292

incubated artifically. Those nests contained 468 eggs of which 95 hatched for a 20.3% hatching success.

Logger head nests produced 6625 eggs total. Of the 6625 eggs, 4178 were allowed to hatch naturally, 3467 of those hatched for a 83 % success. IMS artifically incubated 2376 Logger-head eggs of which 1157 hatched for 48.7% success. Therefore of 6625 total loggerhead eggs layed 4624 hatched ~~out~~ for a 69.5% hatching success. When the Green Turtle and logger head are combined a total of 7444 eggs were layed of which 5011 hatched for a years success rate of 67.3 %. This over all success rate is better than the 1979 season rate which was 57 %.

The Aerial Survey results as indicated (see table three) are insignificant unless compared to the total aerial survey program as done by Consequently, they will not be discussed here other than to state totals.

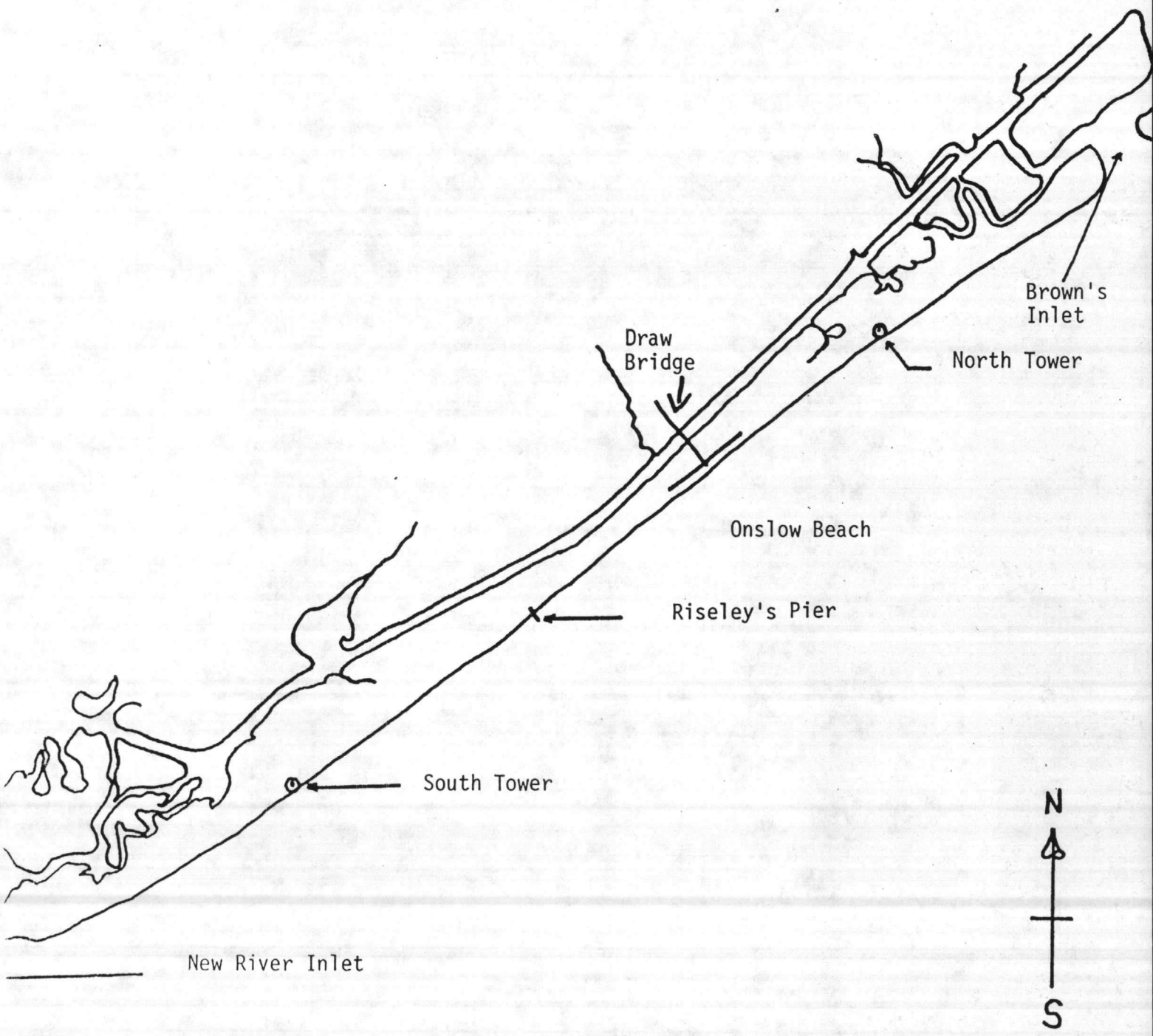
The dates that the Marine Corps provided helicopters for

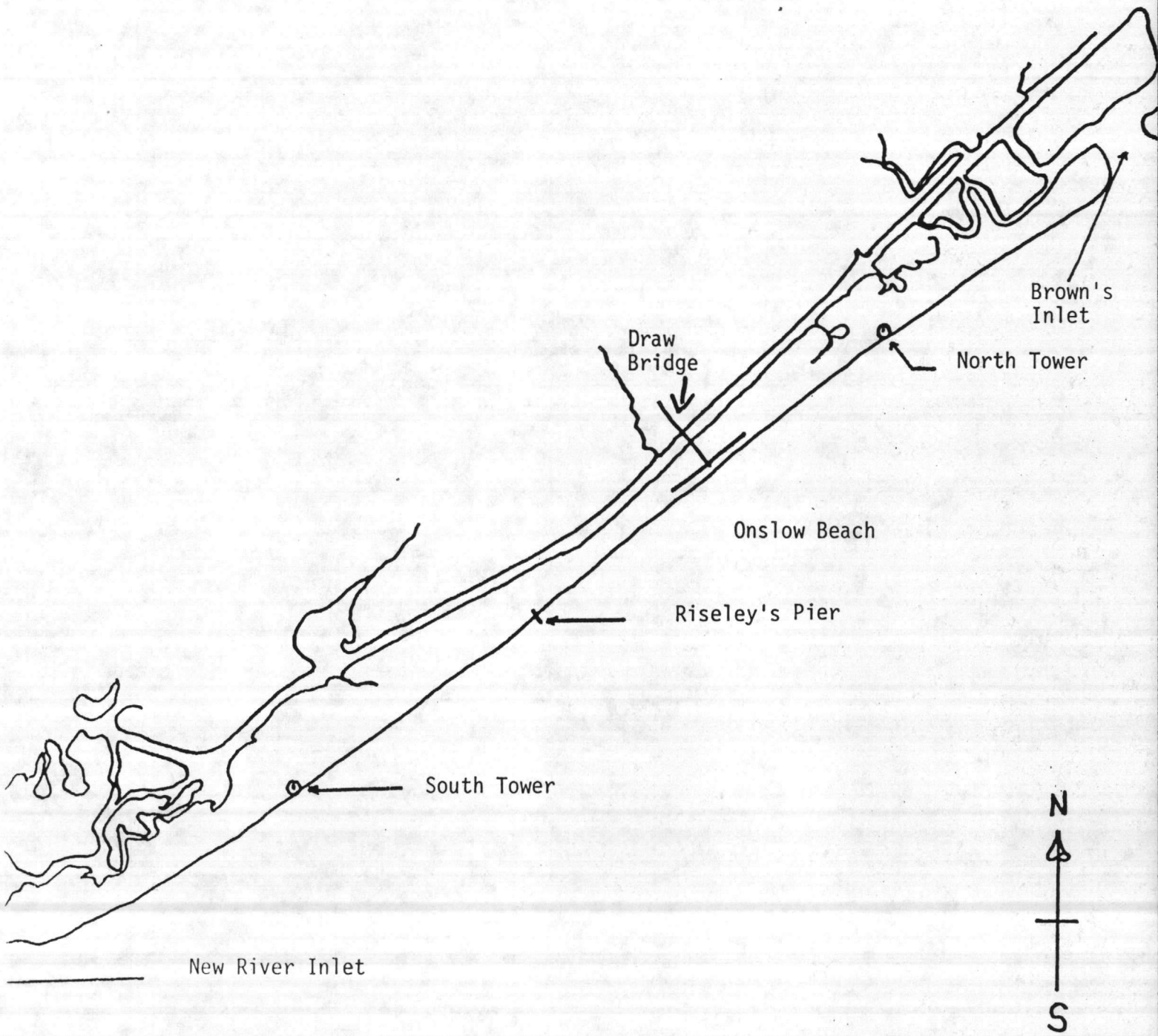
Local Aerial Surveylance were:

May 30 & 31
June 13 & 14
July 1, 2, 11, 12 & 31
August 1, 11, & 12

On these dates sightings were made on Onslow Beach, Browns Island and Bear Island "Hammocks Beach State Park". Total observations were: 42 new nests, 18 crawls without nesting, 10 swimming turtles and 30 shrimpboats within the survey bounds.

Questions concerning any data contained in this report should be directed to the Commander Marine Corps Base Camp Lejeune N.C. and Base Maintenance Branch Natural Resources and Environmental Affairs.


Brown's
Inlet
Draw
Bridge
North Tower
Onslow Beach
Riseley's Pier
South Tower
N
S
New River Inlet


Brown's
Inlet
Draw
Bridge
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N
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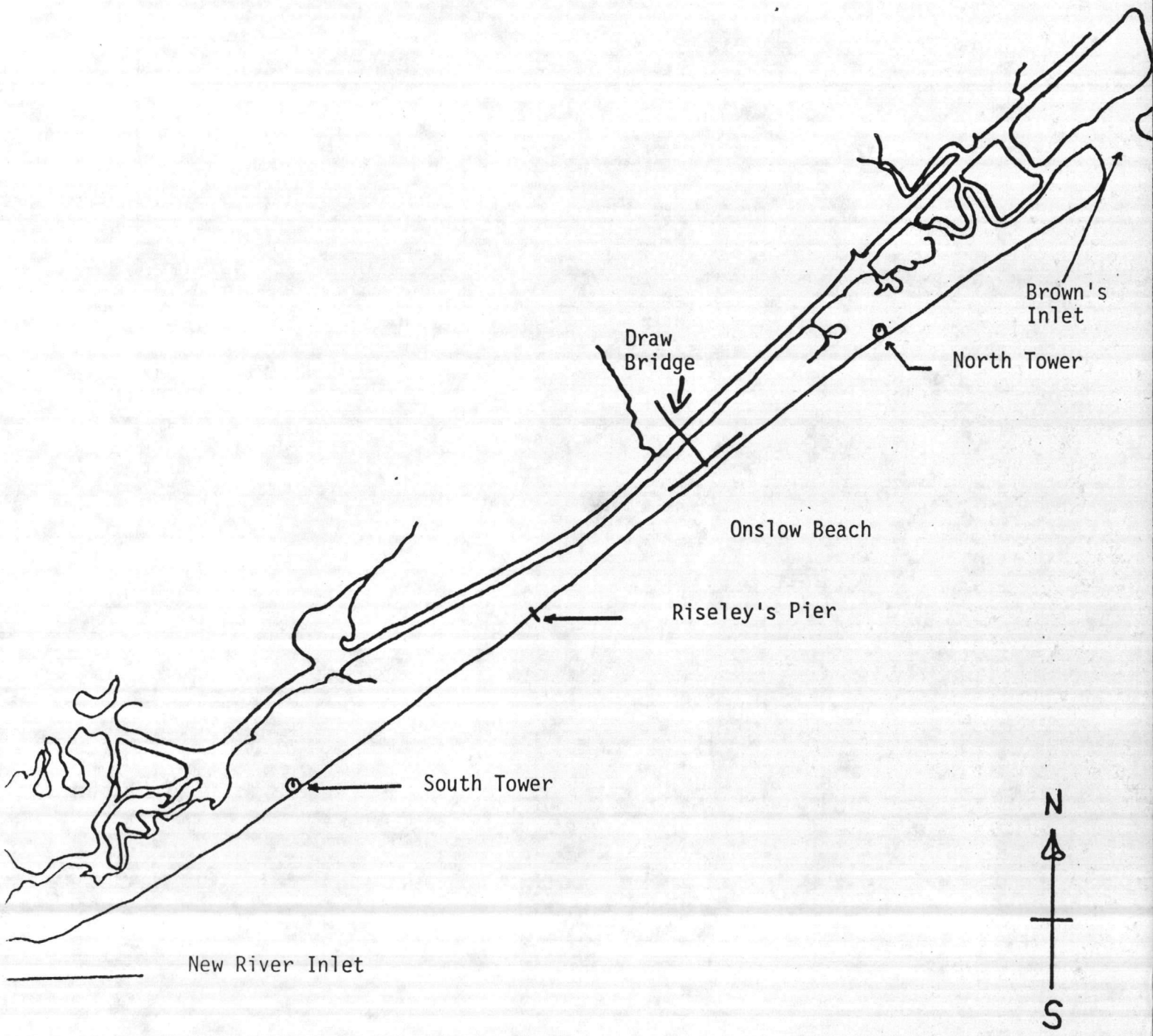
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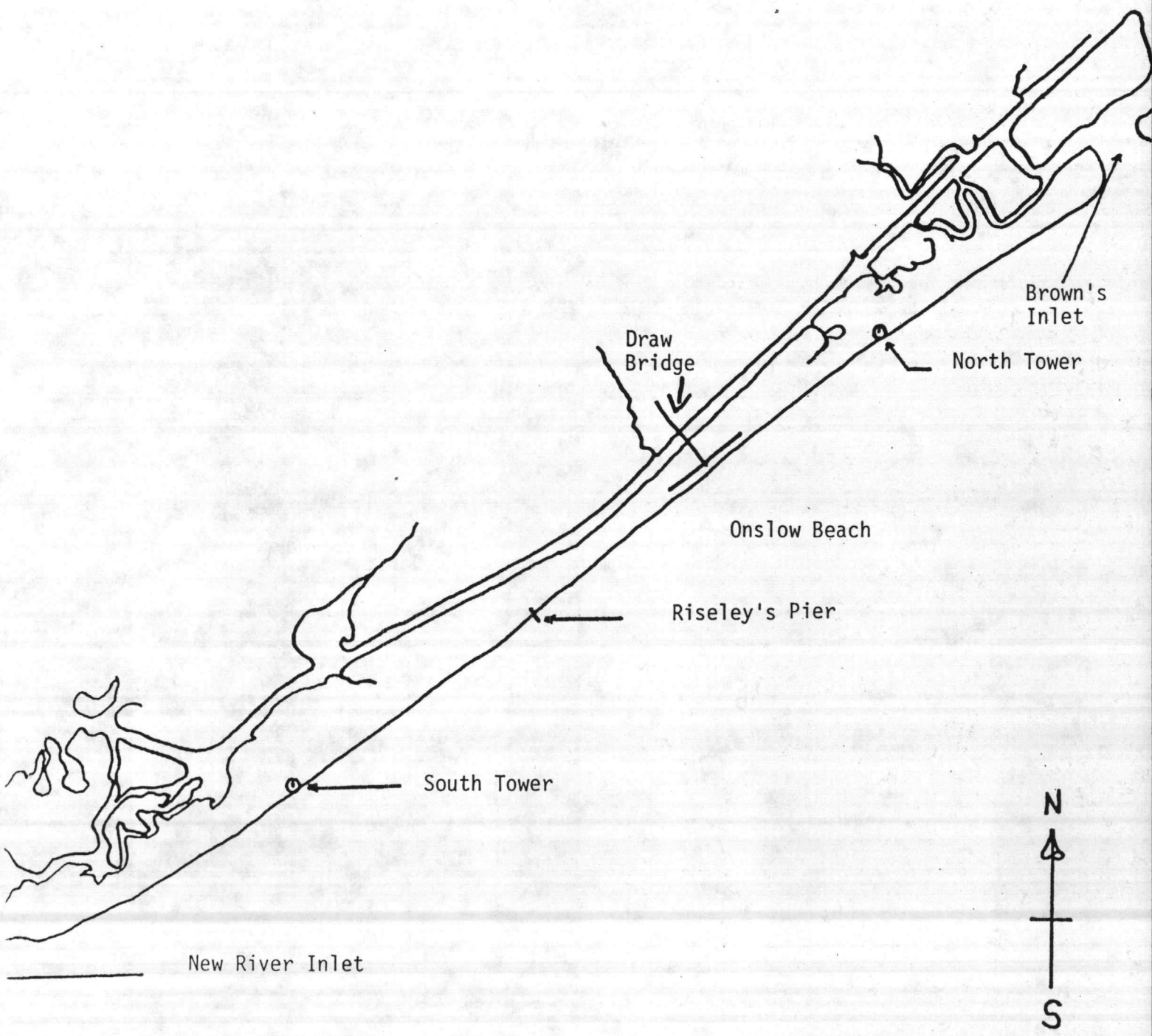
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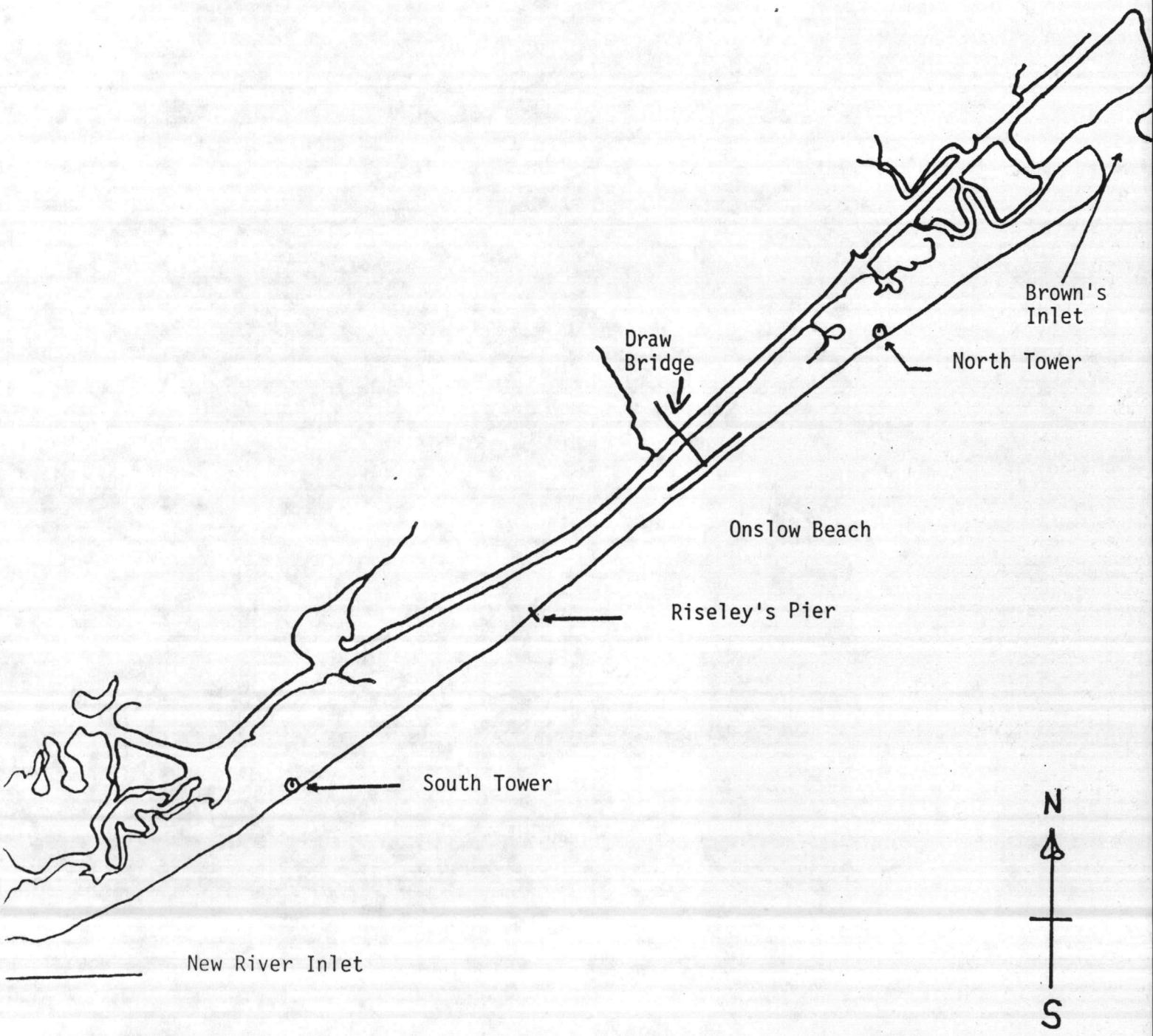
Brown's
Inlet
Draw
Bridge
North Tower
Onslow Beach
Riseley's Pier
South Tower
N
S
New River Inlet

date	CL We	Ims They	diff
6-11	60	54	6
20	121	121	
22	101	101	
29	119	112	2
7-10	124	119	5
16-17	123	120	3
20-23	96	96	
28	132	128	4
28	102	101	1
8-1	78	75	3
1	114	114	
1-2	114	114	
3	79	68	11
4	179	179	
5	133	132	1
8	104	82	22
8	104	103	1
10	120	118	2
10	80	71	9
12	83	82	1
14	112	110	2
20	75	73	2
26	99	98	1
~~2457~~		2376	76

2452

Green	CL	Ims
7/21	166	166
8/2	157	157
8/17	145	145

5011
7373
67.96 %

4178
2376
6554
819
7373
4624

70 %

70.6 %

Discrepancy between Ims data & ours.

2002 entry
Tags
Begin #651

1980

SEA TURTLE INVENTORY
(Crawl Data)

Marine Corps Base
Camp Lejeune, North Carolina

Crawl No.	Date	Time Crawl Occurred	Active Nest (✓)	Location*	Comments
001	5-30-80		✓	871240 2.4(S)	115 EGGS 67 Released 92.2%
002	6-2-80		✓	861235 3.1(S)	166 " 158 Released 3 left 97%
003	6-4-80		✓	931286 2.3(N)	134 " 4 Released 61 left 54.5%
004	"			913272 0.9(N)	CRAWL ONLY
005	6-9-80			908268 0.4(N)	" " LOST ALL EGGS
IMS 006	6-11-80		✓*	900261 0.15(S)	60 EGGS (REMOVED) IMS 24 Hatchlings 45.3%
007	"		✓	935288 2.6(N)	126 " RELOCATED 6-13-80 (NEST WAS FLOODED 6-12-80)
008	"			922279 1.7(N)	CRAWL ONLY
009	6-13-80			942292 3.1(N)	" "
010	6-14-80			865236 2.8(S)	" "
011	"			899260 0.25(S)	BODY PIT BUT NO EGGS LOCATED
012	6-17-80	2100	✓	941292 3.0(N)	102 EGGS TAG # 651 85 released 17 left 83.3%
013	"	2250	✓	934287 2.5(N)	175 EGGS TAG # 652 4 released 68%
014	6-19-80	2345		936289 2.7(N)	FALSE CRAWL TAG # 653
015	"	~ "	✓	928284 2.1(N)	134 EGGS TAG # 654 5 Bad eggs 95.5%
IMS 016	6-20-80	2210	✓*	894257 0.6(S)	TAG # 655 SENT TO IMS 121 EGGS - REMOVED
017	"	~2300		876243 2.0(S)	
IMS 018	6-22-80	2300?	✓*	882248 1.5 (S)	
019	6-21-80	2300?	✓	937289 2.7 (N)	
020	6-21-80	?	—	945295 3.3(N)	
021	6-22-80	?	✓	948297 3.5 N	

12

Summary of Instructions:
*Location measured to nearest tenth of mile to the north or
Record known or estimated time when crawl was made or throu
Conduct surveys daily during regular working hours 0800-1630
wheel drive wehicle when tide is low. Traverse the beach fl
to avoid leaving tire tracks in the sand.

Data entry
Tags
Begin #651

SEA TURTLE INVENTORY
(Crawl Data)

1980

Marine Corps Base
Camp Lejeune, North Carolina

Crawl No.	Date	Time Crawl Occurred	Active Nest (✓)	Location*	Comments
001	5-30-80		✓	871240 2.4(S)	115 EGGS 67 Released 92.2%
002	6-2-80		✓	861235 3.1(S)	166 " 158 Released 3 left 97%
003	6-4-80		✓	931286 2.3(N)	134 " 4 Released 61 left 54.5%
004	"			913272 0.9(N)	CRAWL ONLY
005	6-9-80			908268 0.4(N)	" " LOST ALL EGGS
IMS 006	6-11-80		✓*	900261 0.15(S)	60 EGGS (REMOVED) IMS 24 Hatchlings 45.3%
007	"		✓	935288 2.6(N)	126 " RELOCATED 6-13-80 (NEST WAS FLOODED 6-12-80)
008	"			922279 1.7(N)	CRAWL ONLY
009	6-13-80			942292 3.1(N)	" "
010	6-14-80			865236 2.8(S)	" "
011	"			899260 0.25(S)	BODY PIT BUT NO EGGS LOCATED
012	6-17-80	2100	✓	941292 3.0(N)	102 EGGS TAG # 651 85 released 83.3% 17 left
013	"	2250	✓	934287 2.5(N)	175 EGGS TAG # 652 4 released 68%
014	6-19-80	2345		936289 2.7(N)	FALSE CRAWL TAG # 653
015	"	~ "	✓	928284 2.1(N)	134 EGGS TAG # 654 5 Bad eggs 95.5%
IMS 016	6-20-80	2210	✓*	894257 0.6(S)	TAG # 655 SENT TO IMS 121 EGGS - REMOVED
017	"	~2300		876243 2.0(S)	CRAWL ONLY
IMS 018	6-22-80	2300?	✓*	882248 1.5 (S)	101 Eggs Removed for Ims
019	6-21-80	2300?	✓	937289 2.7 (N)	Released last 6 5 bad eggs 86 Eggs 92.6% success
020	6-21-80	?	—	945295 3.3(N)	Crawl only
021	6-22-80	?	✓	948297 3.5 N	1 Dead Hatchling in nest 28 bad eggs 143 Eggs 79.7%

12

Summary of Instructions:
*Location measured to nearest tenth of mile to the north or south of Risely Pier. Record known or estimated time when crawl was made or throught to have occurred. Conduct surveys daily during regular working hours 0800-1630 traveling by four wheel drive wehicle when tide is low. Traverse the beach flood plane in vehicle to avoid leaving tire tracks in the sand.

57%

SEA TURTLE INVENTORY
(Crawl Data)

1980

Marine Corps Base
Camp Lejeune, North Carolina

Crawl No.	Date	Time Crawl Occurred	Active Nest (√)	Location*	Comments
* 022	6-25-80	2300	✓	929284 2.1(N) 2.7(S)	867238 168 eggs 88.1% TAG #657 Relocated - 2.1 (N) GREEN SEATURTLE
023	6-26-80	0030		936289 2.7 (N)	C.O.
024	"	0200		929284 2.1 (N)	PEVIOUSLY TAGGED C.O. TAG NC0001
025	6-27-80	2200		942292 3.1 (N)	C.O. Tag 648
026	6-27-80	2245	✓	880246 1.7 (S)	91 hatchlings Tag 658 91% 100 EGGS Redeposited
027	6-29-80	0030	✓	904264 0.2 N	1 Back egg 71 hatchlings TAG #650 98.6% 72 Eggs Redeposited
IMS 028	6-29-80	2200	✓	889252 1.0 (S)	tag 659 119 Eggs Removed IMS
029	6-30-80	0100	✓	921278 1.5 (N)	78 hatchlings tag 660 113 Eggs Redeposited
030	6-30-80	2115		930285 2.2 (N)	C.O.
031	7-1-80	2300		891253 0.9 (S)	C.O. TAG #661
032	7-2-80	0030		938290 2.8 (N)	C.O.
* 033	7-2-80 7-3-80	0215		950298 3.7 (N)	Return of turtle C.O. # 652
034	7-3-80	2230	✓	945295 3.3 (N)	127 Eggs Tag 662
035	7-3-80	2245		912271 0.8 (N)	C.O. Return #655
036	7-4-80	2300	✓	946 29 3.35 (N	
037	7-4-80	2300	✓	903263 0.1 (N)	
038	7-4-80	2300	✓	879 24 1.8 (S	
039	7-5-80	2400	✓	935278 2.6 (	

(10)

Summary of Instructions:
*Location measured to nearest tenth of mile to the north o
Record known or estimated time when crawl was made or thr
Conduct surveys daily during regular working hours 0800-1630 traveling by four wheel drive wehicle when tide is low. Traverse the beach flood plane in vehicle to avoid leaving tire tracks in the sand.

22 NESTS
56.4%

SEA TURTLE INVENTORY
(Crawl Data)

1980

Marine Corps Base
Camp Lejeune, North Carolina

Crawl No.	Date	Time Crawl Occurred	Active Nest (✓)	Location*	Comments
* 022	6-25-80	2300	✓	929284 2.1(N) 2.7(S)	Relocated - 2.1 (N) 867238 168 eggs 88.1% TAG #657 GREEN SEATURTLE
023	6-26-80	0030		936289 2.7 (N)	C.O.
024	"	0200		929284 2.1 (N)	PEVIOUSLY TAGGED C.O. TAG # NC0001
025	6-27-80	2200		942292 3.1 (N)	C.O. Tag 648
026	6-27-80	2245	✓	880246 1.7 (S)	91 hatchlings Tag 658 91% 100 EGGS Redeposited
027	6-29-80	0030	✓	904264 0.2 N	1 Bad eggs 71 hatchlings TAG #650 98.6% 72 Eggs Redeposited
Ims 028	6-29-80	2200	✓	889252 1.0 (S)	tag 659 119 Eggs Removed IMS
029	6-30-80	0100	✓	921278 1.5 (N)	78 hatchlings tag 660 113 Eggs Redeposited
030	6-30-80	2115		930285 7.2 (N)	C.O.
031	7-1-80	2300		891253 0.9 (S)	C.O. TAG #661
032	7-2-80	0030		938290 2.8 (N)	C.O.
* 033	7-2-80 7-3-80	0215		950298 3.7 (N)	Return of turtle C.O. # 652
034	7-3-80	2230	✓	945295 3.3 (N)	127 Eggs Tag 662
035	7-3-80	2245		912271 0.8 (N)	C.O. Return #655 Nesting aborted due to sand fence
036	7-4-80	2300	✓	946295 3.35 (N)	152 Eggs
037	7-4-80	2300	✓	903263 0.1 (N) (0.75)	1 Egg Broken 116 Eggs Relocated to 0.1 (N) due to Holiday
038	7-4-80	2300	✓	879245 1.8 (S)	131 Eggs redeposited 7x5 Bp 17" to Eggs 30' above
039	7-5-80	2400	✓	935278 2.6 (N)	167 EGGS

(10)

Summary of Instructions:
*Location measured to nearest tenth of mile to the north or south of Risely Pier. Record known or estimated time when crawl was made or throught to have occurred. Conduct surveys daily during regular working hours 0800-1630 traveling by four wheel drive wehicle when tide is low. Traverse the beach flood plane in vehicle to avoid leaving tire tracks in the sand.

22 NESTS
56.4%

SEA TURTLE INVENTORY
(Crawl Data)

1980

Marine Corps Base
Camp Lejeune, North Carolina

Crawl No.	Date	Time Crawl Occurred	Active Nest (✓)	Location*	Comments
	~~7-5-80~~	~~? 2400~~		~~941292 3 (N)~~	~~C.O.~~
040 ~~041~~	7-6-80	2310	✓	923279 ? 2.0 (N)	TAG #663 REDEPOSITED 131 EGGS TAG # 663
041 ~~042~~	7-6-80	2345		941292 ? 3 (N)	TAG #664 C.O. TAG # 664
042 ~~043~~	7-6-80	? 2330	✓	948296 ? 3.65 (N)	78 EGGS REDEPOSITED
** 043	7-7-80	2340	✓	935288 2.6 (N)	share cage # 99 Eggs Tag 667
044	7-8-80	0200		953301 4.0 (N)	C.O. TAG # 665
045	7-8-80	0230		952298 3.8 (N)	C.O. TAG # 666
046	7-8-80 7-9-80	0200	✓	929284 0.15 (S) 2.1 (N)	RELOCATED TO 2.1 (N) TAG # 669 183 EGGS GREEN SEATURTLE
047	7-9-80 7-10-80	0500		932286 2.35 (N)	C.O. TAG # 670
Ims 048	7-10-80	2345	✓	892255 0.8 (S)	124 Eggs Removed IMS
049	7-11-80	0015		860234 3.1 (S)	CO
050	7-11-80	0030		854234 3.8 (S)	CO
051	7-11-80	0115		930285 2.2 (N)	CO
052	7-11-80	0335		882247 1.45 (S)	C.O. TAG # 671
053	7-11-80	2340		946295 3.4 (N)	Co. Tag NC0001
054	7-12-80	0200	✓	939291 2.9 (N)	#650 Return 89 Eggs Redeposited
055	7-13-80 7-14-80	0140		894256 0.65 (S)	RETAGGED #672 C.O. RETURN OF # 660
056	7-14-80	? 0115		897258 0.40 (S)	C.O.
057	7-14-80	? 0140		918275 1.3 (N)	C.O.
058	7-14-80	0250	✓	919296 RELOCATED TO 1.35 (N) 2.05 (N) 927283	TURTLE NESTED IN HEAVILY USED AREA 109 EGGS RELOCATED
					RETURN OF TURTLE # 661

7

Summary of Instructions:
*Location measured to nearest tenth of mile to the north or south of Risely Pier. Record known or estimated time when crawl was made or throught to have occurred. Conduct surveys daily during regular working hours 0800-1630 traveling by four wheel drive wehicle when tide is low. Traverse the beach flood plane in vehicle to avoid leaving tire tracks in the sand.

50%

SEA TURTLE INVENTORY
(Crawl Data)

1980

Marine Corps Base
Camp Lejeune, North Carolina

Crawl No.	Date	Time Crawl Occurred	Active Nest (✓)	Location*	Comments
059	7-14-80	2315	✓	927283 2.05(N)	TAG #673 118 EGGS REDEPOSITED
060	7-14-80	2320		933286 2.45(N)	C.O. TAG #674
061	7-14-80	? 2310		943293 3.15(N)	C.O. MISSED TURTLE
062	7-15-80	0040	✓	948297 3.50(N)	97 EGGS TAG #675
063	7-15-80	2340		877244 1.90(S)	C.O.
064	7-15-80	2340		880245 1.75(S)	C.O
065	7-15-80	2350		889253 1.05(S)	RETAGGED #640 C.O. RETURN OF #655
066	7-16-80	2145	✓	915273 2.8(N)	RETURN #[illegible]
067	7-16-80	2310	✓	910268 0.6(N)	
068	7-17-80	0215		949296 3.6(N)	
069	7-17-80	0300	✓	909267 0.55(N)	
070	7-17-80	0315		923278 1.6 N	
071	7-17-80	2240		933276 2.4(N)	
IMS 072	7-16-80	0330	✓	893254 0.8(S)	
073	7-18-80	0245	✓	925281 1.8(N)	
074	7-18-80	0400		948297 3.55(N)	
075	7-18-80 7-19-80	0305	✓	948247 3.5(N)	160 Eggs Redep Tag #645
076	7-19-80	2200		921278 1.5(N)	CO
077	7-20-80	0100		910268 0.6(N)	CO untagged turtle
078	7-20-80	0200		922279 1.7(N)	CO
079	7-20-80	2200		932286 2.35(N)	CO

(8)

Summary of Instructions:
*Location measured to nearest tenth of mile to the north or south of Risely Pier. Record known or estimated time when crawl was made or throught to have occurred. Conduct surveys daily during regular working hours 0800-1630 traveling by four wheel drive wehicle when tide is low. Traverse the beach flood plane in vehicle to avoid leaving tire tracks in the sand.

(37)

47%

SEA TURTLE INVENTORY
(Crawl Data)

1980

Marine Corps Base
Camp Lejeune, North Carolina

Crawl No.	Date	Time Crawl Occurred	Active Nest (✓)	Location*	Comments
059	7-14-80	2315	✓	927283 2.05(N)	TAG #673 118 EGGS REDEPOSITED
060	7-14-80	2320		933286 2.45(N)	C.O. TAG #674
061	7-14-80	? 2310		943293 3.15(N)	C.O. MISSED TURTLE
062	7-15-80	0040	✓	948297 3.50(N)	97 EGGS TAG #675
063	7-15-80	2340		877244 1.90(S)	C.O.
064	7-15-80	2340		880245 1.75(S)	C.O
065	7-15-80	2350		889253 1.05(S)	RETAGGED #640 C.O. RETURN OF #655
066	7-16-80	2145	✓	915273 2.8(N)	RETURN #652 131 EGGS REDEPOSITED
067	7-16-80	2310	✓	910268 0.6(N)	RETURN OF #672 99 EGGS
068	7-17-80	0215		949296 3.6(N)	C.O. Turtle in surf only
069	7-17-80	0300	✓	909267 0.55(N)	Tag # 641 131 Eggs Redeposited
070	7-17-80	0315		923278 1.6 N	CO No see turtle
071	7-17-80	2240		933276 2.4(N)	TAG #642 C.O. TURTLE DUG 2 B.P. NO EGGS
IMS 072	7-16-80	0330	✓	893254 0.8(S)	123 Eggs Removed for IMS
073	7-18-80	0245	✓	925281 1.8(N)	1 small 1 Broken 119 Eggs Tag # 642
074	7-18-80	0400		948297 3.55(N)	C.O. Tag # 647
075	7-18-80 7-19-80	0305	✓	948247 3.5(N)	160 Eggs Redep Tag #645
076	7-19-80	2200		921278 1.5(N)	CO
077	7-20-80	0100		910268 0.6(N)	CO untagged turtle
078	7-20-80	0200		922279 1.7(N)	CO
079	7-20-80	2200		932286 2.35(N)	CO

(8)

Summary of Instructions:
*Location measured to nearest tenth of mile to the north or south of Risely Pier. Record known or estimated time when crawl was made or throught to have occurred. Conduct surveys daily during regular working hours 0800-1630 traveling by four wheel drive wehicle when tide is low. Traverse the beach flood plane in vehicle to avoid leaving tire tracks in the sand.

(37)

47%

SEA TURTLE INVENTORY
(Crawl Data)

1980

(14)

Marine Corps Base
Camp Lejeune, North Carolina

Green Turtle

Crawl No.	Date	Time Crawl Occurred	Active Nest (✓)	Location*	Comments
080	7-20-80	2330	✓	906266 0.3(N)	1 Broken Return # 647 117 Eggs Redep.
IMS * 081	7-21-80	0330	✓	917275 1.2(N)	Tag 649 Back. Photographed 166 Eggs Removed
IMS 082	7-23-80 (7-22-80)	0040	✓	892255 0.8(S)	TAG # 646 96 EGGS REMOVED IMS
083	7-23-80	0035	✓	933286 2.35(N)	RETURN OF TAG # 670 134 EGGS REDEPOSITED
084	7-24-80 (7-23-80)	0030	✓	929284 2.10(N)	RETURN OF TAG # NC0001 116 EGGS REDEPOSITED
085	7-24-80	2215	✓	950298 3.7(N)	Tag 648 Return 114 Eggs Redep.
086	7-25-80	2215	✓	946295 3.35(N)	Tag 644. 89 Eggs
087	7-26-80	2200		885249 1.3(S)	Turtle # 661 Return Quit nest due to rain
088	7-26-80	2245		943293 3.2(N)	C.O. Driven off by rain
089	7-27-80	0200		921278 1.5(N)	C.O. "
090	7-27-80	? 2200		929284 2.1(N)	C.O.
091	7-27-80	? 2200		935288 2.6(N)	C.O. (BODY PIT & EGG PIT) NO EGGS
092	7-27-80	? 2200		936289 2.7(N)	C.O.
093	7-27-80	? 2200		942292 3.1(N)	C.O.
IMS 094	7-28-80	2210	✓	897258 0.4(S)	RETURN OF TAG # 652 132 EGGS REMOVED ORIGINALLY TAGGED #655
IMS 095	7-28-80	2210	✓	892255 0.8(S)	RETURN OF TAG # 640 102 EGGS REMOVED
096	7-30-80	2120	✓	948297 3.5(N)	88 EGGS TAG # 633
097	8-1-80 (7-31-80)	0130		916275 1.25N	C.O.
IMS 098	8-1-80	2200	✓	917275 1.2(N)	Tag 639 114 Eggs Removed
					Previously tagged but tag gone
IMS 099	8-1-80	2200	✓	894257 0.6(S)	RETURN # 672 78 Eggs IMS 1 Broken

(12)

Summary of Instructions:
*Location measured to nearest tenth of mile to the north or south of Risely Pier.
Record known or estimated time when crawl was made or throught to have occurred.
Conduct surveys daily during regular working hours 0800-1630 traveling by four wheel drive wehicle when tide is low. Traverse the beach flood plane in vehicle to avoid leaving tire tracks in the sand.

Julia 346 6885
Pete 324 3246

(49)

49.5%

Tag intact Green Turtle					
INS 100	8-2-80	0245	✓	916275 1.25 N	157 Eggs Removed
INS 101	8-2-80	0315		930285 2.2 N	C.O.

SEA TURTLE INVENTORY
(Crawl Data)

1980

(14)

Marine Corps Base
Camp Lejeune, North Carolina

Green Turtle

Crawl No.	Date	Time Crawl Occurred	Active Nest (✓)	Location*	Comments
080	7-20-80	2330	✓	906266 0.3(N)	1 Broken Return # 647 117 Eggs Redep.
IMS * 081	7-21-80	0330	✓	917275 1.2(N)	Tag 649 Base Photographer 166 Eggs Removed
IMS 082	7-22-80 7-23-80	0040	✓	892255 0.8(S)	TAG # 646 96 EGGS REMOVED IMS
083	7-23-80	0035	✓	933286 2.35(N)	RETURN OF TAG # 670 134 EGGS REDEPOSITED
084	7-23-80 7-24-80	0030	✓	929284 2.10(N)	RETURN OF TAG # NC0001 116 EGGS REDEPOSITED
085	7-24-80	2215	✓	950298 3.7(N)	Tag 648 Return 114 Eggs Redep.
086	7-25-80	2215	✓	946295 3.35(N)	Tag 644. 89 Eggs
087	7-26-80	2200		885249 1.3(S)	Turtle # 661 Return Quit nest due to rain
088	7-26-80	2245		943293 3.2(N)	C.O. Driven off by rain
089	7-27-80	0200		921278 1.5(N)	C.O. "
090	7-27-80	? 2200		929284 2.1(N)	C.O.
091	7-27-80	? 2200		935288 2.6(N)	C.O. (BODY PIT & EGG PIT) NO EGGS
092	7-27-80	? 2200		936289 2.7(N)	C.O.
093	7-27-80	? 2200		942292 3.1(N)	C.O.
IMS 094	7-28-80	2210	✓	897258 0.4(S)	RETURN OF TAG # 652 132 EGGS REMOVED ORIGINALLY TAGGED #655
IMS 095	7-28-80	2210	✓	892255 0.8(S)	RETURN OF TAG # 640 102 EGGS REMOVED
096	7-30-80	2120	✓	948297 3.5(N)	88 EGGS TAG # 633
097	7-31-80 8-1-80	0130		916275 1.25N	C.O.
IMS 098	8-1-80	2200	✓	917275 1.2(N)	Tag 639 114 Eggs Removed
					Previously tagged but tag gone
IMS 099	8-1-80	2200	✓	894257 0.6(S)	RETURN # 672 78 Eggs IMS 1 Broken

(12)

Summary of Instructions:
*Location measured to nearest tenth of mile to the north or south of Risely Pier.
Record known or estimated time when crawl was made or throught to have occurred.
Conduct surveys daily during regular working hours 0800-1630 traveling by four wheel drive wehicle when tide is low. Traverse the beach flood plane in vehicle to avoid leaving tire tracks in the sand.

Julia 346 6885
Pete 324 3246

(49)

49.5%

INS 100	8-2-80	0245	✓	916275 1.25 N	Tag intact Green Turtle 157 Eggs Removed	
INS 101	8-2 80	0315		930285 2.2 N	C.O.	

SEA TURTLE INVENTORY
(Crawl Data)

Marine Corps Base
Camp Lejeune, North Carolina

Crawl No.	Date	Time Crawl Occurred	Active Nest (✓)	Location*	Comments
IMS * 119	8-17-80	?	✓	925281 1.9 (N)	(IMS) 145 EGGS POSS. GREEN SEATURTLE
120	8-18-80	0245		948297 3.5 (N)	TURTLE DUG 2 BODY PITS C.O. RETURN OF TAG #667
IMS 121	8-20-80	0200	✓	946295 3.4 (N)	2 OBLONG 75 EGGS RETURN OF TAG #667
122	8-22-80	?		934287 2.5 (N)	ONLY SMALL SECTION OF CRAWL REMAINED — WAS UNABLE TO LOCATE BODY PIT
123	8-24-80	2200-0100		927283 2.05 (N)	C.O.
124	8-25-80	2200-2400		864235 2.85 (S)	C.O. — probably same turtle
IMS 125	8-25-80	2200-2400	✓	865236 2.8 (S)	99 EGGS IMS

Summary of Instructions:
*Location measured to nearest tenth of mile to the north or south of Risely Pier. Record known or estimated time when crawl was made or throught to have occurred. Conduct surveys daily during regular working hours 0800-1630 traveling by four wheel drive wehicle when tide is low. Traverse the beach flood plane in vehicle to avoid leaving tire tracks in the sand.

SEA TURTLE INVENTORY
(Crawl Data)

1980

Marine Corps Base
Camp Lejeune, North Carolina

Crawl No.	Date	Time Crawl Occurred	Active Nest (√)	Location*	Comments Tag 649
IMS 100	8-2-80	0245	✓	916275 1.25(N)	Green Turtle 157 Eggs Removed
101	8-2-80	0315		930285 2.2(N)	C.O.
IMS 102	8-2-80	2330	✓	933276 2.4(N)	#647 return 114 Eggs Removed IMS
IMS 103	8-3-80	0300	✓	897258 0.4(S)	Tag # 638 79 Eggs removed IMS
IMS 104	8-3-80	0245	✓	899260 0.2(S)	1 Egg - Turtle interrupted by people - "Egg was "Rotten"
105	8-3-80	?		931286 2.3(N)	C.O. BODY PIT
106	8-3-80	?		915273 1.0(N)	Egg pit but NO Eggs maybe same as Nest 104
IMS 107	8-4-80	2250	(54) ✓	952298 3.8(N)	TAG # 634 179 Eggs Removed
IMS 108	8-5-80	2230	✓	876243 2.0(S)	1 Broken Tag # 637 134 Eggs Removed
109	8-7-80	2400		885249 1.3(S)	Tag # 636 C.O.
IMS 110	8-8-80	2245	✓	932286 2.35(N)	Return # 661 104 Eggs removed
IMS 111	8-8-80	2300		882248 1.5(S)	C.O.
IMS 112	8-8-80	2315	✓	881247 1.55(S)	Return # 640 104 Eggs removed
113	8-9-80	0200		897258 0.4(S)	C.O. TAG # 635
IMS 114	8-10-80	?	✓	922279 1.7(N)	120 EGGS
IMS 115	8-10-80	?	✓	871238 2.45(S)	80 EGGS
IMS 116	8-12-80	0230	✓	928284 2.1(N)	83 EGGS Return # 636 (109)
117	8-14-80	2230		876244 2.0(S)	C.O. B.P. & E.P.
IMS 118	8-14-80	2300	✓	882248 1.5(S)	REMOVED (IMS) 112 EGGS RETURN # 639

Summary of Instructions:

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12

(61)

52%

57

Camp Lejeune 1980 Nests Incubated at Institute of Marine Sciences
26 Nests (3 of which were green)

Date Lain	Number Lain	Number Hatched	% Hatch	Locality
11 June	54	24	44.4	0.15 mi S. Risley Pier
20 June	121	82	68.1	0.6 mi S. Risley Pier
22 June	101	87	86.1	2.7 mi N. Risley Pier Sheet 16
29 June	117	26*	22.2	1.0 mi S. Risley Pier Sheet 16
10 July	119	0	0.0	Nest 048 - all infertile
17 July	120	43**	26.7	0.8 mi S. Risley Pier Grid 843254
21 July	166	1	.006	green turtles
20 July	96	94	98.0	0.8 mi S. Risley Pier Grid 892255
28 July	128	52	40.6	0.4 mi S. Risley Pier Grid 897258
28 July	101	11	10.9	0.8 mi S. Risley Pier Grid 892255
2 Aug	157	32	20.4	Nest 100 Grid 916275 - green turtles
1 Aug	75	68	90.7	Nest 099 Grid 894257
1 Aug	114	39	34.2	Nest 098 Grid 917275
2 Aug	114	61	53.5	Grid 933276
3 Aug	68	12	17.7	Grid 897258
4 Aug	179	63	35.2	Grid 952298 - Tag 634
5 Aug	132	1	0.75	Nest 108 - Tag 637
8 Aug	82	50	60.9	Nest 110 renest 661 - Grid 932286
8 Aug	103	99	96.1	Nest 112 renest 640 - Grid ~~882245~~ 881247
10 Aug	118	56	46.6	Nest 114 Grid 922279, 1.7 mi N. Risley Pier
10 Aug	71	65	91.4	Nest 115 Grid 871238, renest 645
12 Aug	82	76	92.7	Nest 116 2.1 mi N. Risley Pier - Grid 928284
14 Aug	110	54	49.1	Nest 118 retag 639 1.53
17 Aug	145	62	42.8	Nest 119 Grid 925281, 1.9 mi N. Risley Pier green turtles
20 Aug	73	38	52.1	3.4 mi N. Risley Pier - Grid 946295, Tag 667
26 Aug	98	56	57.2	Camp Lejeune
	2376	1157		
	2,844	1,252	44.0	Total Green and Loggerhead
2376	~~2,426~~	1,157	~~47.7~~ 48.7	Total Loggerhead
	~~418~~ 468	95	~~22.7~~ 20.3	Total Green

Total Released - 1,581
" Loggerhead - 1,329 84.1%
" Green - 89 93.8%

1979 Camp Lejeune Data - 21 Nests (all loggerheads)

Total Eggs Lain	Hatched	%	Released	%
2,572	1,378	53.6	1,357	98.5

% Hatch Ranged: 0.8-99.2

*67 others developed but did not hatch.
**44 others developed but did not hatch.

Dear Hugh:

Attached is data involving rests moved to IMS which Dr. Schwartz provided for our info.

Pete

Table 6

SEA TURTLE INVENTORY
(Hatching Success)
Marine Corps Base
Camp Lejeune, North Carolina

1980

*- Green Turtle

Nest No.	Incubation Period Days	Total Eggs	Released Young	Emerged Young	Total Young	Percent of Success
001	65 Days	115	67	39	106	92.2
002	63	166	158	3	161	97 %
003	63	134	4	69	73	54.5
006 IMS	69	53	24	0	24	45.3
007	—	126	0	0	0	0
012	65	102	81	4	85	83.3
013	64	175	4	119	123	68
015	63	134	0	128	128	95.5
016 IMS		121				
018 IMS		101				
019	64	86	6	75	81	92.6
021	63	143	0	114	114	79.7
* 022	56	168	148	0	148	88.1
026	60	100	0	91	91	91
027	59	72	0	71	71	98.6
028 IMS		119				
029	59	113	0	78	78	69
034	60	127	25	21	46	36.2
036	60	152	53	56	109	71.7
037	59	116	4	89	93	80.2
038	59	131	8	75	83	63.4
039	60	167	161	0	161	96.4
040	62	131	125	4	129	98.5
042	59	78	7	58	65	83.3
043	62	99	98	0	98	99.9
* 046	58	183	144	0	144	78.7

3219

SEA TURTLE INVENTORY
(Hatching Success)
Marine Corps Base
Camp Lejeune, North Carolina

1980

Nest No.	Incubation Period Days	Total Eggs	Released Young	Emerged Young	Total Young	Percent of Success
048 IMS		124				
054	59	89	64	23	87	97.8
058	58	109	51	55	106	97.2
059	59	118	13	99	112	94.9
062	58	97	3	91	94	96.9
066	57	131	37	80	117	89.3
067	63	99	0	88	88	88.9
069	60	131	109	0	109	83.2
072 IMS		123				
073	60	119	2	112	114	95.8
075	57	160	4	154	158	98.75
080	~ 60	117	0	101	101	86.3
* 081 IMS		166				
082 IMS		96				
083		134				
084	59	116	4	106	110	94.8
085	61	114	0	111	111	97.4
086		89				
094 IMS		132				
095 IMS		102				
096		88				
098 IMS		114				
099 IMS		78				
* 100 IMS		157				
102 IMS		114				
103 IMS		79				
		2996				

SEA TURTLE INVENTORY
(Hatching Success)
Marine Corps Base
Camp Lejeune, North Carolina

1980

Nest No.	Incubation Period	Total Eggs	Released Young	Emerged Young	Total Young	Percent of Success
104 Ims	0	1 Rotten	0	0	0	0
107 Ims		179				
108 Ims		134				
110 Ims		104				
112 Ims		104				
114 Ims		120				
115 Ims		80				
116 Ims		83				
118 Ims		112				
* 119 Ims		145				
121 Ims		75				
125 Ims		99				
		1236				
	TOTALS					
64		7451				
27 Ims		2922				
37 O.B.		4529				
Green Turtle		819				

STRANDING/SALVAGE FIELD FORMS

1) OBSERVER'S INIT. HRP (2) DATE 80/07/07 (3) TURTLE NO. BY DAY 01 (4) STATE NC

5) COORDINATOR'S INIT. FJS (6) SPECIES CODE CC (7) RELIABILITY OF ID 3 (8) SEX U

9) VERIFIED BY STATE COORDIN. ___ (10) LAT. ____.__ N/S LONG. ____.__ S/W

11) DESCRIPTION OF LOCATION Onslow Beach Grid # 941291

12) CARAPACE LENGTH 24.0 ~~CM~~/IN (13) HEAD LENGTH 6.0 ~~CM~~/IN (18) COND. OF ANIMAL 2

WIDTH 22.0 ~~CM~~/IN WIDTH 4.0 ~~CM~~/IN (19) PHOTO TAKEN N

14) PLASTRON LENGTH 17.0 ~~CM~~/IN (15) TAIL LENGTH __.__ CM/IN (20) SPRAY PAINTED N

(16) WEIGHT 100.0 ~~KG~~/LB (17) WOUNDS/MUTILATIONS None

21) TAG NO. _____ (22) TYPE ___ (23) LOCATION ___ (24) DISPOSITION OF TAG & TAG INFO. _____

21) TAG NO. _____ (22) TYPE ___ (23) LOCATION ___ (24) DISPOSITION OF TAG & TAG INFO. _____

25) FINAL DISPOSITION OF CARCASS 2 (26) IF 3, THEN WHERE SENT _____

27) REMARKS: _____

CODES:

Species

C C Caretta caretta, loggerhead

C M Chelonia mydas, green

L K Lepidochelys kempi, Kemp's ridley

D C Dermochelys coriacea, leatherback

E I Eretmochelys imbricata, hawksbill

U K Unknown

Sex

F= female M= male U= unknown

Tag type

M= metal P= plastic O= other

Tag Location

1= inside edge of front flipper
2= inside edge of hind flipper
3= outside edge of front flipper
4= outside edge of hind flipper
5= on margin of shell
6= on shell

Condition of animal

0= alive 2= brewing 4= mummy
1= fresh 3= El stinko 5= skeleton

Final disposition of carcass

1= left on beach (painted)
2= buried on beach
3= collected specimen

Reliability of ID

1= unsure 2= probable 3= sure
if U K, then also include a 3 here.

STRANDING/SALVAGE FIELD FORMS

(1) OBSERVER'S INIT. J A F (2) DATE 8 0 0 7 / 0 5 (3) TURTLE NO. BY DAY 0 1 (4) STATE N C

(5) COORDINATOR'S INIT. F J S (6) SPECIES CODE C C (7) RELIABILITY OF ID 3 (8) SEX U

(9) VERIFIED BY STATE COORDIN. ___ (10) LAT. ___ ___ ___ ___.___ N/S LONG. ___ ___ ___ ___.___ S/W

(11) DESCRIPTION OF LOCATION _____

(12) CARAPACE LENGTH ___ ___ 6 5 . 0 CM/IN (13) HEAD LENGTH ___ ___ ___.___ CM/IN (18) COND. OF ANIMAL 2

WIDTH ___ ___ 6 2 . 5 CM/IN WIDTH ___ ___ ___.___ CM/IN (19) PHOTO TAKEN N

(14) PLASTRON LENGTH ___ ___ ___ ___.___ CM/IN (15) TAIL LENGTH ___ ___.___ CM/IN (20) SPRAY PAINTED N

(16) WEIGHT ___ ___ ___ ___.___ KG/LB (17) WOUNDS/MUTILATIONS HEAD & FLIPPERS MISSING; RIGHT SIDE OF PLASTRON MISSING

(21) TAG NO. ___ ___ ___ ___ ___ ___ ___ ___ (22) TYPE ___ (23) LOCATION ___ (24) DISPOSITION OF TAG & TAG INFO. _____

(21) TAG NO. ___ ___ ___ ___ ___ ___ ___ ___ (22) TYPE ___ (23) LOCATION ___ (24) DISPOSITION OF TAG & TAG INFO. _____

(25) FINAL DISPOSITION OF CARCASS 2 (26) IF 3, THEN WHERE SENT _____

(27) REMARKS: TAIL EXTENDED TO EDGE OF, BUT NOT BEYOND CARAPACE - BELIEVE TURTLE WAS A FEMALE BUT WAS NOT POSITIVE; TURTLE CARCASE WAS BURIED ON BANK APPROX. 5 FT. ABOVE HIGH TIDE LINE

CODES:

Species

C C Caretta caretta, loggerhead

C M Chelonia mydas, green

L K Lepidochelys kempi, Kemp's ridley

D C Dermochelys coriacea, leatherback

E I Eretmochelys imbricata, hawksbill

U K Unknown

Sex

F= female M= male U= unknown

Tag type

M= metal P= plastic O= other

Tag Location

1= inside edge of front flipper
2= inside edge of hind flipper
3= outside edge of front flipper
4= outside edge of hind flipper
5= on margin of shell
6= on shell

Condition of animal

0= alive 2= brewing 4= mummy
1= fresh 3= El stinko 5= skeleton

Final disposition of carcass

1= left on beach (painted)
2= buried on beach
3= collected specimen

Reliability of ID

1= unsure 2= probable 3= sure
if U K, then also include a 3 here.

STRANDING/SALVAGE FIELD FORMS

(1) OBSERVER'S INIT. J A F (2) DATE 80/05/19 (3) TURTLE NO. BY DAY 01 (4) STATE NC

(5) COORDINATOR'S INIT. F J S (6) SPECIES CODE C C (7) RELIABILITY OF ID 3 (8) SEX F

(9) VERIFIED BY STATE COORDIN. ___ (10) LAT. _ _ _ _._ N/S LONG. _ _ _ _._ S/W

(11) DESCRIPTION OF LOCATION TURTLE WAS FOUND APPROX 7 YARDS BELOW HIGH TIDE LINE ONSLOW BEACH, CAMPLE JEUNE 2 MILES NORTH OF RISELEY PIER; ~0.3 MILES NORTH OF OFFICERS SWIMMING AREA

(12) CARAPACE LENGTH 0 0 7 0.0 CM/IN (13) HEAD LENGTH _ _ _._ CM/IN (18) COND. OF ANIMAL 3

WIDTH 0 0 6 1.3 CM/IN WIDTH _ _ _._ CM/IN (19) PHOTO TAKEN N

(14) PLASTRON LENGTH _ _ _ _._ CM/IN (15) TAIL LENGTH _ _._ CM/IN (20) SPRAY PAINTED N

(16) WEIGHT _ _ _ _._ KG/LB (17) WOUNDS/MUTILATIONS NO WOUNDS APPARENT

(21) TAG NO. _ _ _ _ _ _ _ _ (22) TYPE___ (23) LOCATION __ (24) DISPOSITION OF TAG & TAG INFO.

(21) TAG NO. _ _ _ _ _ _ _ _ (22) TYPE___ (23) LOCATION __ (24) DISPOSITION OF TAG & TAG INFO.

(25) FINAL DISPOSITION OF CARCASS 2 (26) IF 3, THEN WHERE SENT ——

(27) REMARKS: TAIL SMALL - DIDNT EXTEND PAST CARAPACE — NO BOATS WERE SEEN IN AREA, BUT TURTLE HAD BEEN DEAD FOR A FEW DAYS BEFORE FOUND — FRONT AND REAR FLIPPERS WERE PARTIALLY DECOMPOSED

CODES:

Species

C C Caretta caretta, loggerhead

C M Chelonia mydas, green

L K Lepidochelys kempi, Kemp's ridley

D C Dermochelys coriacea, leatherback

E I Eretmochelys imbricata, hawksbill

U K Unknown

Sex

F= female M= male U= unknown

Tag type

M= metal P= plastic O= other

Tag Location

1= inside edge of front flipper
2= inside edge of hind flipper
3= outside edge of front flipper
4= outside edge of hind flipper
5= on margin of shell
6= on shell

Condition of animal

0= alive 2= brewing 4= mummy
1= fresh 3= El stinko 5= skeleton

Final disposition of carcass

1= left on beach (painted)
2= buried on beach
3= collected specimen

Reliability of ID

1= unsure 2= probable 3= sure
if U K, then also include a 3 here.

STRANDING/SALVAGE FIELD FORMS

(1) OBSERVER'S INIT. JAF (2) DATE 80/09/22 (3) TURTLE NO. BY DAY 01 (4) STATE NC

(5) COORDINATOR'S INIT. FJS (6) SPECIES CODE CC (7) RELIABILITY OF ID 3 (8) SEX F

(9) VERIFIED BY STATE COORDIN. ___ (10) LAT. ____.__ N/S LONG. ____.__ S/W

(11) DESCRIPTION OF LOCATION ONSLOW BEACH 2.85 MILES NORTH OF RISELEY PIER GRID # 939290

(12) CARAPACE LENGTH 30.0 CM/IN (13) HEAD LENGTH ___.__ CM/IN (18) COND. OF ANIMAL ___

WIDTH 29.0 CM/IN WIDTH ___.__ CM/IN (19) PHOTO TAKEN ___

(14) PLASTRON LENGTH ____.__ CM/IN (15) TAIL LENGTH __.__ CM/IN (20) SPRAY PAINTED ___

(16) WEIGHT ____.__ KG/LB (17) WOUNDS/MUTILATIONS ___

(21) TAG NO. _____ (22) TYPE ___ (23) LOCATION ___ (24) DISPOSITION OF TAG & TAG INFO. ___

(21) TAG NO. _____ (22) TYPE ___ (23) LOCATION ___ (24) DISPOSITION OF TAG & TAG INFO. ___

(25) FINAL DISPOSITION OF CARCASS 2 (26) IF 3, THEN WHERE SENT ___

(27) REMARKS: BURIED TURTLE AT BASE OF DUNES AT ABOVE LOCATION

CODES:

Species

C C Caretta caretta, loggerhead

C M Chelonia mydas, green

L K Lepidochelys kempi, Kemp's ridley

D C Dermochelys coriacea, leatherback

E I Eretmochelys imbricata, hawksbill

U K Unknown

Sex

F= female M= male U= unknown

Tag type

M= metal P= plastic O= other

Tag Location

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6= on shell

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2= buried on beach
3= collected specimen

Reliability of ID

1= unsure 2= probable 3= sure
if U K, then also include a 3 here.

STRANDING/SALVAGE FIELD FORMS

(1) OBSERVER'S INIT. J A F (2) DATE 8 0 / 0 9 / 2 2 (3) TURTLE NO. BY DAY 0 1 (4) STATE N C

(5) COORDINATOR'S INIT. F J S (6) SPECIES CODE C C (7) RELIABILITY OF ID 3 (8) SEX F

(9) VERIFIED BY STATE COORDIN. ___ (10) LAT. _ _ _ _ . _ N/S LONG. _ _ _ _ . _ S/W

(11) DESCRIPTION OF LOCATION ONSLOW BEACH 2.85 MILES NORTH OF RISELEY PIER GRID# 939290

(12) CARAPACE LENGTH _ _ 3 0 . 0 CM/IN (13) HEAD LENGTH _ _ _ . _ CM/IN (18) COND. OF ANIMAL _

WIDTH _ _ 2 9 . 0 CM/IN WIDTH _ _ _ . _ CM/IN (19) PHOTO TAKEN _

(14) PLASTRON LENGTH _ _ _ _ . _ CM/IN (15) TAIL LENGTH _ _ . _ CM/IN (20) SPRAY PAINTED _

(16) WEIGHT _ _ _ _ . _ KG/LB (17) WOUNDS/MUTILATIONS _

(21) TAG NO. _ _ _ _ _ _ _ _ (22) TYPE _ (23) LOCATION _ (24) DISPOSITION OF TAG & TAG INFO. _

(21) TAG NO. _ _ _ _ _ _ _ _ (22) TYPE _ (23) LOCATION _ (24) DISPOSITION OF TAG & TAG INFO. _

(25) FINAL DISPOSITION OF CARCASS 2 (26) IF 3, THEN WHERE SENT _

(27) REMARKS: BURIED TURTLE AT BASE OF DUNES AT ABOVE LOCATION

CODES:

Species

C C Caretta caretta, loggerhead

C M Chelonia mydas, green

L K Lepidochelys kempi, Kemp's ridley

D C Dermochelys coriacea, leatherback

E I Eretmochelys imbricata, hawksbill

U K Unknown

Sex

F= female M= male U= unknown

Tag type

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3= collected specimen

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if U K, then also include a 3 here.

STRANDING/SALVAGE FIELD FORMS

(1) OBSERVER'S INIT. J A F (2) DATE 8 0 / 0 9 / 2 6 (3) TURTLE NO. BY DAY 0 1 (4) STATE N C

(5) COORDINATOR'S INIT. F J S (6) SPECIES CODE C C (7) RELIABILITY OF ID 3 (8) SEX U

(9) VERIFIED BY STATE COORDIN. ___ (10) LAT. _ _ _ _ . _ N/S LONG. _ _ _ _ . _ S/W

(11) DESCRIPTION OF LOCATION ONSLOW BEACH 2.9 MILES SOUTH OF RISELEY PIER GRID NUMBER

(12) CARAPACE LENGTH 2 7 . 5 CM/IN (13) HEAD LENGTH 6 . 0 CM/IN (18) COND. OF ANIMAL 3

WIDTH 2 6 . 8 CM/IN WIDTH 5 . 5 CM/IN (19) PHOTO TAKEN N

(14) PLASTRON LENGTH 1 9 . 0 CM/IN (15) TAIL LENGTH 1 . 7 CM/IN (20) SPRAY PAINTED N

(16) WEIGHT 1 5 0 . KG/LB (17) WOUNDS/MUTILATIONS NONE

(21) TAG NO. _ _ _ _ _ _ _ _ (22) TYPE ___ (23) LOCATION ___ (24) DISPOSITION OF TAG & TAG INFO. _____

(21) TAG NO. _ _ _ _ _ _ _ _ (22) TYPE ___ (23) LOCATION ___ (24) DISPOSITION OF TAG & TAG INFO. _____

(25) FINAL DISPOSITION OF CARCASS 2 (26) IF 3, THEN WHERE SENT _____

(27) REMARKS: BURIED APPROX. 5 YD. ABOVE BERM

CODES:

Species

C C Caretta caretta, loggerhead

C M Chelonia mydas, green

L K Lepidochelys kempi, Kemp's ridley

D C Dermochelys coriacea, leatherback

E I Eretmochelys imbricata, hawksbill

U K Unknown

Sex

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if U K, then also include a 3 here.

STRANDING/SALVAGE FIELD FORMS

(1) OBSERVER'S INIT. J A F (2) DATE 8 0/0 9/2 2 (3) TURTLE NO. BY DAY 0 1 (4) STATE N C

(5) COORDINATOR'S INIT. E J S (6) SPECIES CODE C C (7) RELIABILITY OF ID 3 (8) SEX F

(9) VERIFIED BY STATE COORDIN. ___ (10) LAT. ___ ___ ___ ___.___ N/S LONG. ___ ___ ___ ___.___ S/W

(11) DESCRIPTION OF LOCATION ONSLOW BEACH 2.85 MILES NORTH OF RISELEY PIER GRID # 939290

(12) CARAPACE LENGTH ___ ___ 3 0.0 CM/IN (13) HEAD LENGTH ___ ___ 6.3 CM/IN (18) COND. OF ANIMAL 3

WIDTH ___ ___ 2 9.0 CM/IN WIDTH ___ ___ 5.0 CM/IN (19) PHOTO TAKEN N

(14) PLASTRON LENGTH ___ ___ 2 3.5 CM/IN (15) TAIL LENGTH ___ ___.___ CM/IN (20) SPRAY PAINTED N

(16) WEIGHT ___ 1 5 0.___ KG/LB (17) WOUNDS/MUTILATIONS NONE

(21) TAG NO. ___ ___ ___ ___ ___ ___ ___ ___ (22) TYPE___ (23) LOCATION ___ (24) DISPOSITION OF TAG & TAG INFO.___

(21) TAG NO. ___ ___ ___ ___ ___ ___ ___ ___ (22) TYPE___ (23) LOCATION ___ (24) DISPOSITION OF TAG & TAG INFO.___

(25) FINAL DISPOSITION OF CARCASS 2 (26) IF 3, THEN WHERE SENT___

(27) REMARKS: NO SIGN OF WOUNDS ON TURTLE, THEREFORE BELIEVE TURTLE MOST HAVE DROWN. BURIED TURTLE AT BASE OF DUNES AT LOCATION MENTIONED ABOVE

CODES:

Species

C C Caretta caretta, loggerhead

C M Chelonia mydas, green

L K Lepidochelys kempi, Kemp's ridley

D C Dermochelys coriacea, leatherback

E I Eretmochelys imbricata, hawksbill

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F= female M= male U= unknown

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