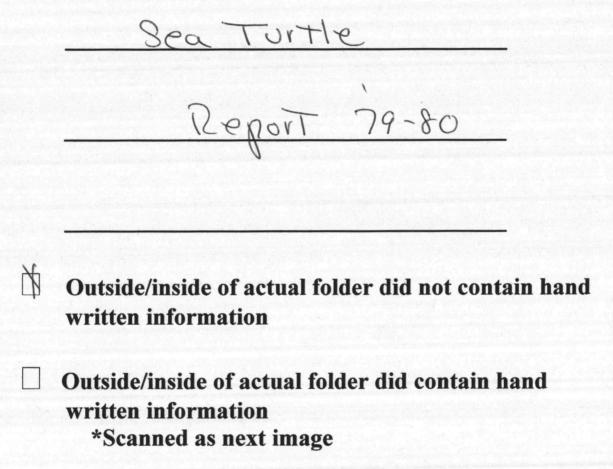
# FILE FOLDER

# **DESCRIPTION ON TAB:**



Confidential Records Management, Inc. New Bern, NC 1-888-622-4425 9/08 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

Strong of the think was

JULIAN I. WOOTEN
Director

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

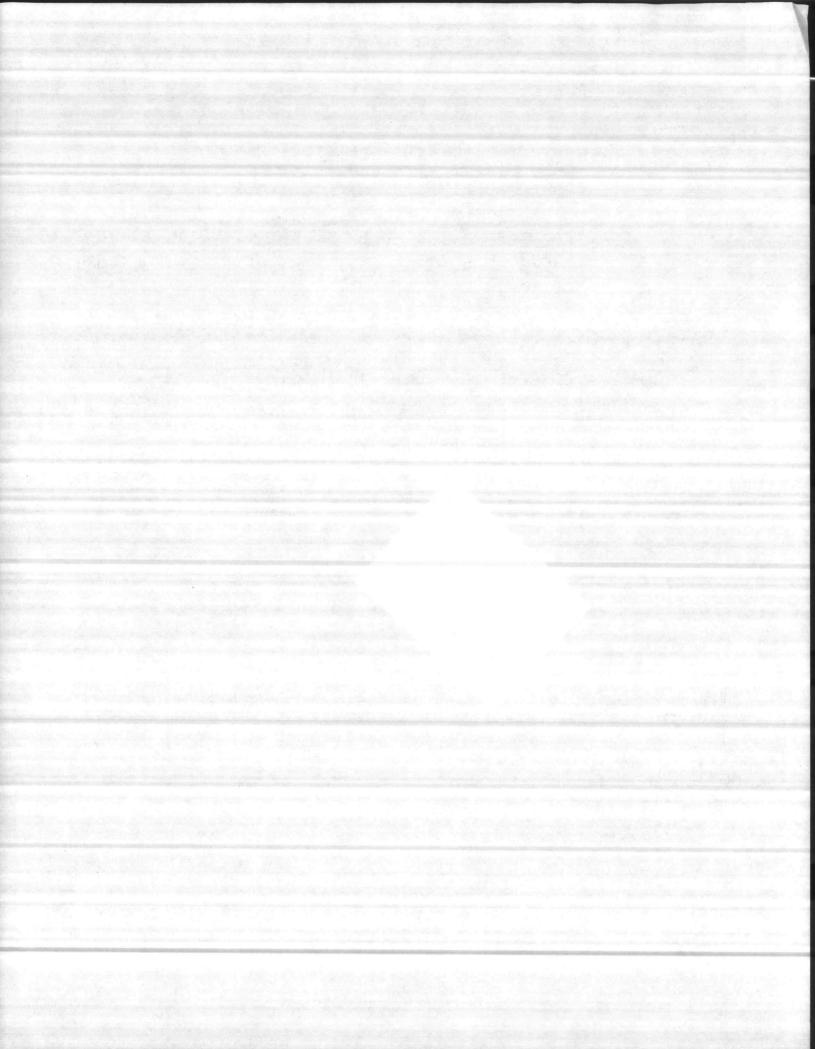
CHARLES D. PETERSON Supervisor, Wildlife Management

JOHN A. FRIDELL

2

HUGH R. PASSINGHAM

Technicians



SEA TURTLE INVENTORY

FOR

SUMMER AND FALL 1980

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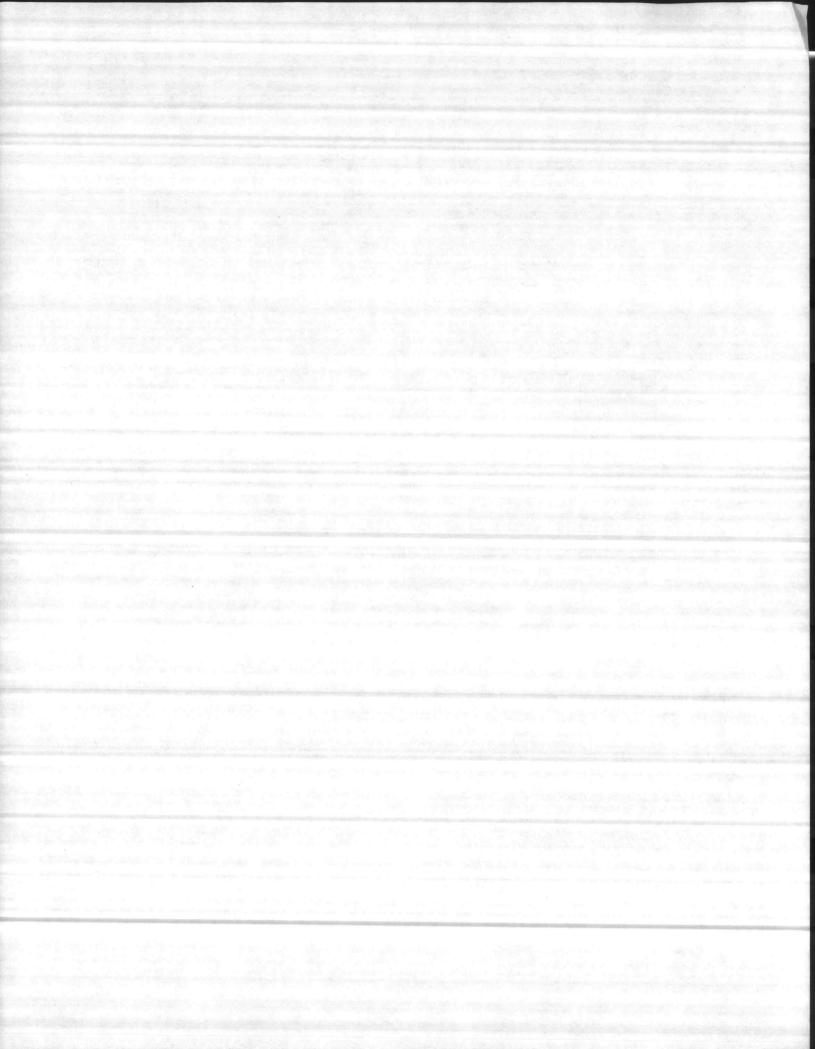
CHARLES D. PETERSON Supervisor, Wildlife Management DR. FRANK B. SCHWARTZ
Advisor
Institute of Marine Science
Morehead City, North Carolina

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

Tagging Adult Turtles

Collection of Nesting Data

Insitu Weather Observations

Aerial Surveys

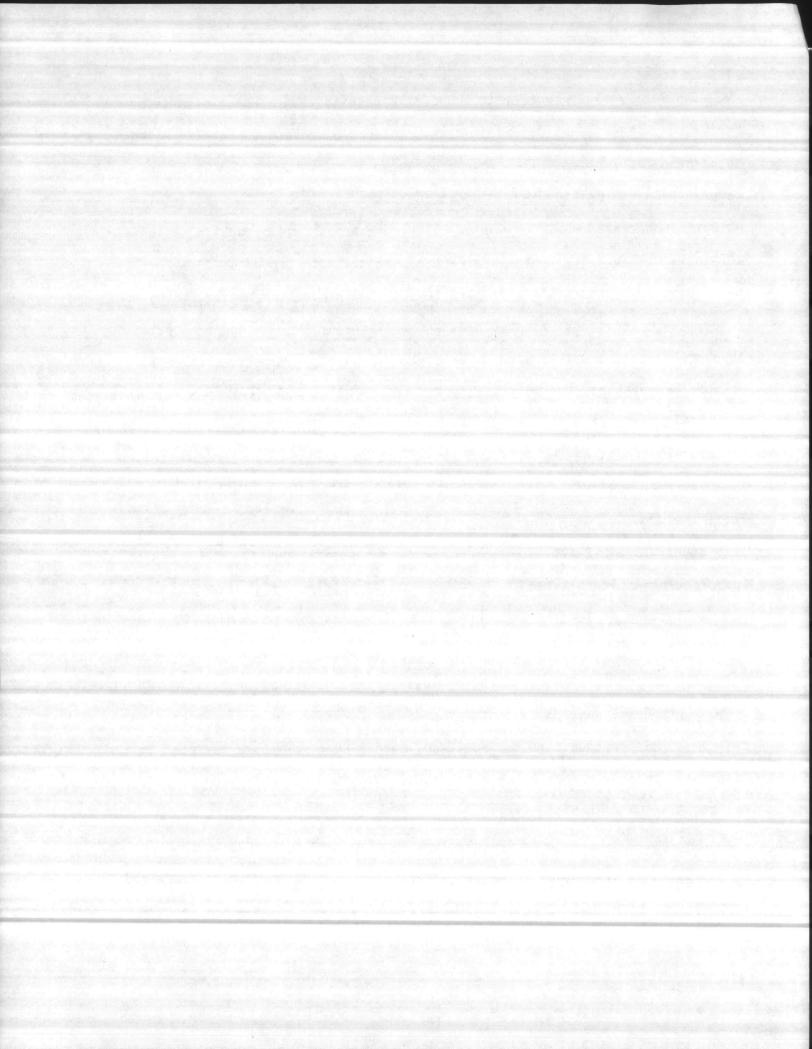
Nesting and Hatching Success

Occasional Hatchling Tiagging

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

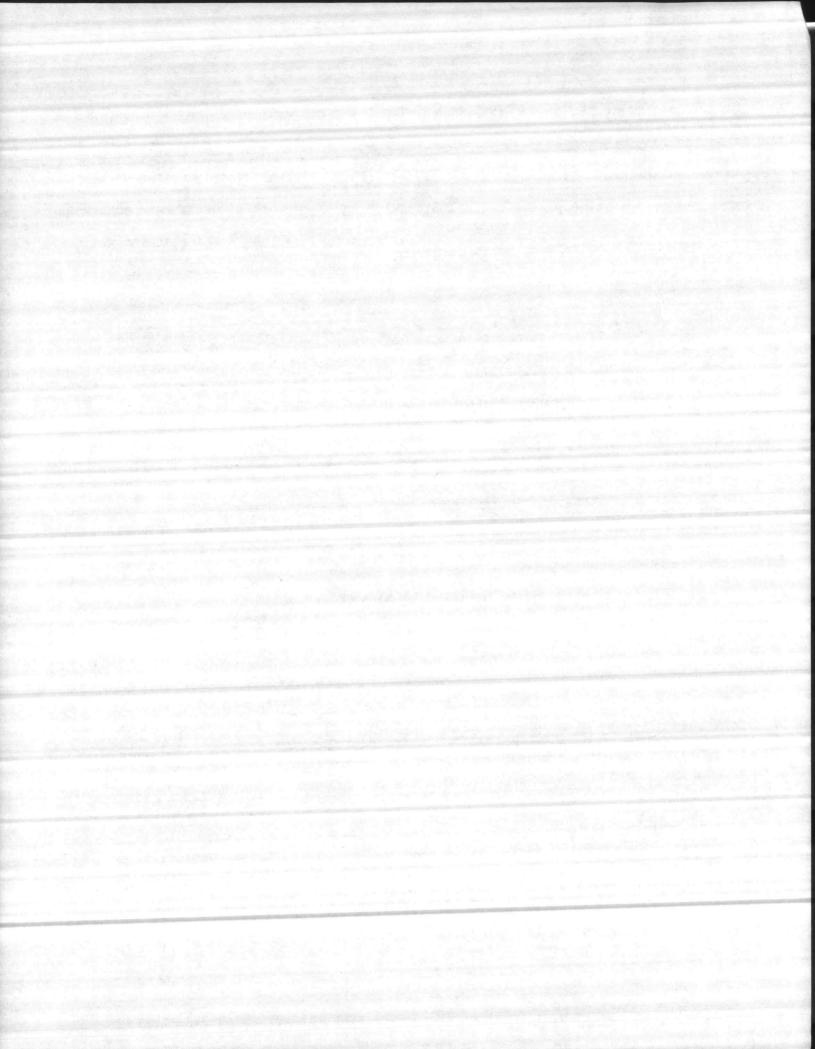
The nesting season for 1980 began with the first nest on 30 May 1980 and ended with the last nest on 25 August 1980. There were a total of 125 crawls to nest on Onslow Beach of which 65 were successful. This compares closely to the data from the 1979 nesting season where 138 crawls and 63 successful 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. NCOOO1 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% hate 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

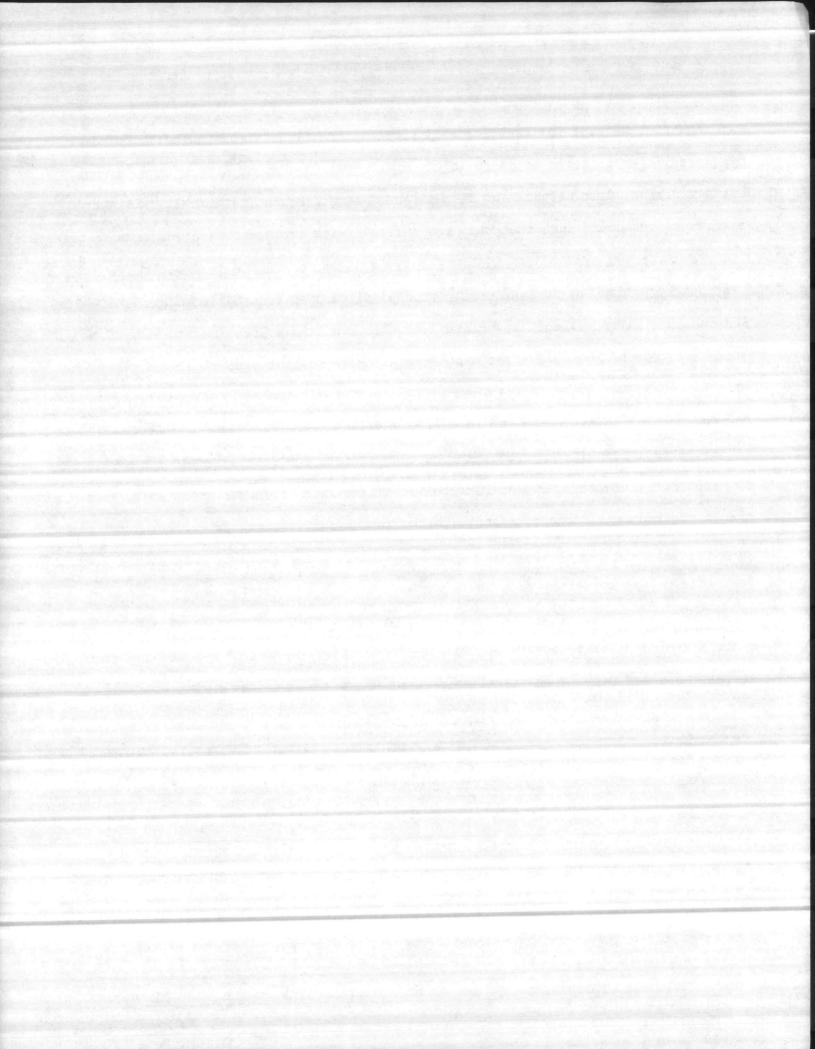


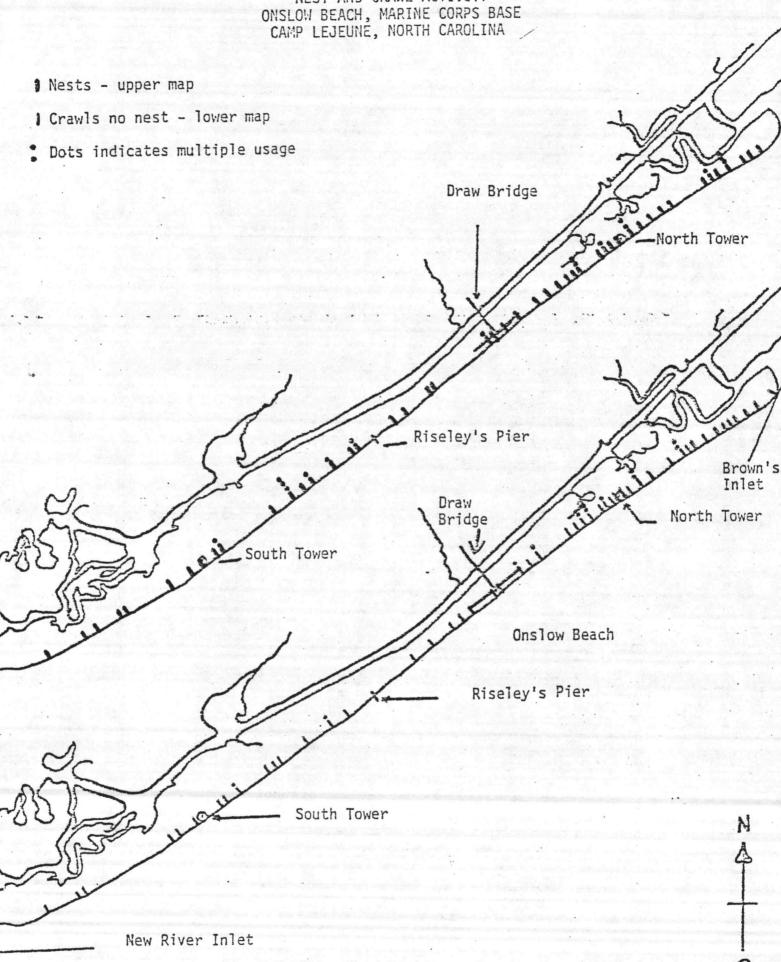
year's success rate of 67.96%. This overall success rate is better than the 1979 season success rate which was 57%.

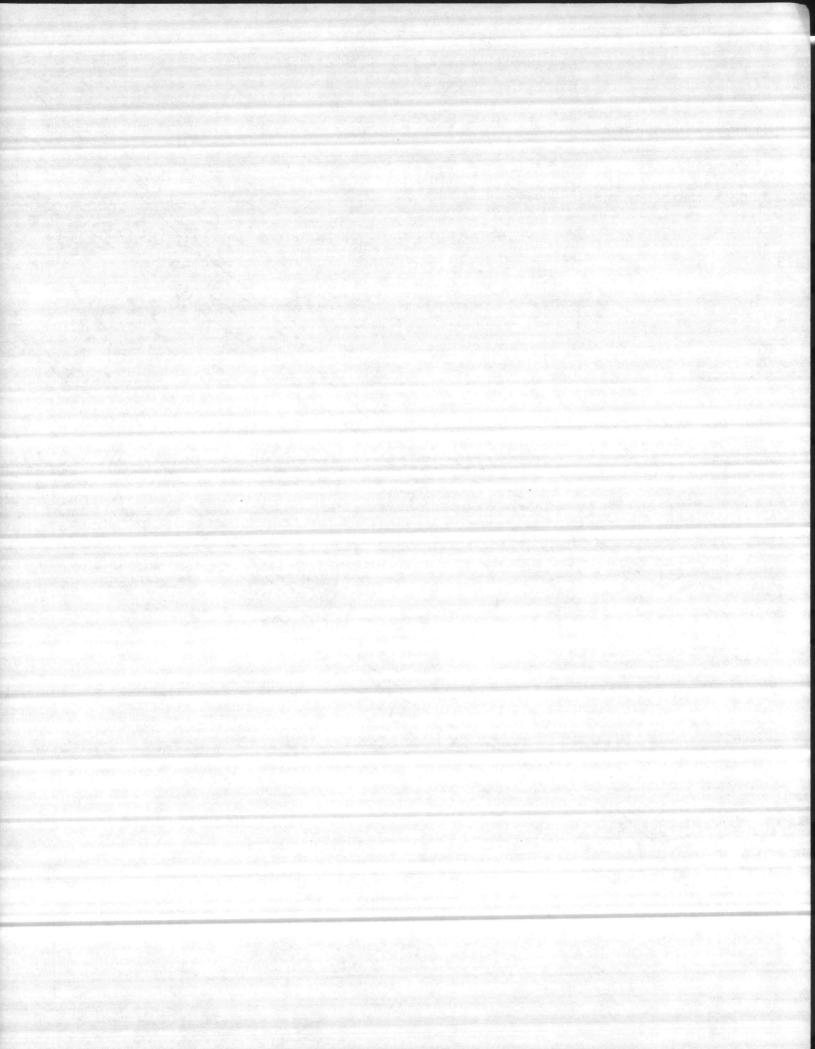
The Camp Lejeune Sea Turtle aerial surveillance flights covered beaches from New River Inlet to north to Bouge Inlet, which included Onslow Beach, Camp Lejeune, Brown's Island, Camp Lejeune and Bear Island (Hammock Beach State Park). Flight dates were scheduled such that they would fit in with the North 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.

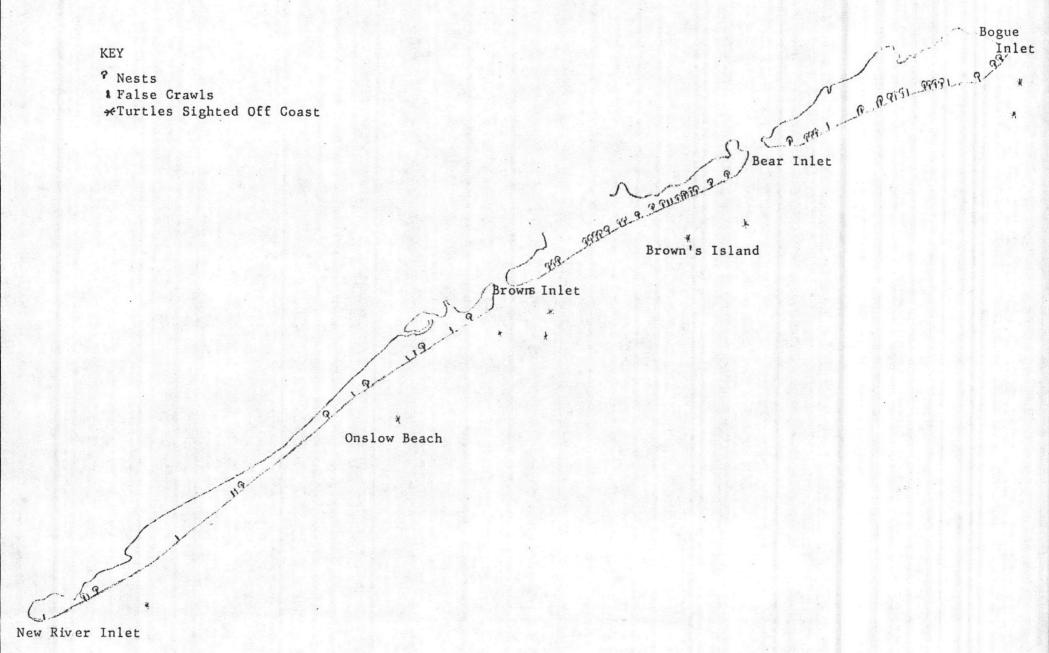
The Camp Lejeune Aerial Survey results (See Table III) are insignificant unless comparted to the overall aerial survey program for the East Coast, conducted by the U. S. Fish and Wildlife Service. Consequently, the discussion of the results will be held to a statement of total data taken. Observations 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).









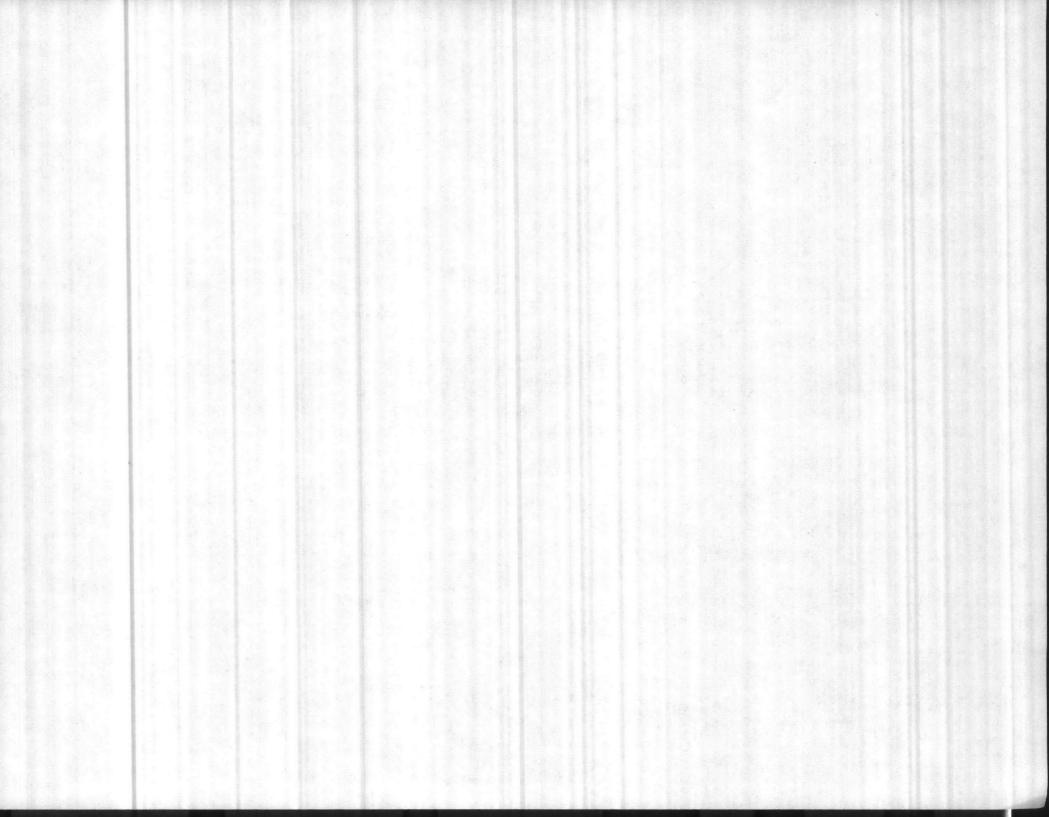


TABLE I
CRAWL INFORMATION IN RELATION TO MOON AND TIDE CYCLES AND WEATHER CONDITIONS
(Nights handled as a whole not broken at midnight)

DATE	Moon Rise	Time of	Time Crawl	Time Crawl	Tan-1		Tem	distribution of the residence
Night of	% Illumin	Hi Tide	W/O nest	W/ nest	Total	Weather Clear Fair	H <sub>2</sub> O	Air
5-30-80				1	0	Fair	20.5°C	19 C
5-31-80	24.54 0.5%	2120						
6-01-80 6-02-80	2151-95% 2241-90%	2130 2216		1	0	Fair Sctr	1,,00	21°C
		2210		1	1	Clouds	22-0	21 6
6-03-80	2326-82%	2307			0	Fair Partly		
6-04-80	0008-73%	0007	1	1	2	Cloudy	22°C	18.5°C
6-05-80	0047-63%	0103		grande and the	0			
6-06-80	0125-51%	0207			0			
6-07-80	0203-40%	0311			0			
6-08-80	0242-29%	0412			0		e godkar	
6-09-80	0323–19%	0512	1		1			
6-10-80	0407-11%	0607			0			
6-11-80	0455-05%	1835 0701	1	2	3	Fair Partly Cloudy	24.9°C	-
6-12-80	0547-01%	1926 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		3	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

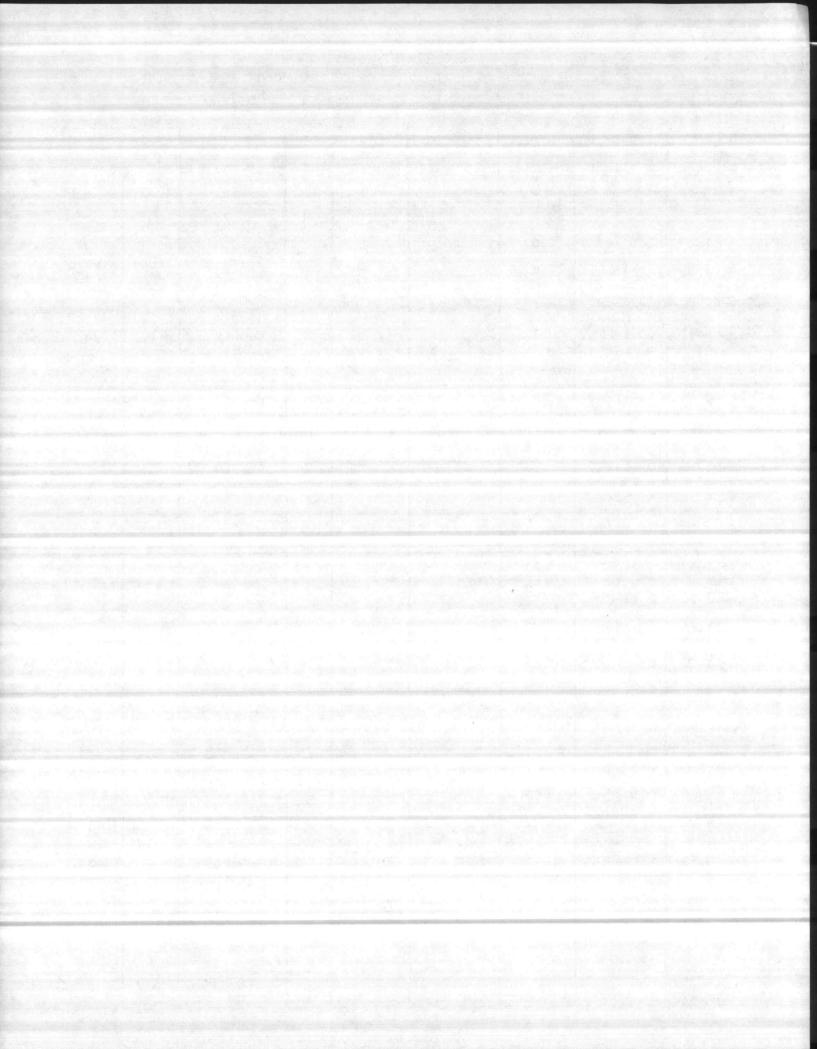


TABLE I
CRAWL INFORMATION IN RELATION TO MOON AND TIDE CYCLES AND WEATHER CONDITIONS
(Nights handled as a whole, not broken at midnight.)

DATE		m: 6	Time	Time Crawl			Tem	p
DATE Night of	Moon Rise % Illumin	Time of Hi Tide	Crawl W/o nest	W/ nest	Total	Weather	H <sub>2</sub> 0	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 Fair &	24°C	23.5°C
6-27-80	1850-98%	0723	2200	2245	2	Clear Fair &	24°C	24°C
6-28-80	1945-100%	1943		2200	0	Clear Fair &	24°C	26°C
6-29-80	2037–99%	2028		6638 6166	3	Cloudy Fair &	25°C	26°C
6-30-80	2125-97%	2114	2115 2300		1	Cloudy Fair &	24°C	22.5°C
7–1–80	2209-92%	2201	0030		2	Clear Fair &	24°C	24°C
7-2-80	2249-85%	2251	0215		1	Clear Thunderstm	26°C	27°C
7–3–80	2328-75%	2346	2245	2230 2300	2	Clearing Cloudy, Occ.	24.5°C	23°C
7-4-80	0005–65%	0043		2300 2300 2300	3	Showers Fair &	24.5°C	24°C
7-5-80	0043-54%	0148		2400	1	Clear Fair & Ptly	26°C	26°C
7–6–80	0122-42%	0253	2345	2310	3	Cloudy Fair &	26°C	26°C
7–7–80	0203-31%	0356	0230	2340	3	Clear Fair &	24.5°C	26°C
7-8-80	0248-27%	0457		0200	1	Cloudy ThundStm	26°C	26°C
7-10-80	0431-6%	1820 0645	0015 0115	2345	5	2200 Clearing240	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	2345	5	Fair & Clear	26°C	26°C
7-17-80	1009-21%	2323	2240 0400	0245	3	Fair & In- crsg Clouds		26°
7-18-80	1103-29%	0006	2200	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

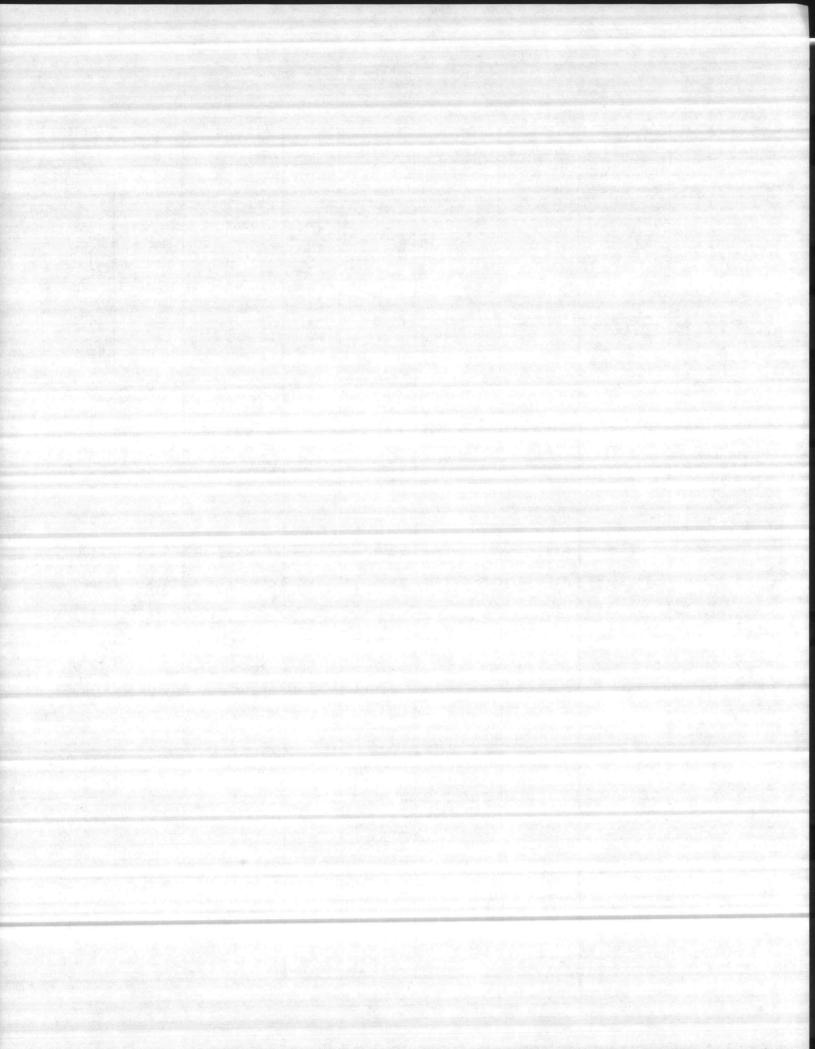


TABLE I
CRAWL INFORMATION IN RELATION TO MOON AND TIDE CYCLES AND WEATHER CONDITIONS
(Nights handled as a whole, not broken at midnight.)

DATE	Moon Rise	Time of	Time Crawl	Time Crawl			Temp	
Night of	% Illumin	Hi Tide	W/O nest	W/ nest	Total	Weather	н <sub>2</sub> о	Air
			1 m 1 m 1 m	2330		Fair &		
7-20-80	1250-48%	0149	2200	0330	3	Clear	27°C	28.5°C
		19 April 19				Fair & Incrs	g c	
7-21-80	1345-57%	0241			0	Cloudiness	27.5°C	27°C
				0040		Fair &	0-	0-
7-22-80	1442-67%	0338	, j	0035	2	Cloudy	27°C	27°C
7-23-80	1539-76%	0431		0030	1	Rainy	25°C	25°C
. 23 00	1337-70%	0431		0030		Fair &	25	23 0
7-24-80	1639-84%	0521		2215	1	Cloudy	26°C	26°C
			approved the second sec			Fair &		. = . 4.6
7-25-80	1733-91%	0612		2215	1	CLoudy	26°C	26.5°C
		1835	2200 1835		22	00-2400 Rainy		
7-26-80	1827-96%	0658	0200			200 Thundstms		24.5°C
		1922	2200 2210			Heavy .		
7–27–80	1917-99% Full	0745	2200 2230	2210	4	Rain	-	-
7-28-80	2004-100%	2009		2210	2	Cloudy	27°C	26°C
,-20-00	2004-100%	2007		2210	-	Partly	2, 0	200
7-29-80	2047-98%	2054			0	Cloudy	27°C	25°C
						Fair &		
7-30-80	2128-93%	2144		2120	1	Clear	27°C	26°C
7 04 00	2224 247					Fair &	27.5°C	27.5°C
7–31–80	2206-86%	2233	0130		1	Clear 2000-2200	27.5 6	27.5 0
				2200 2200		Thunderstorm		SA CONTRACTOR OF SA
8-01-80	2224-77%	2328	0315	0245	4	2400 Clearin		26.5°C
				2330	1	Fair &		
8-02-80	2323–67%	0026	eller om get en gran at en ma	2330 8355	3	Clear	27°C	28°C
8-03-80	0003/44%	0129	2		2			and the state of the
8-03-80	0003744%	0129	2		4	Partly		
8-04-80	0047-33%	0235		2250	1	Cloudy	27°C	28°C
				Mary Control				
8-05-80	0134-23%	0343		2230	1	Clear	27.5°C	28°C
0 06 00	0224 159	0444			0	Clear	27°C	28°C
8-06-80	0224-15%	0444			U	Partly	276	20 0
8-07-80	0318-8%	0540	2400	Martin Carlo de Al	1	Cloudy	27°C	26.5°C
5 Per - 1350 Au -		1806	2300	2245	100	Fair &		44 1364 Feb.
8-08-80	0414-3%	0630	0200	2315	4	Clear	27°C	27.5°C
		1852						
8-09-80	0511–1%	0715			0			
8-10-80	0608-0%	1934 0758		2	2			
0-10-00	0000-078	In the second	Ministration of the second		e la principal de la composição de la comp	Fair &		
8-11-80		2013		dromena chearra caging como	0	Clear	27°C	27.5°C
					en artista			Burdhamari sans a sansa
8-12-80	0705-1%	2052		0230	1	Cloudy	27°C	27°C

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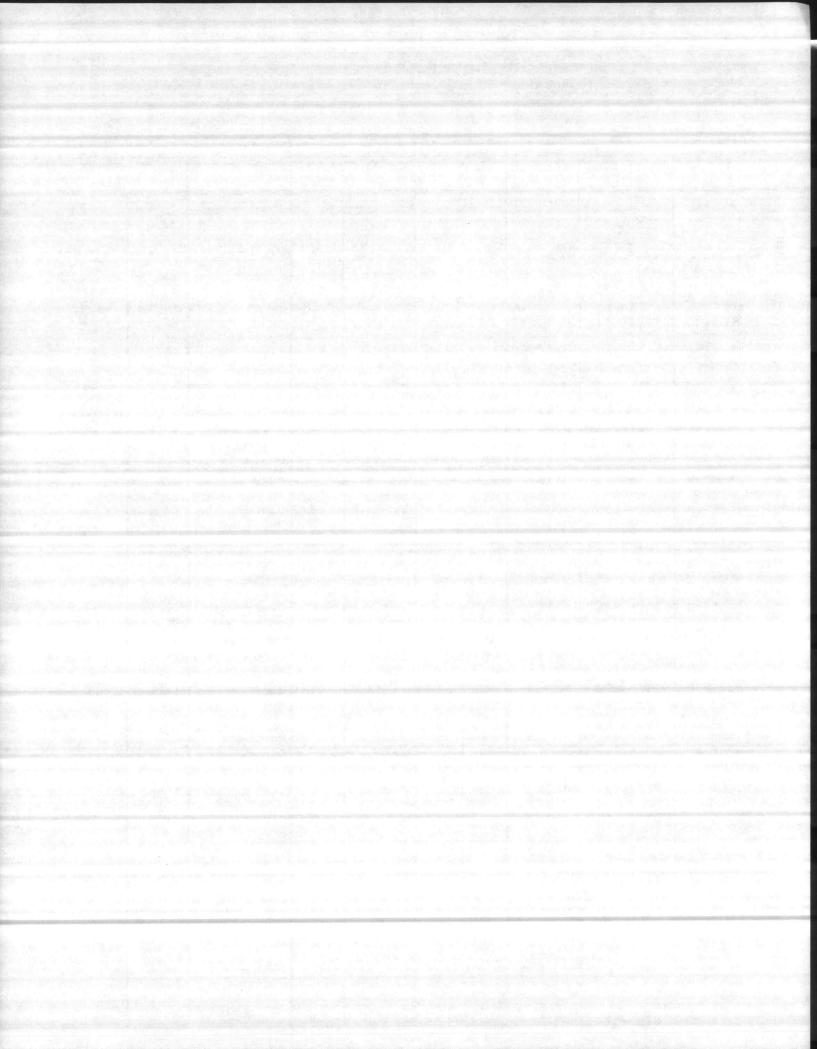
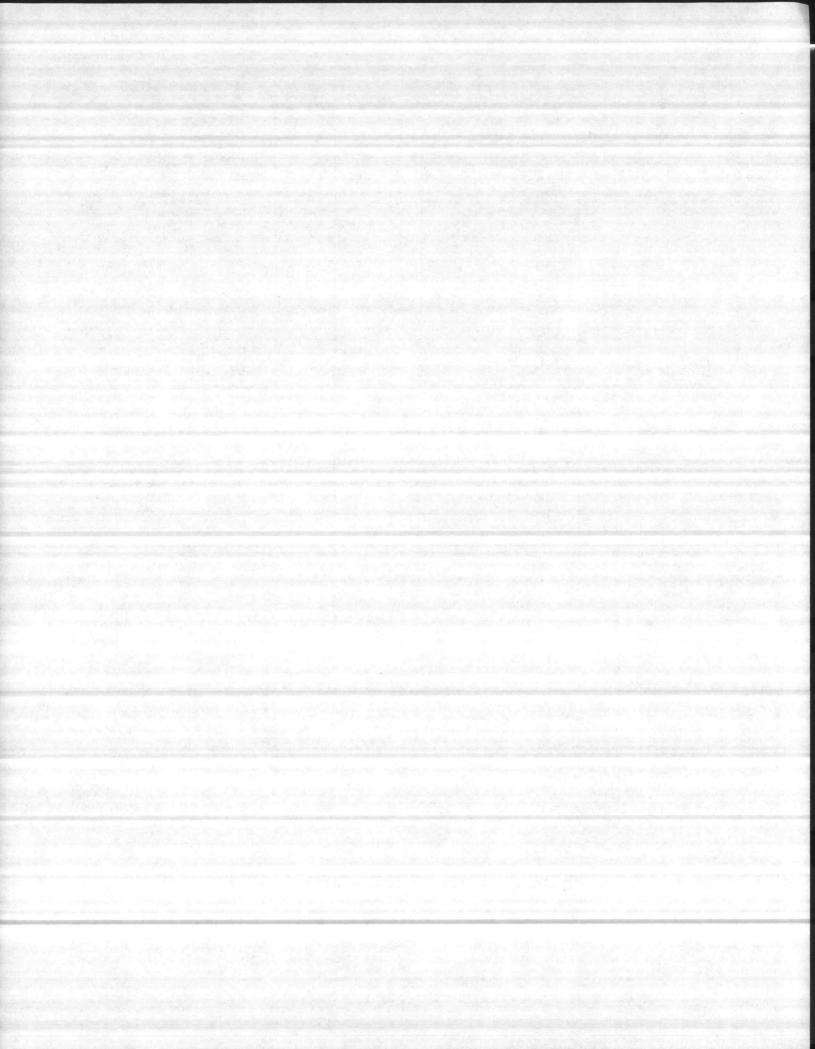


TABLE I
CRAWL INFORMATION IN RELATION TO MOON AND TIDE CYCLES AND WEATHER CONDITIONS
(Nights handled as a whole not broken at midnight)

Date	Moon Rise	Time of	Time Crawl	Time Crawl			Temp	
Night of	% Illumin	Hi Tide	W/O nest	W/ nest	Total	Weather	Н,0	Air
8-13-80	0800-5%	2129			0	Fair & Clear Fair &	27°C	28°C
8-14-80	0854-10%	2206	2230	2300	2	Clear &	27°C	28°C
8-15-80	0948-16%	2243			0	Windy	27.5°C	26.5°C
8-16-80	1041-23%	2323		1	1	Cool 9		
8-17-80	1135-32%	0010	0245		1	Cool &	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 4/17/80 - 8/9/80

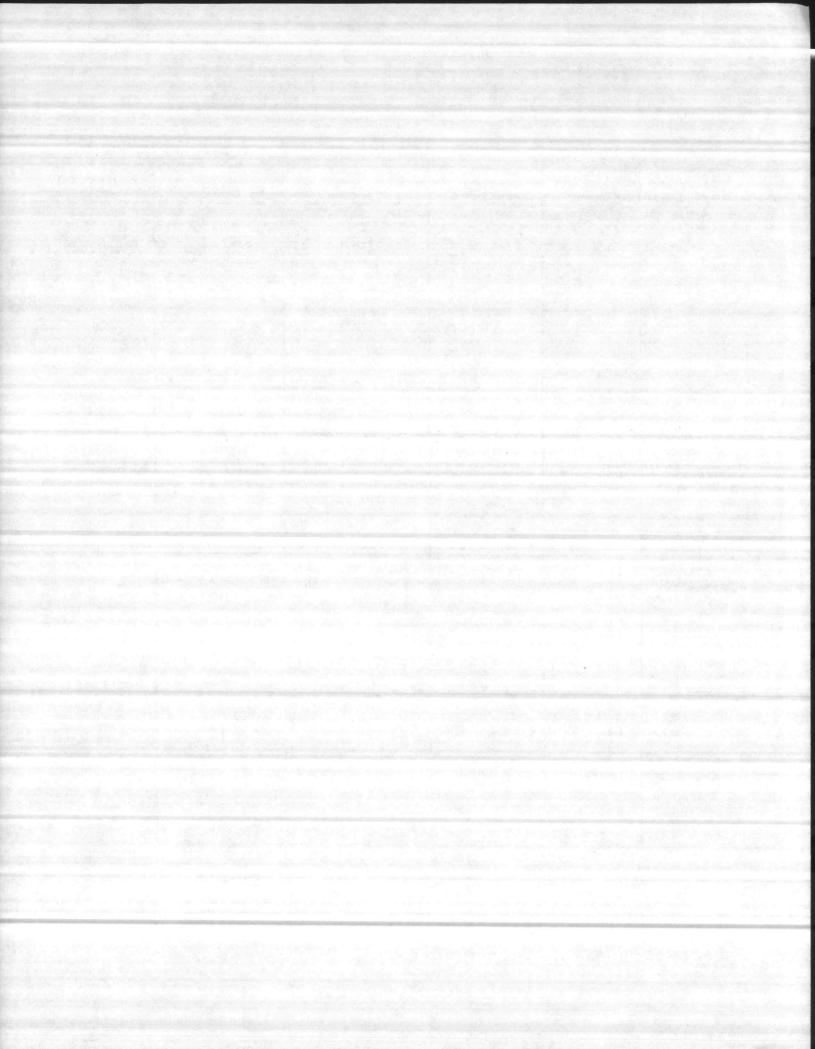
Date	Tag #	Return	Return	Return	Return
6/17/80	651	A SHARE SEE AND			
6/17/80	652	7/3/80 🐼	7/16/80	7 / 28/80	
6/19/80	653				
6/19/80	654				
6/20/80	655	7/3/80 🔗	7/15/80 ⊗ Retag 640	7/28/80	8/8/80
Green					0
6/25/80	657*	7/9/80 Retag 669	7/21/80 Retag 649	8/2/80	8/17/80
6/26/80	NC0001	7/11/80@	7/24/80		
6/27/80\$	648	7/24/80			
6/27/80	658				n deservation updates to
6/29/80	650	7/12/80			
6/29/80	659				
6/30/80	660	7/14/80 🛇	7/16/80	8/1/80	
		Retag 672		0,1,00	
7/1/800	661	7/14/80	7/26/800	8/8/80	
7/3/80	662		.,, _		
7/6/80	663	the second second second second	A Company		
7/6/80∅	664				
7/7/80	667	8/18/80	8/20/80		
7/8/80⊗	665				
7/8/80⊗	666				
7/10/800	670	7/23/80			
7/11/800	671		The second of the second of		
7/14/80	673				
7/14/800	674				
7/15/80	675				
7/17/80	641				
7/17/800	642	7/18/80			
7/18/80	647	7/20/80	8/2/80		
7/19/80	645	1,20,00	0,2,00		
7/23/80	646				early conservation of the
7/25/80	644				A Property and
7/30/80	633				
8/1/80	639	8/14/80	: - 기계 :		
8/3/80	638				
8/4/80	634				
8/5/80	637				
8/7/80	636	8/12/80			
8/9/808	635				and the control of the property of the second
A The second sec					

#### Tagged or

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

<sup>2 -</sup> Crawl body pit and eggs indicative of Green Turtle but turtle not observed

<sup>1</sup> 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

		FLI	9 4	5		Al	ERIA	AL SU	RVE	7										
		May	30	)		May	31													
	N	FC	Т	SB	N	FC	Т	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	P <sup>aga</sup>		June	14													
	N	FC	Т	SB	N	FC	T	SB												
Onslow Beach	0	1	2	1	O	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			Jul	Ly 2	1
	N		Т	SB	N	FC	Т	SB	N	FC	Т	SB	N	FC	Т	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		2	0	2	2	0	0	0	0	0	0	1	0	0	2	4	1	0	0
		ŭ		Ĭ			ŭ		ŭ	ŭ	Ü	ŭ		·	Ü			•	Ŭ	
		Aug	1			Aug	11			Aug	12									
	N	FC	T	SB	N	FC	T	SB	N	FC	Т	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								
		TO	TAL					10												
	N	FC	T	SB																
Onslow Beach	7	9	4	13																
			-											76						

Key N - Fresh Nests

Brown's Island 19

Bear Island

FC - Fresh False Crawls

T - Turtles sighted off coast

16 5 2 6

42 18 10 30

SB - Shrimp Boats

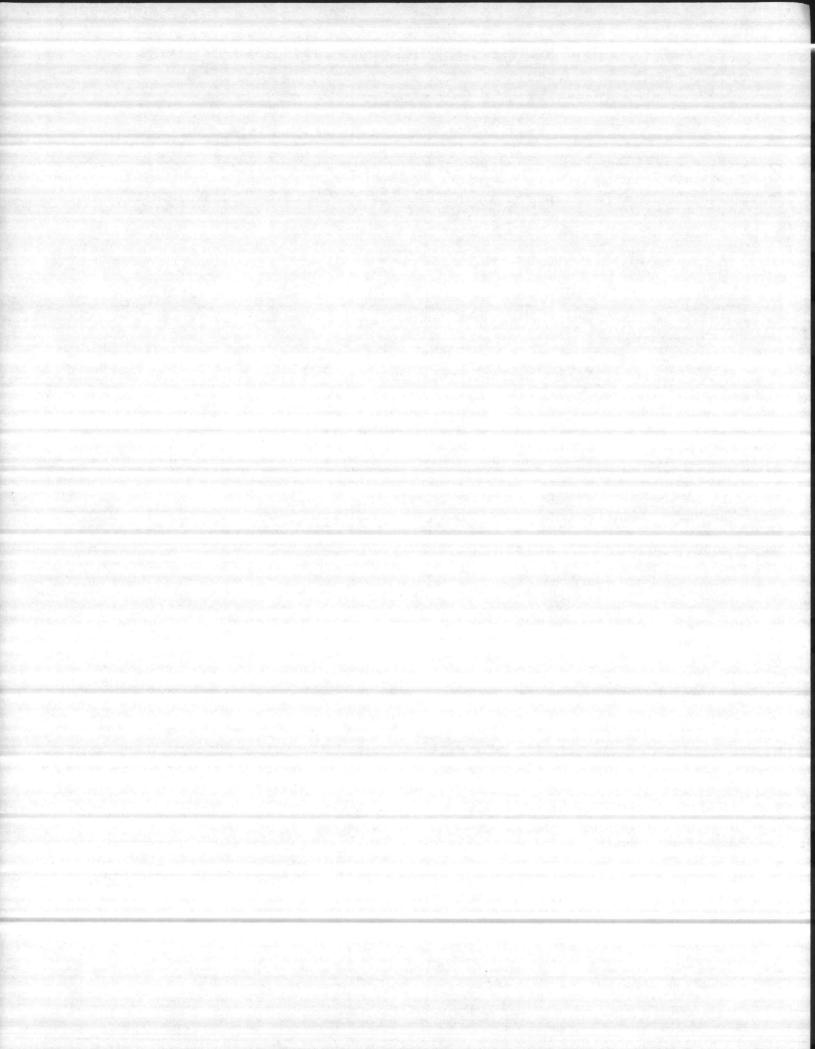
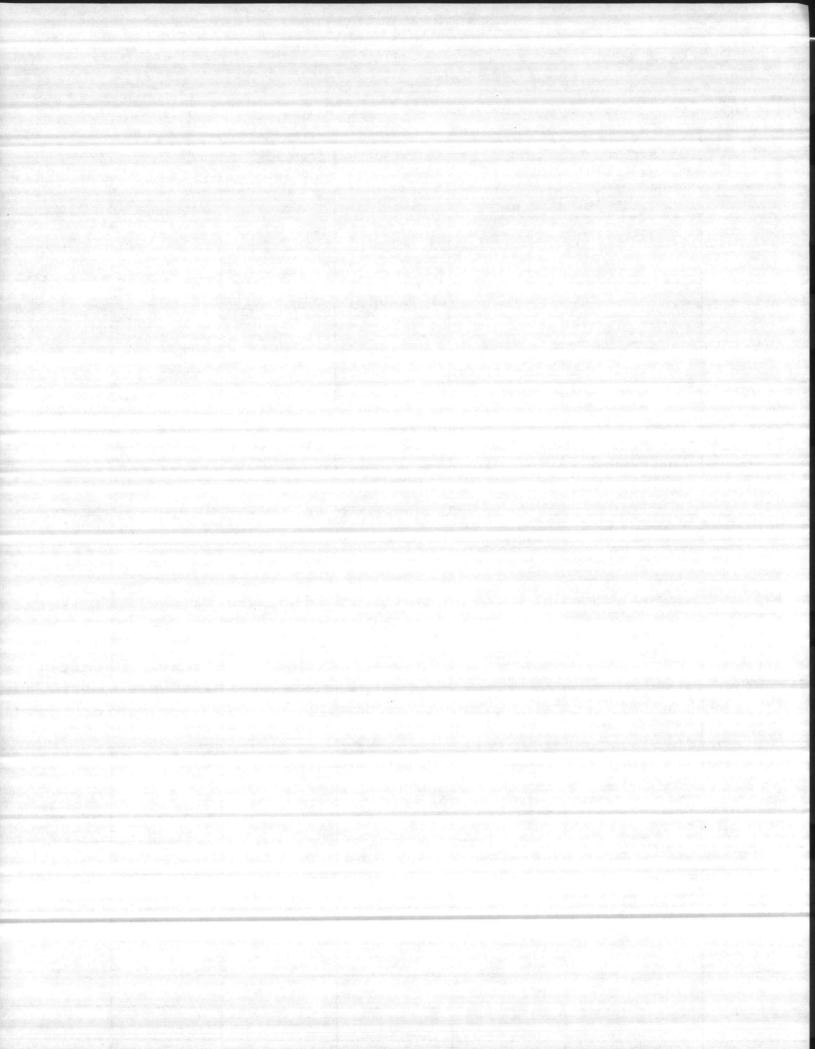


TABLE IV

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

1980

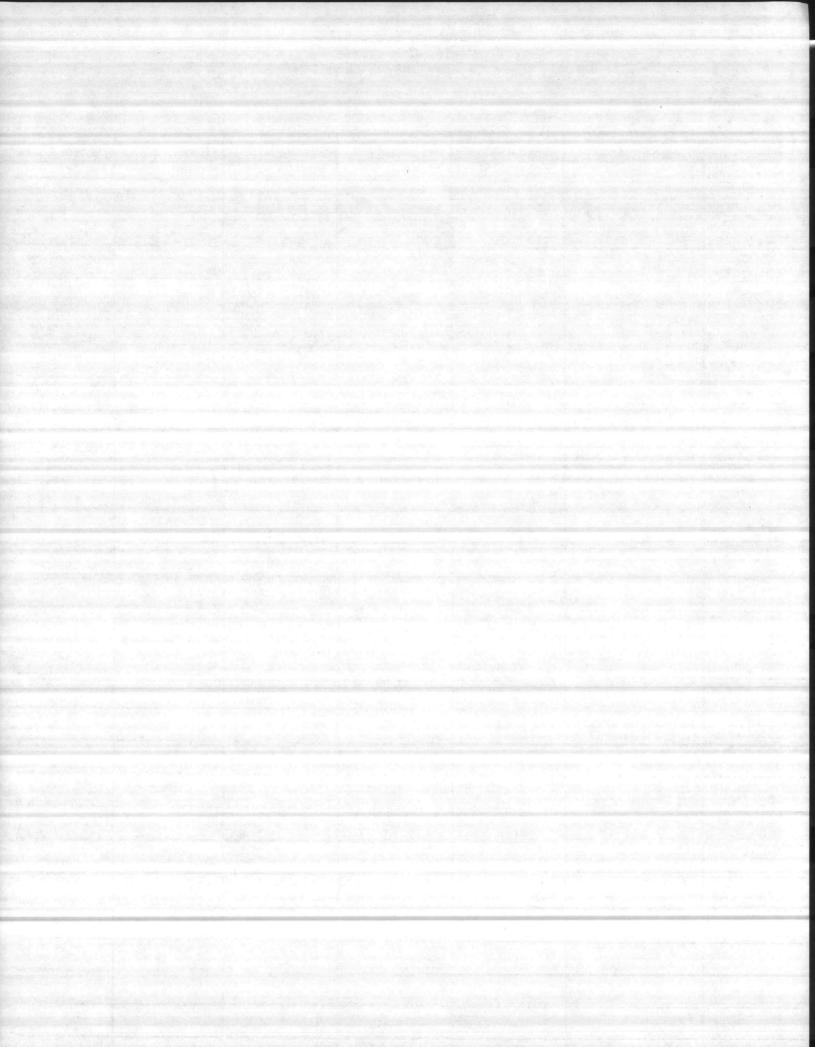
	*Gre	en Turtle					
Nest No.		Incubation Period DAYS	Total Eggs	Released Young	Emerged Young	Total Young	Percent of Success
001		65	115	67	39	106	92.2%
002		63	166	158	3	161	97 %
003		63	134	4	69	73	54.5%
006	IMS	69	53	24	<u></u>	24	45.3%
007			126	0	0	0	0
012		65	102	81	4	85	83.3%
013		64	175	4	119	123	70.3%
015		63	134	0	128	128	95.5%
016	IMS		121	on our design construction in the			
018	IMS		101				
019		64	86	6	75	. 81	94.7%
021		63	143	0	114	114	79.7%
* 022		56	168	148	0	148	88.1%
026	n 1 2000	60	100	0	91	91	91. %
027		59	72	0	71	71	98.6%
028	IMS		119	ne da de la companya			
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	1.24	62	131	125	4	129	98.5%
042		59	78	7	58	65	83.3%
043		62	99	98	0	98	99.9%
046	30.00	58 ,	183	144	0	144	78.7%



### 1980

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

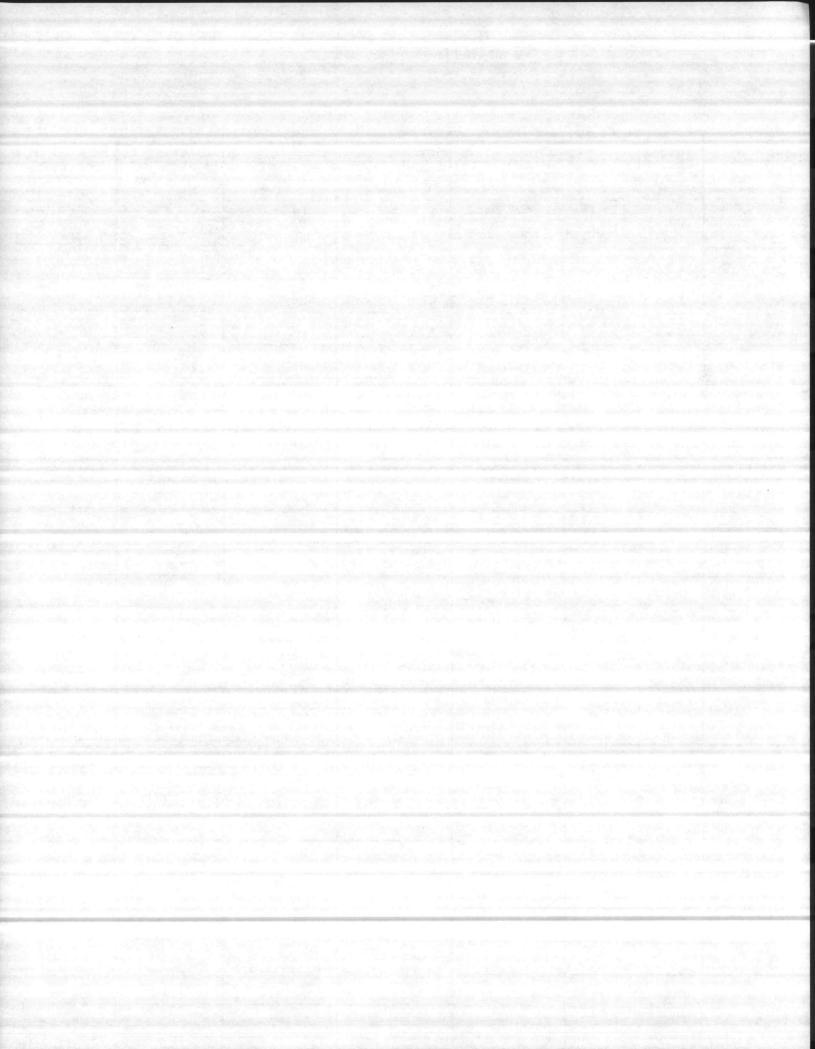
	1.0						
Nest No.		Incubation Period	Total Eggs	Released Young	Emerged Young	Total Young	Percent of Success
104	IMS	0	1	0	0	0	0
107	IMS		179				
108	IMS		134				
110	IMS		104				
112	IMS		104				
114	IMS		120	10 mm			
115	IMS		80				
116	IMS		83				
118	IMS		112		Mari		
*119	IMS		145				
121	IMS	- Ma	75				
125	IMS		99				
		The second of the second					
		To	TALS				
64			7352	n de Prima d			
26	IMS		2823		The state of the s	sen de la company	
37	ОВ		4529				
GREEN	TURTI	E	819	(11.14% OF	TOTAL)		
a1 25							
	and the second						
r an annual							
	All Mark	entropolis on surprise propries and the second			en periodi anno il proteccio della propositi di conseguio		
	i figure						H. B. Harris
					tion designation of the state o		and the literature of the August



#### 1980

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

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	496	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	A CONTRACT			
082	IMS		96				
083			134	e page de la companya de la company La companya de la co			
084	n un anna ann an an	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			en e	THE STATE OF
103	IMS		78				



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

Date Lain	Nur Lain	nber 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	a carrier l	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

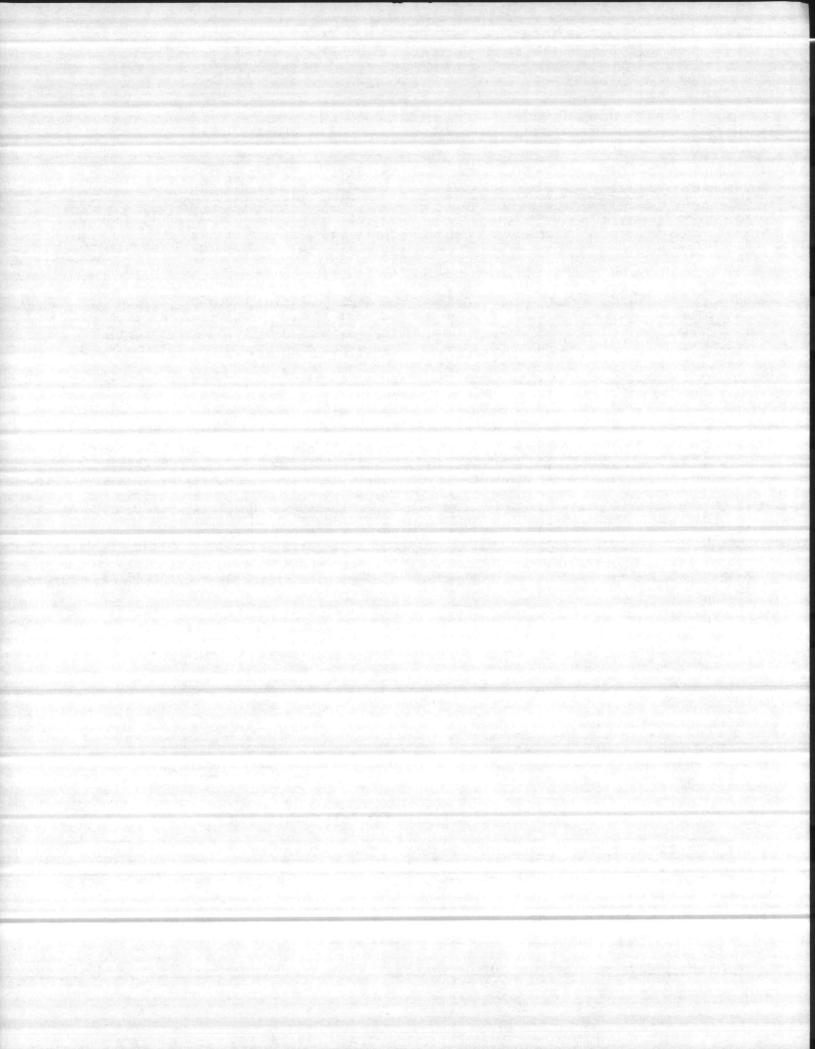
1979 Camp Lejeune Data - 21 Nests (all loggerheads)

Total Eggs Lain	Hatched	%_	Released	%
2,572	1,378	53.6	1,357	98.5
% Hatch Ranged:	0.8-99.2			

<sup>\*67</sup> others developed but did not hatch. \*\*44 others developed but did not hatch.

Loggerhead - 1,329 84.1%

<sup>93.8%</sup> Green



 $\begin{array}{c} \text{TABLE V} \\ \text{Ground Survey Numbers} \end{array}$ 

Date	Crawls No Nest	Crawls/Nest	Total Crawls	
5-30-80		1		
6-2-80		1	1	
6-4-80	* 1			
6-9-80			2	
6-11-80	1	2	3	
6-13-80	1			
6-14-80	2		1 2	
6-17-80		2	2	
6-19-80	1	1	2	
6-20-80	÷ 1	1		
6-21-80	1	1	2	
6-22-80				
6-25-80		2	2	
6-26-80		1		
6-27-80	2		2	
6-29-80	1	1	2	
6-30-80		2	2	
7–1–80	1	1	2	
7-1-80	1		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
7-3-80	2		1	
7-4-80		1	3	
7-5-80		3	and the state of 3 and the state of the state of	
7-6-80	1	1 2	1	
7-7-80	·	1	3	
7-8-80	2	1	1	
'-9-80	4		2	
7-10-80	1	1	1	
'-11-80	5	1	2	
-12-80			5	
-14-80		1	1	
	5	2	7	
7-15-80	3	1	4	
-16-8U		3	3	
-17-80	3	1	4	
-18-80	1	1	2	
-19-80	1	1	2	
-20-80	3	1	4	
-21-80		1	1	
-23-80		2	2	
-24-80		2	2	
-25-80		1	1	
-26-80	2		2	
-27-80	5		5	
-28-80		2	2	
-30-80		1		

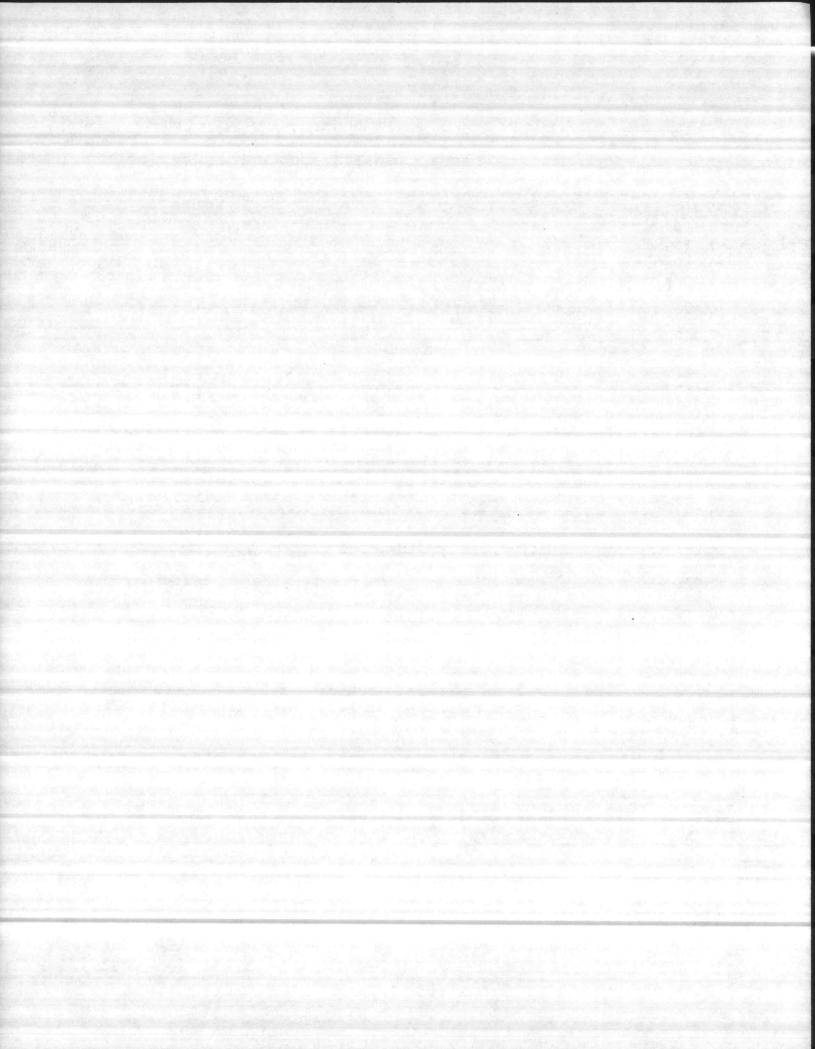


TABLE V Cont'd
Ground Survey Numbers

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	Transfer and		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

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

	ate	Nu	mber ·		
La	ain	Lain	Hatched	% Hatch	Locality
11	June	54	24	44.4	0.15 mi S. Risley Pier
THE PERSON NAMED IN	June	721	82	68.1	0.6 mi S. Risley Pier
22	June	101	87	86.1	2.7 mi N. Risley Pier Sheet 16
*	June	117	26*	22.2	1.0 mi S. Risley Pier Sheet 16
10	July	119	0	0.0	Nest 048 - all infertile
	July	120	43**	26.7	0.8 mi S. Risley Pier Grid 843254
	July	166	1	.006	green turtles
	July	96	94	98.0	0.8 mi S. Risley Pier Grid 892255
	July	128	52	40.6	0.4 mi S. Risley Pier Grid 897258
	July	101	11	10.9	0.8 mi S. Risley Pier Grid 892255
	Aug	157	32	20.4	Nest 100 Grid 916275 - green turtles
	Aug	75	68	90.7	Nest 099 Grid 894257
	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
	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
	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
	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

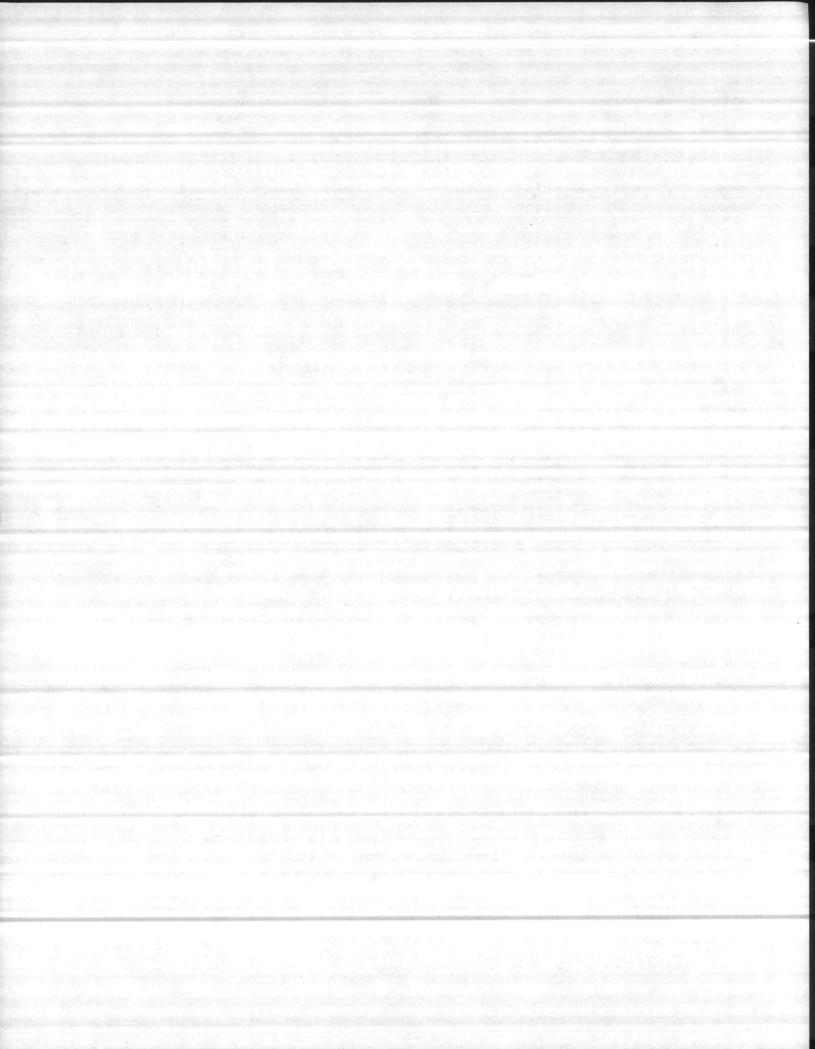
84.1% Loggerhead - 1,329

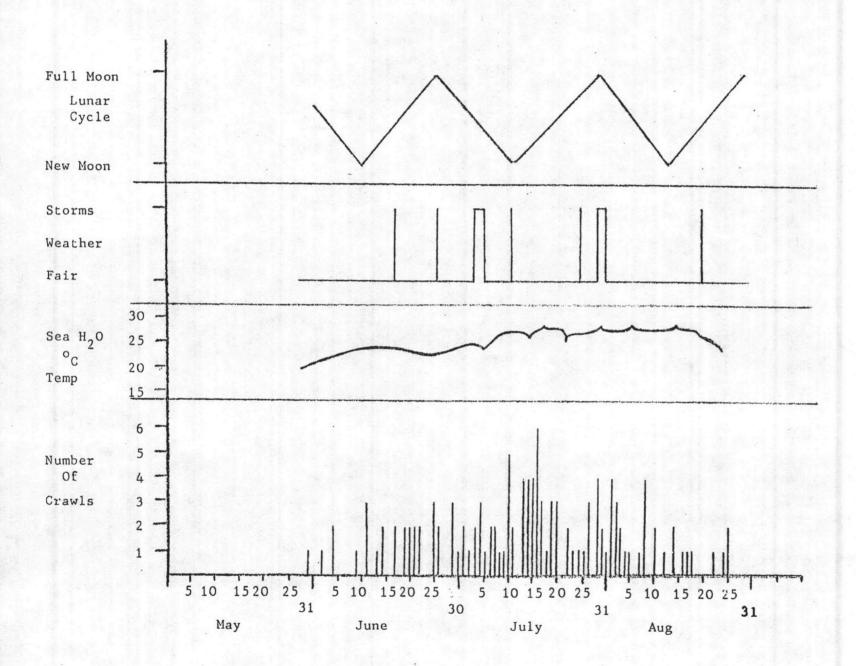
93.8% Green

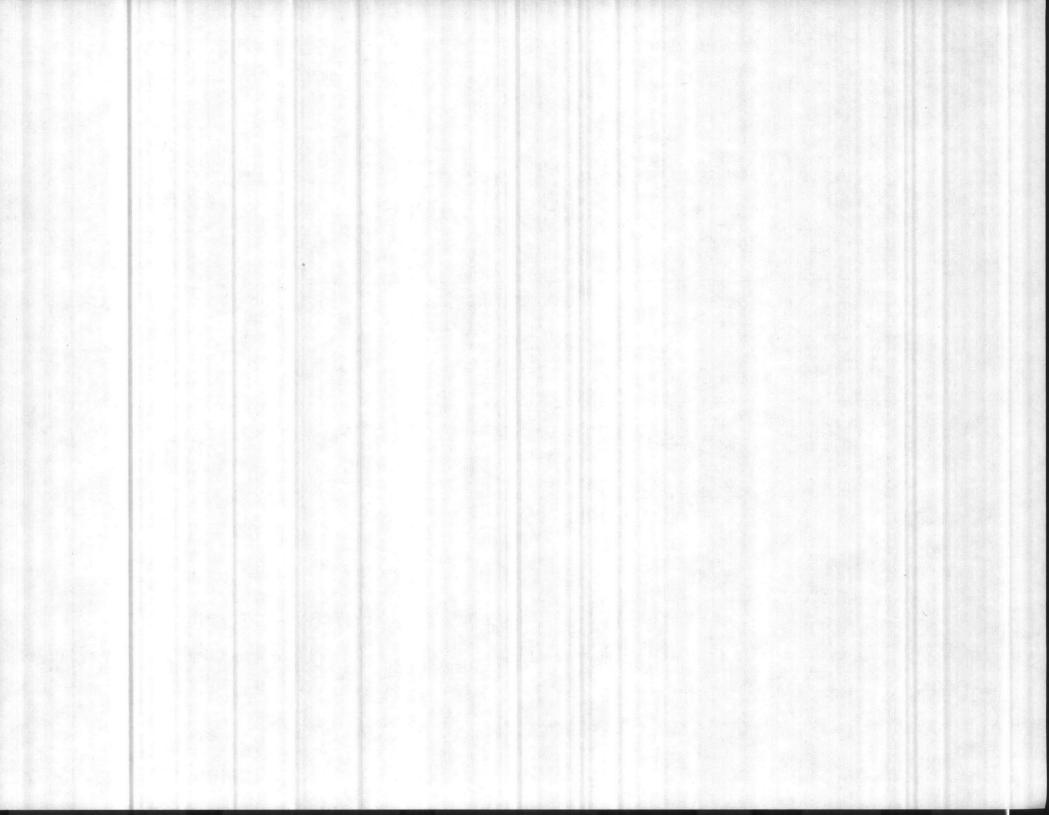
1979 Camp Lejeune Data - 21 Nests (all loggerheads)

Total Eggs Lain	Hatched	%	Released	8
2,572	1,378	53.6	1,357	98.5
% Hatch Ranged:	0.8-99.2			

<sup>\*67</sup> others developed but did not hatch. \*\*44 others developed but did not hatch.

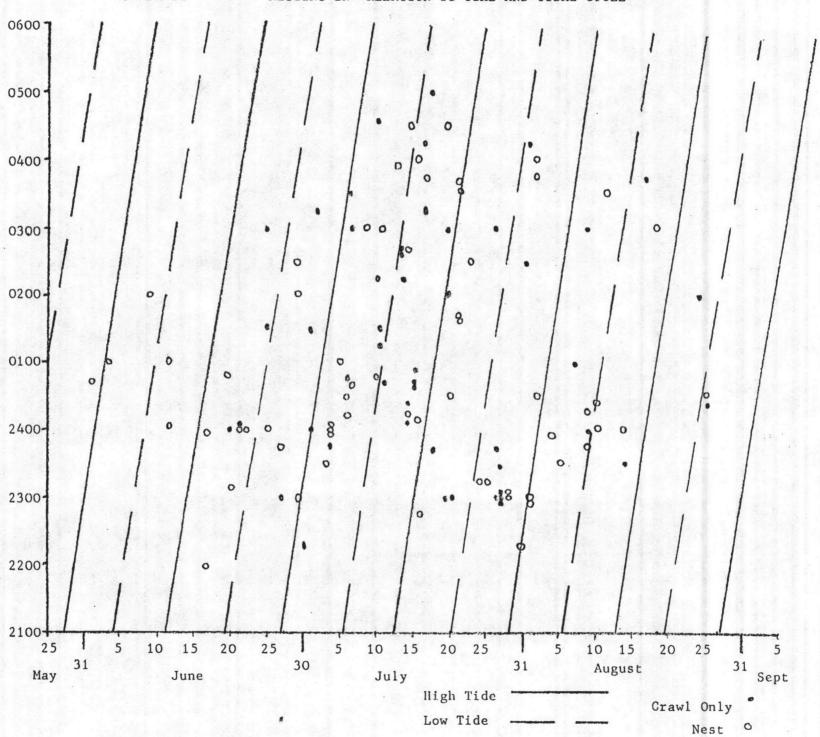


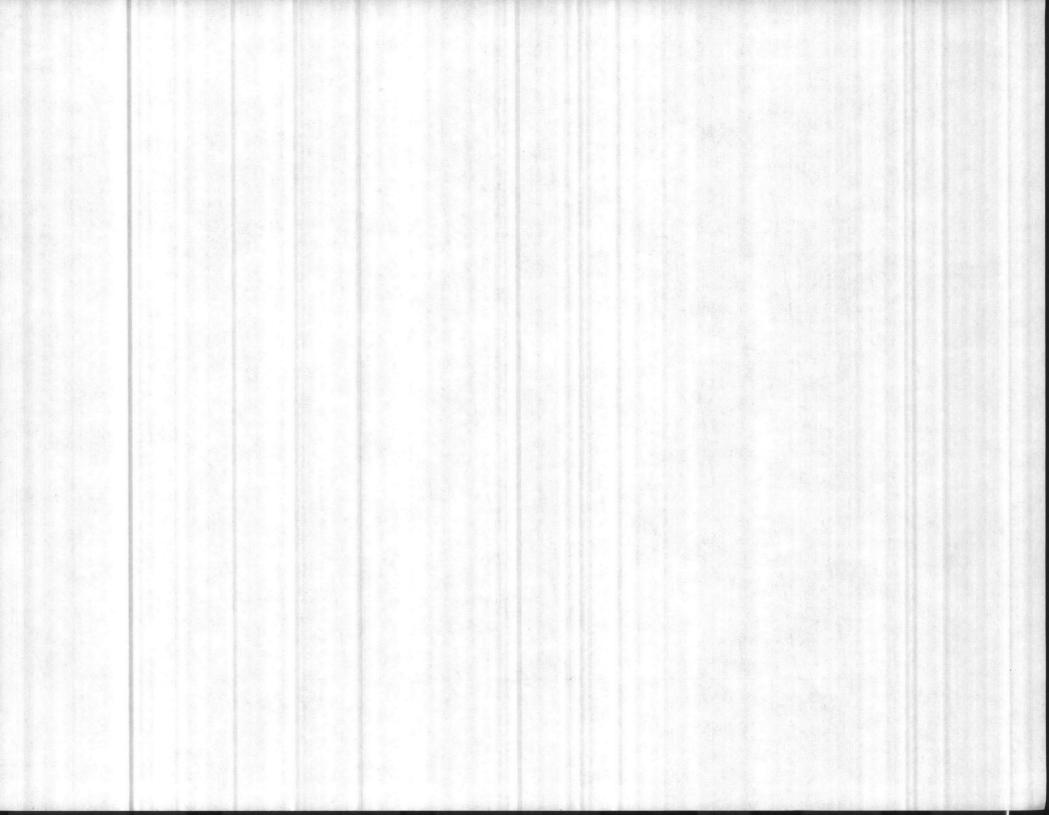


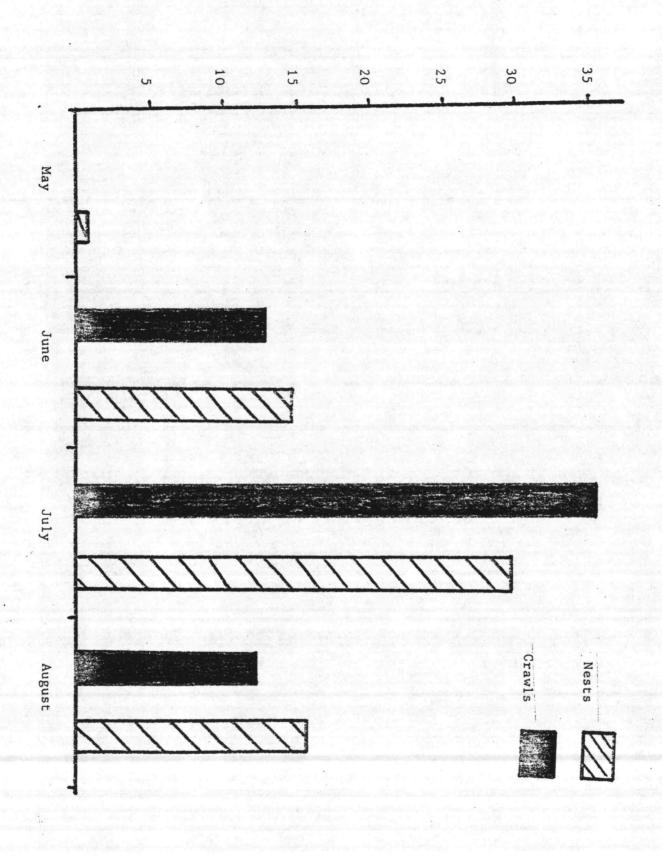




### NESTING IN RELATION TO TIME AND TIDAL CYCLE

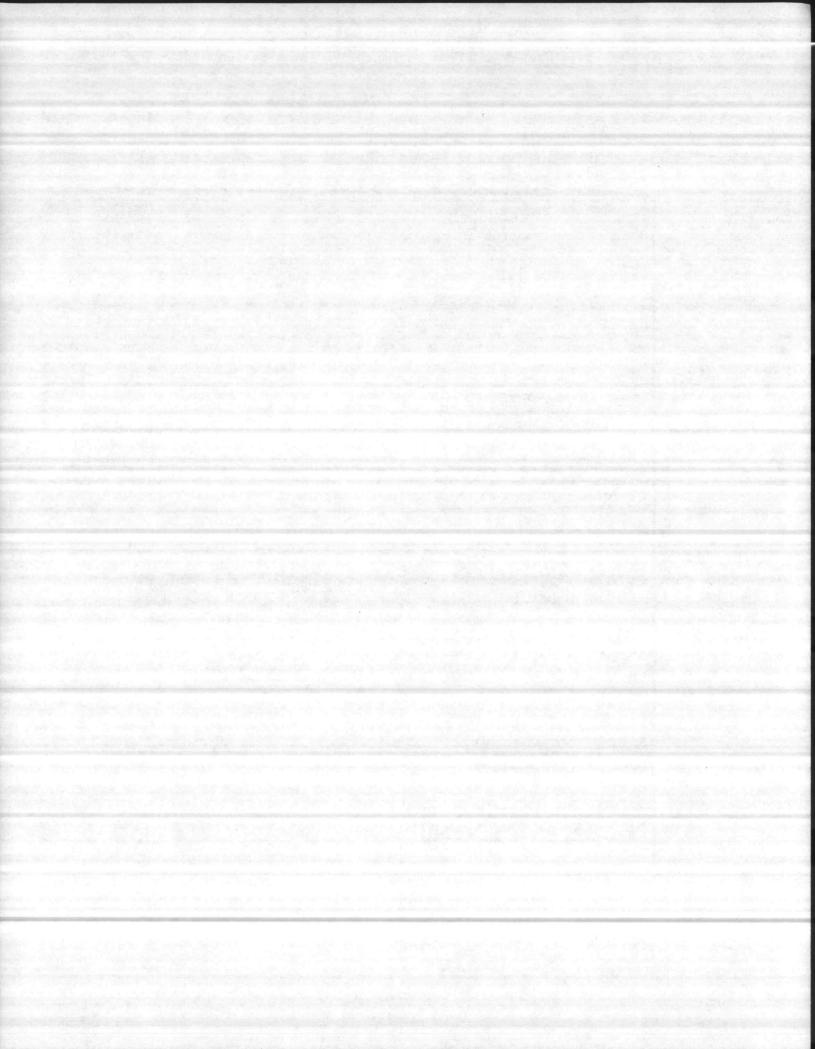






TOTAL CRAWLS AND NEST

BY MONTH 1980 NEST SEASON



#### TABLE III

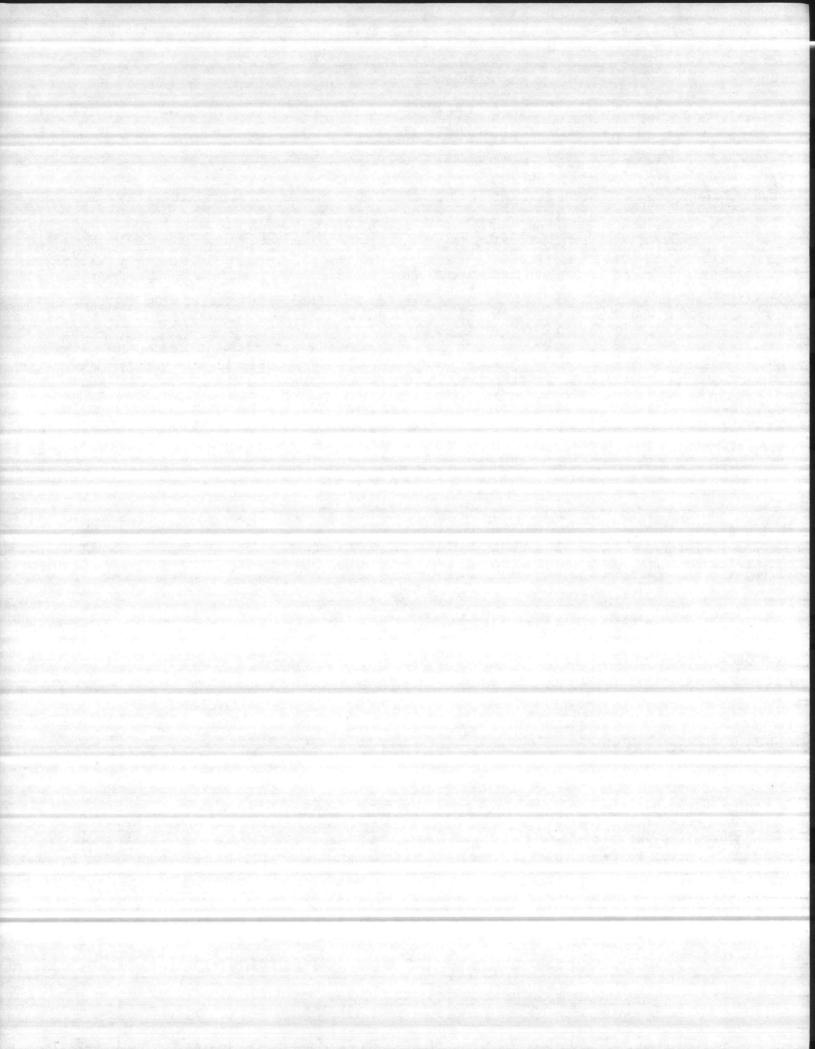
#### AERIAL SURVEY

		May	30			May	31													
	N	FC	T	SB	N	FC	Т	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	Т	SB	N	FC	T	SB												
Onslow Beach	0	1	2	1	O	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	7 2			July	, 11			July	12			Jul	ly 2	11
	N	FC	Т	SB	N	FC	Т	SB	N	FC	Т	SB	N	FC	Т	SB	N	FC	Т	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									
		FC	Т	SB	N	FC	Т	SB	N	FC	Т	SB								
Onslow Beach	N O	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		1								
		TC	TAL																	
	N	FC	Т	SB																
Onslow Beach	7	9	4	13																
Brown's Island	19	4	4	11																

N - Fresh Nests Key FC - Fresh False Crawls T - Turtles sighted of: Coast SB - Shrimp Boats

Bear Island

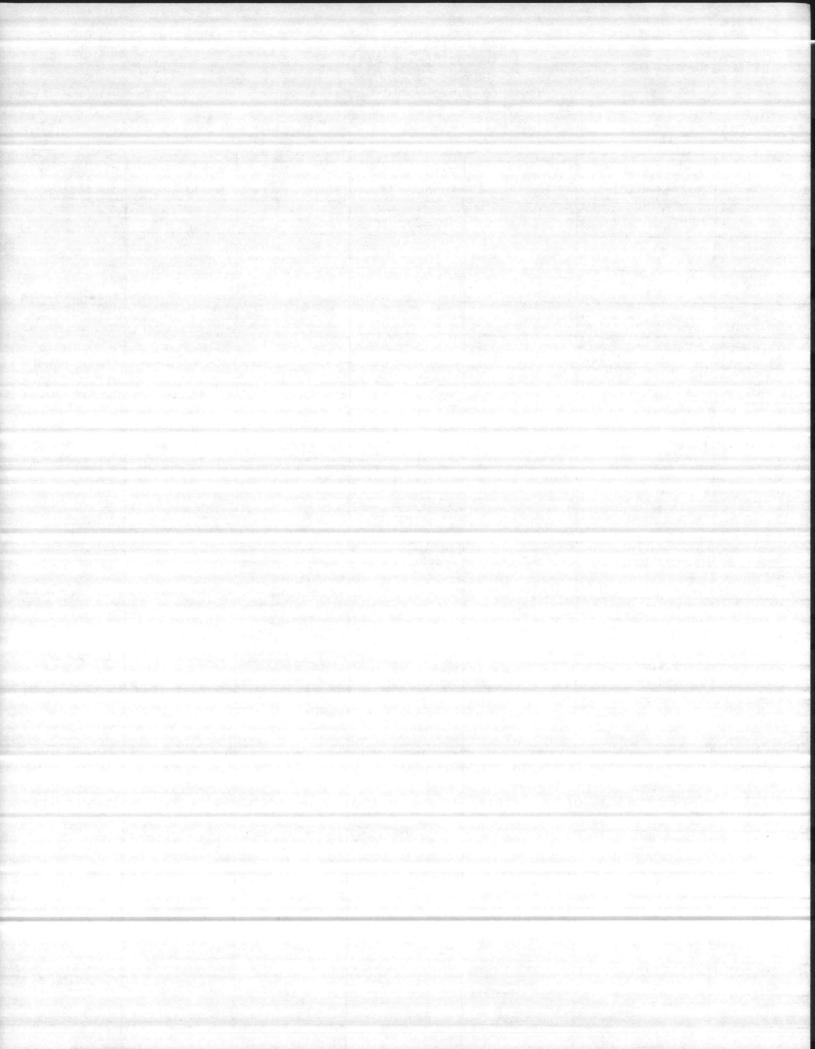
42 18 10 30



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

1980

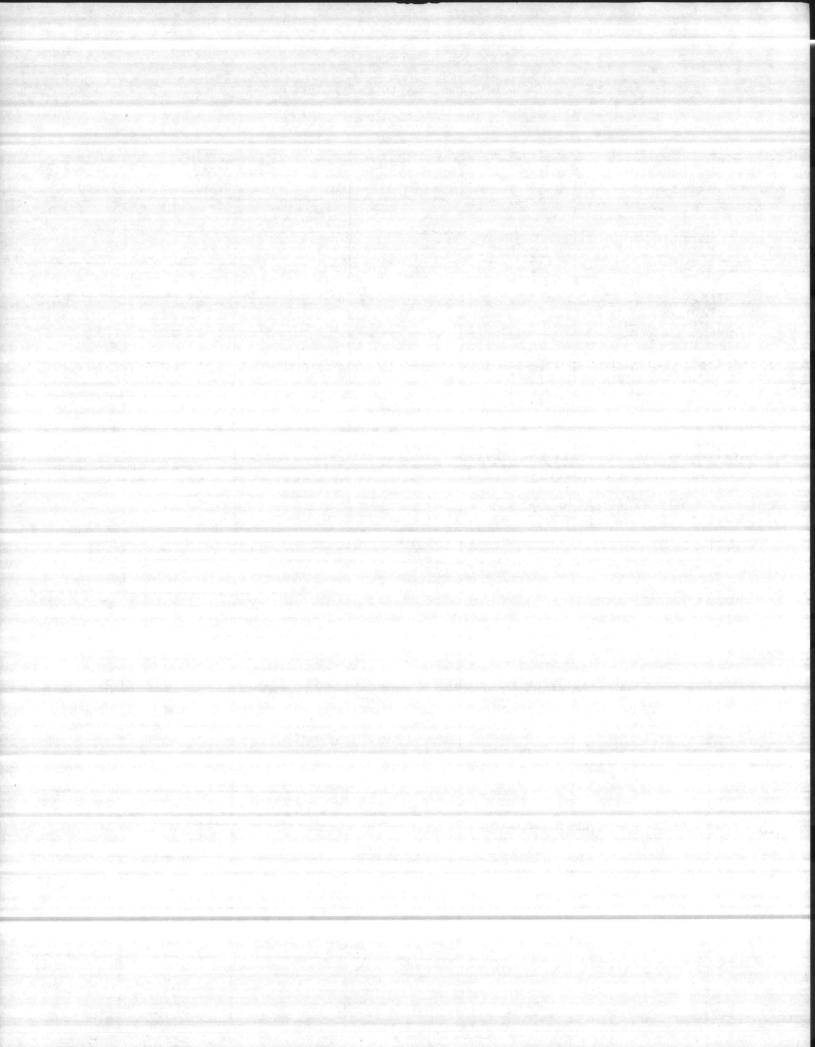
	*Gre	en Turtle					
Nest No.		Incubation Period DAYS	Total Eggs	Released Young	Emerged Young	Total Young	Percent of Success
001		65	115	67	39	106	92.2%
002		63	166	158	3	161	97 %
003		63	134	4	69	73	54.5%
006	IMS	69	53	24		24	45.3%
007			126	0	0	0	0
012		65	102	81	4	85	83.3%
013		64	175	4	119	123	70.3%
015		63	134	0	128	128	95.5%
016	IMS		121				
018	IMS		101				
019		64	86	6	75	81	94.7%
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	year or in	60	127	2.5	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	lev og a Dom i hansi	60	167	161	0	161	96.4%
040		62	131	125	4	129	98.5%
042		59	78		58	65	83.3%
043		62	99	98	0	98	99.9%
016		58	183	144	0	144	78.7%



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

1980

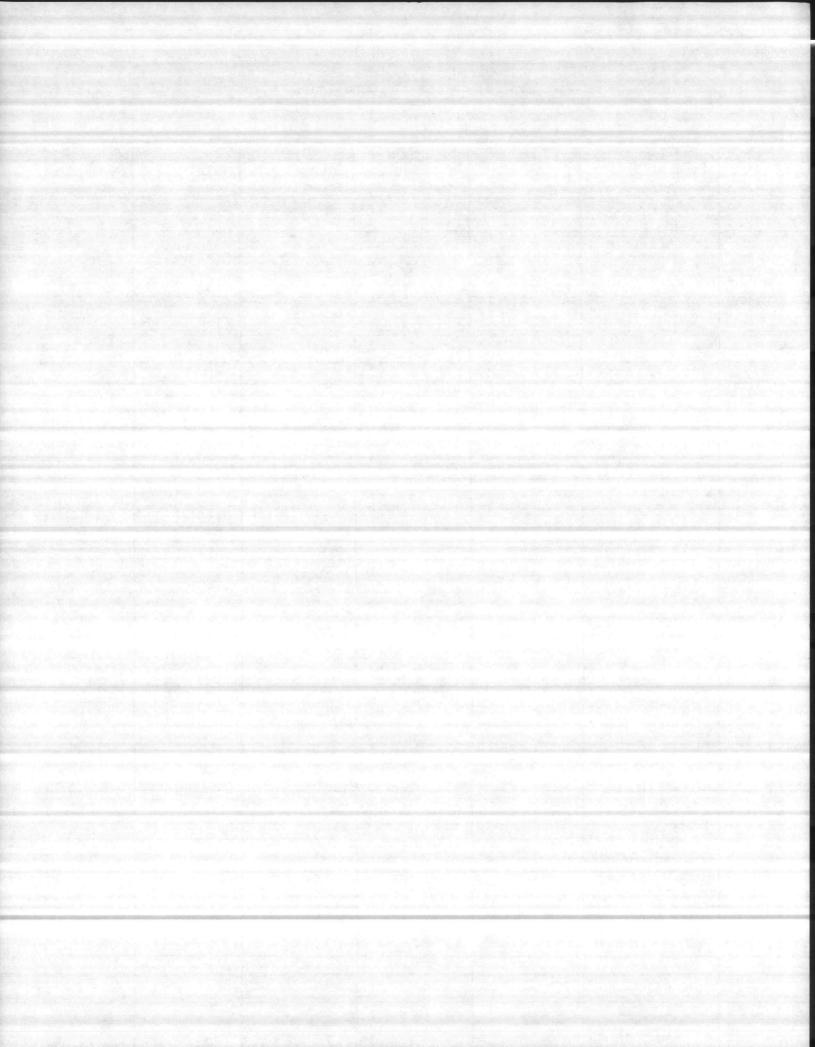
lest lo.	Incubation Period	Total Eggs	Released Young	Emerged Young	Total Young	Percent of Success
104 IM	s o		0	0	0	0
107 IM	S	179				
108 IM	S	134				The state of the s
110 IM	S	104				
112 IM	S	104		en e		200
114 IM	S	120				
115 IM	S	80				A A XX
116 IM	S	83				
118 IM	S	112				
*119 IM	S	145				
121 IM	S	75				
125 IM	IS	99				
						100
	To	TALS				
64		7352				
26 IM	IS	2823		te de la companya de		
37 O B	e e Paras anno a sao an Arab (Black)	4529	er verse all Arennes e de Chiedrane engle	Manual service and and Republican		
			apple of the second			
GREEN TUR	RTLE	819	(11.14% OF	TOTAL)	and the standard	is a sure little to display the Philosoph



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

1980

est o.		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	the state of the s			
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				4-
084	reconstruction of	59	116	4	106	110	94.8%
085		61	114	0	111	111	97.4%
086		ana i sa 22 si sa 28 da mayo 19 sa sa maganda	89		orania de la companya del companya del companya de la companya de	or or an experience of the second	
094	IMS		132				
095	IMS	in our other plants on some	102		Her March Constitution of the Constitution of		
096			88	0	74	74	84.1%
098	IMS		114				
099	IMS		78				
*100	IMS		157				
102	IMS		114				A SAME.
103	IMS		78				一个技術的



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

Date	Nur	mber		
Lain	Lain	Hatched	% Hatch	<u>Locality</u>
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	i	.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 ml 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	ĩ	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
Lo Aug				
	2,844	1,252	44.0	Total Green and Loggerhead
	2,426	1,157	47.7	Total Loggerhead
	418	95	22.7	Total Green

1979 Camp Lejeune Data - 21 Nests (all loggerheads)

Total Eggs Lain	<u>Hatched</u>	_ %_	Released	%_
2,572	1,378	53.6	1,357	98.5
% Hatch Ranged:	0.8-99.2			

<sup>\*67</sup> others developed but did not hatch. \*\*44 others developed but did not hatch.

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

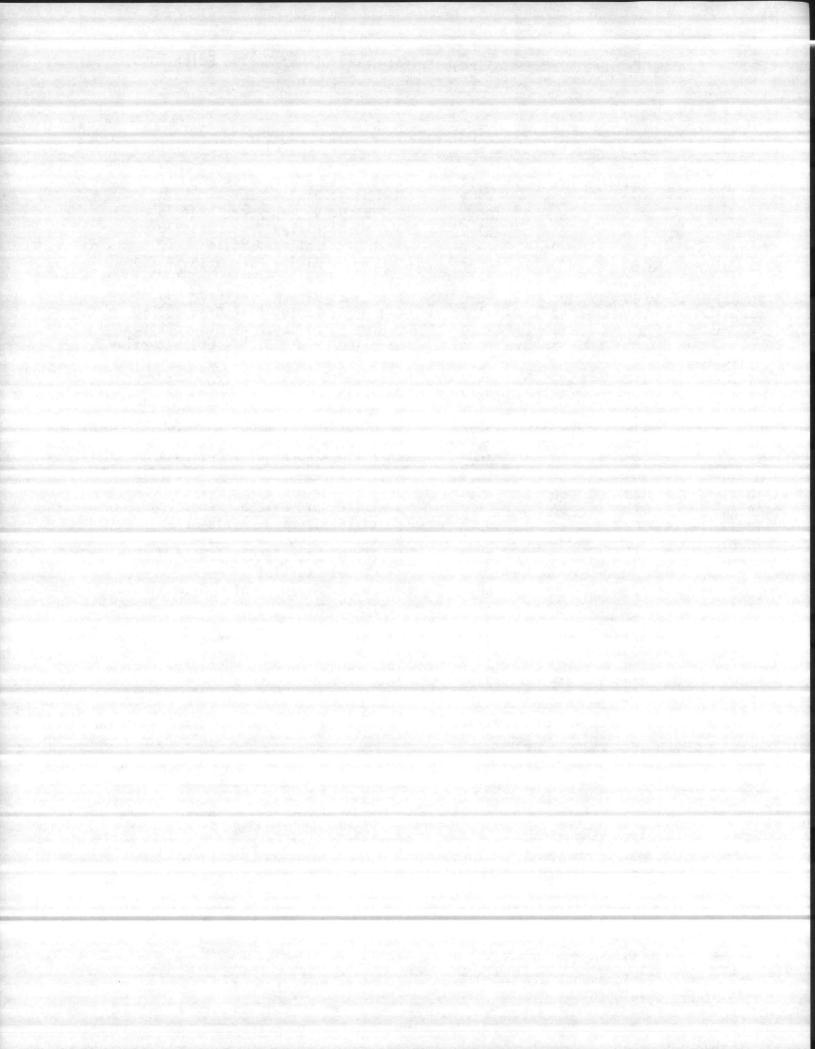


TABLE V
Ground Survey Numbers

Date	Crawls No Nest	Crawls/Nest	Total Crawls	- Y
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	
5-17-80	and the second s	2	2	
5-19-80			2	
6-20-80			2	
5-21-80	and the state of t		2	
6-22-80		2	2	
5-25-80		1		
5-25-80	3	1	1 2	
5-27-80	2 1		2	
5-27-80	1	1		
6-30-80	1	2	2	
7-1-80	<b>.</b>	<b>.</b>	1	
7-1-80	1			
7-3-80	2	1	3	
7-4-80	and the second s	3	3	
7-5-80		1	1	
7-6-80	1	2	3	
7-7-80		i	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				
7-14-80	5	2	7	
7-15-80	3	1	4	
7-16-80	to take the second of	3	3	
7-17-80	3	1	4	
7-18-80	1	1	2	
7-19-80	1	1	2	
7-19-80				
7-21-80	3	1	4	
		1	1	
7-23-80		2	2	
7-24-80				
7-25-80		a de la	1	
7-26-80	2		2	
7-27-80	5	i eta matematika eta kuntua eta 1911. Militaria 1911 kilonea 1911. Antzia eta 1911ako eta eta 1911ako eta	5	
7-28-80		2	2	
7-30-80		1		

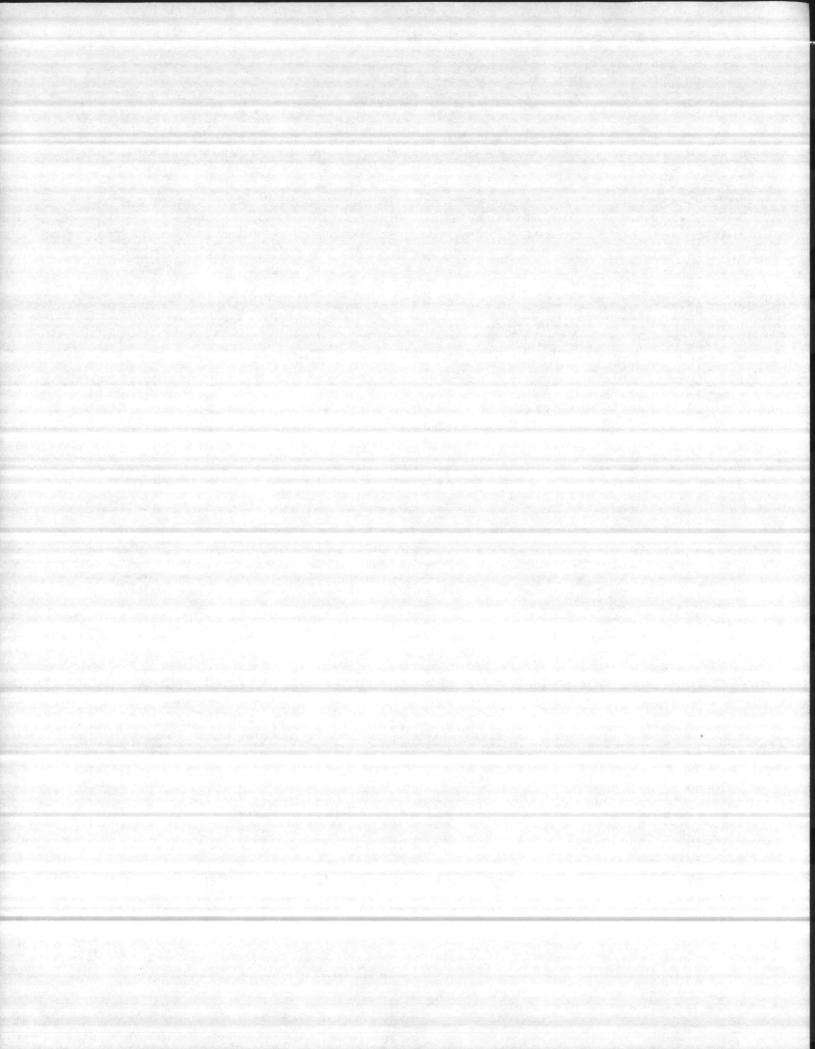
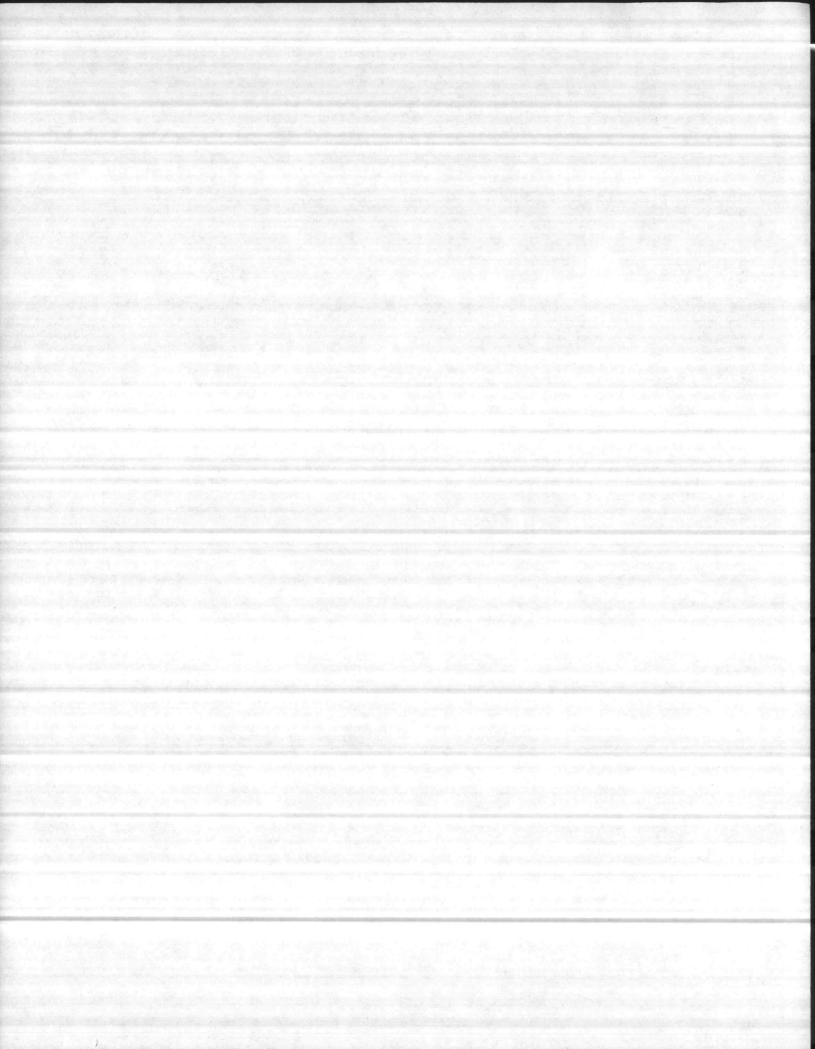


TABLE V Cont'd
Ground Survey Numbers

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	and the state of t		1	
8-10-80		2	2	
8-12-80		1	1	
8-14-80	<b>1</b>	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 (3 of which were green)

Dat	te	Nu Nu	ımber ·		
Lai	in	Lain	Hatched	% Hatch	Locality
Lai 20 J 22 J 29 J 10 J 17 J 21 J 28 J 28 J 2 A 1 A 2 A 3 A	lune lune lune lune luly luly luly luly luly luly luly lul	Lain 54 121 101 117 119 120 166 96 128 101 157 75 114 114 68	Hatched  24 82 87 26* 0 43** 1 94 52 11 32 68 39 61 12	44.4 68.1 86.1 22.2 0.0 26.7 .006 98.0 40.6 10.9 20.4 90.7 34.2 53.5 17.7	O.15 mi S. Risley Pier O.6 mi S. Risley Pier 2.7 mi N. Risley Pier Sheet 16 1.0 mi S. Risley Pier Sheet 16 Nest O48 - all infertile O.8 mi S. Risley Pier Grid 843254 green turtles O.8 mi S. Risley Pier Grid 892255 O.4 mi S. Risley Pier Grid 897258 O.8 mi S. Risley Pier Grid 897258 O.8 mi S. Risley Pier Grid 892255 Nest 100 Grid 916275 - green turtles Nest 099 Grid 894257 Nest 098 Grid 917275 Grid 933276 Grid 897258
4 Ai 5 Ai 8 Ai 10 Ai 10 Ai 12 Ai 14 Ai 17 Ai	ug ug ug ug ug ug	179 132 82 103 118 71 82 110 145	63 1 50 99 56 65 76 54 62	35.2 0.75 60.9 96.1 46.6 91.4 92.7 49.1	Grid 952298 - Tag 634 Nest 108 - Tag 637 Nest 110 renest 661 - Grid 932286 Nest 112 renest 640 - Grid 882245 Nest 114 Grid 922279, 1.7 mi N. Risley Pier Nest 115 Grid 871238, renest 645 Nest 116 2.1 mi N. Risley Pier - Grid 928284 Nest 118 retag 639 1.53 Nest 119 Grid 925281, 1.9 mi N. Risley Pier
20 At 26 At	ug	73 98 2,844 2,426 418	38 56 1,252 1,157 95	52.1 57.2 44.0 47.7 22.7	green turtles 3.4 mi N. Risley Pier - Grid 945295, Tag 667 Camp Lejeune  Total Green and Loggerhead Total Loggerhead Total Green

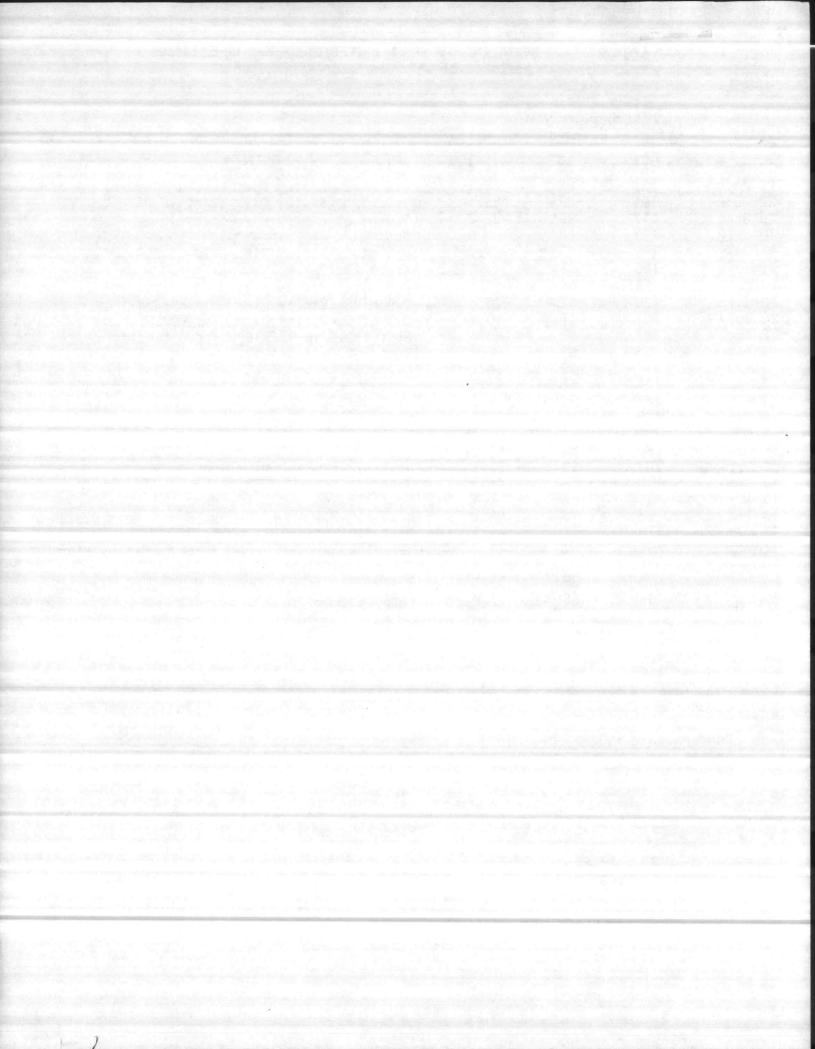
Total Released - 1,581 "Loggerhead - 1,329 84.1%

Green 89 93.8%

### 1979 Camp Lejeune Data - 21 Nests (all loggerheads)

Total Eggs Lain	Hatched	%_	Released	9/10
2,572	1,378	53.6	1,357	98.5
% Hatch Ranged.	0 8-99 2			

<sup>\*67</sup> others developed but did not hatch. \*\*44 others developed but did not hatch.



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

CHARLES D. PETERSON Supervisor, Wildlife Management DR. FRANK B. SCHWARTZ
Advisor
Institute of Marine Science
Morehead City, North Carolina

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

Tagging Adult Turtles

Collection of Nesting Data

Insitu Weather Observations

Aerial Surveys

Nesting and Hatching Success

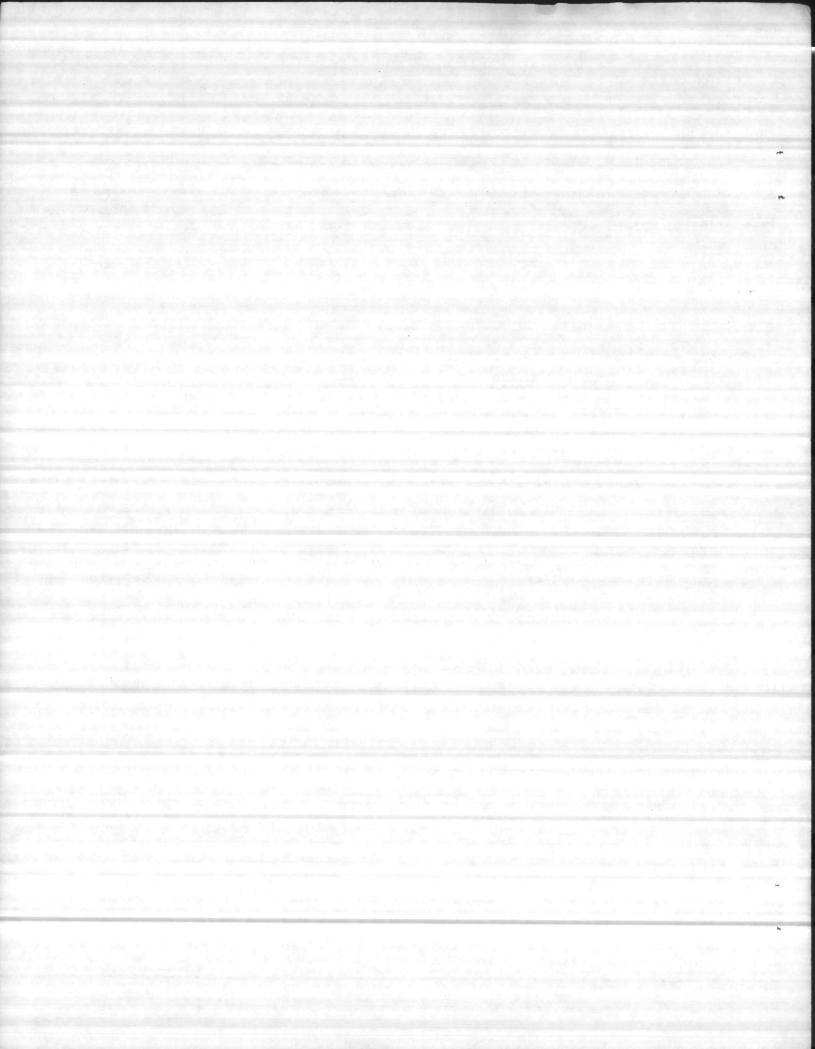
Occasional Hatchling Tagging

Stranding Reports on Dead Turtles

The University of North Carolina Institute of Marine 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.

indicative



#### RESULTS

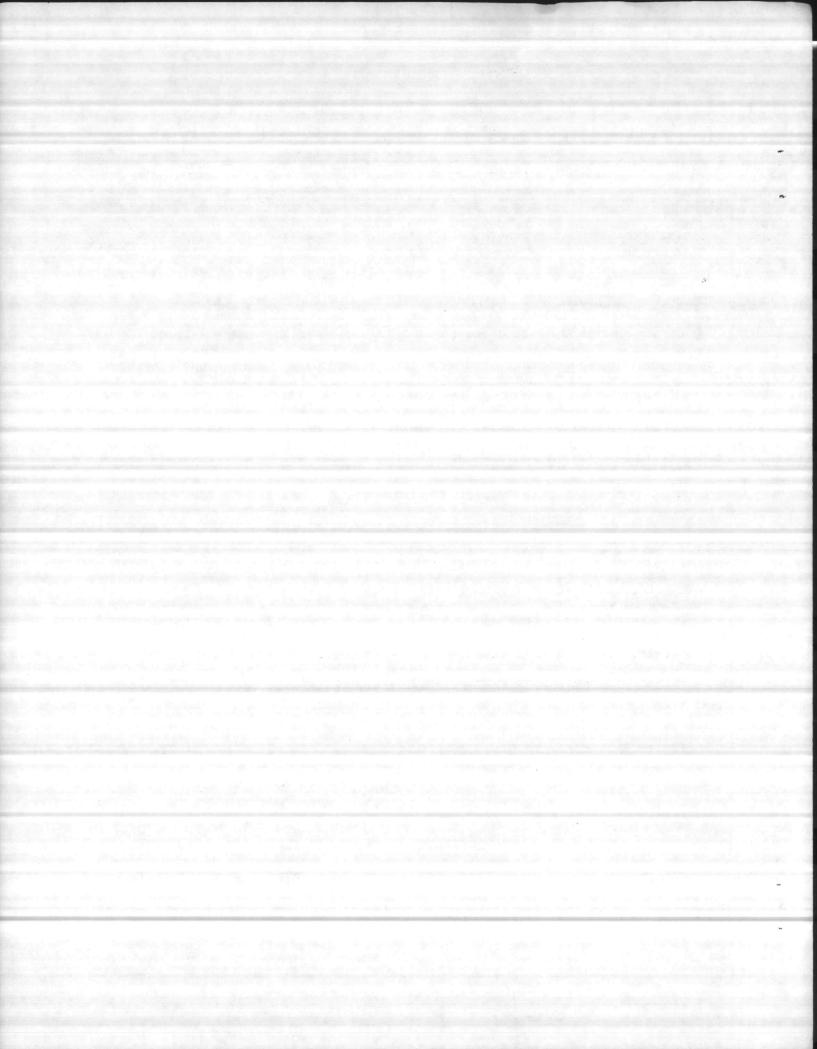
The nesting season for 1980 began with the first nest on 30 May 1980 and ended with the last nest on 25 August 1980. There were a total of 125 crawls to nest on Onslow Beach of which 65 were successful. This compares closely to the data from the 1979 nesting season where 138 crawls and 63 successful 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. NCOOO1 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

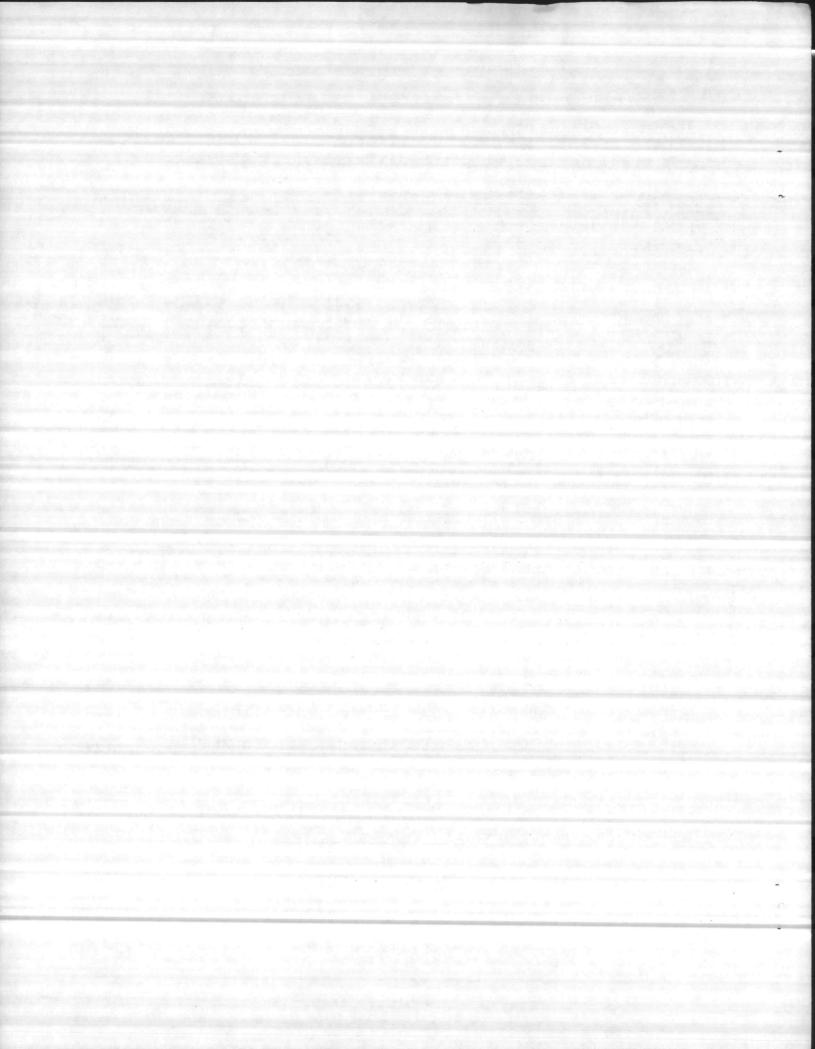


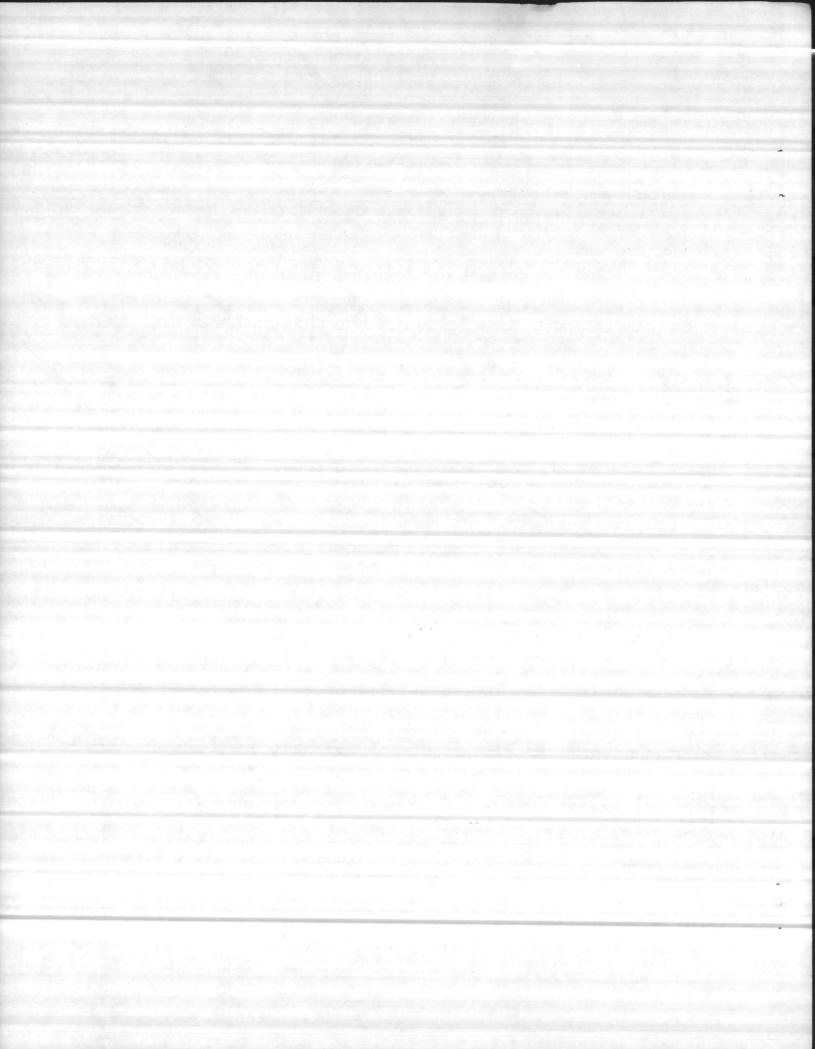
year's success rate of 67.96%. This overall success rate is better than the 1979 season success rate which was 57%.

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 Peach 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).





KEY
P Nests
False Crawls
Turtles Sighted Off Coast

P TO L B 9791 9991 9 99 nlet Bear Inlet Brown's Island Brown Inlet Onslow Beach

New River Inlet

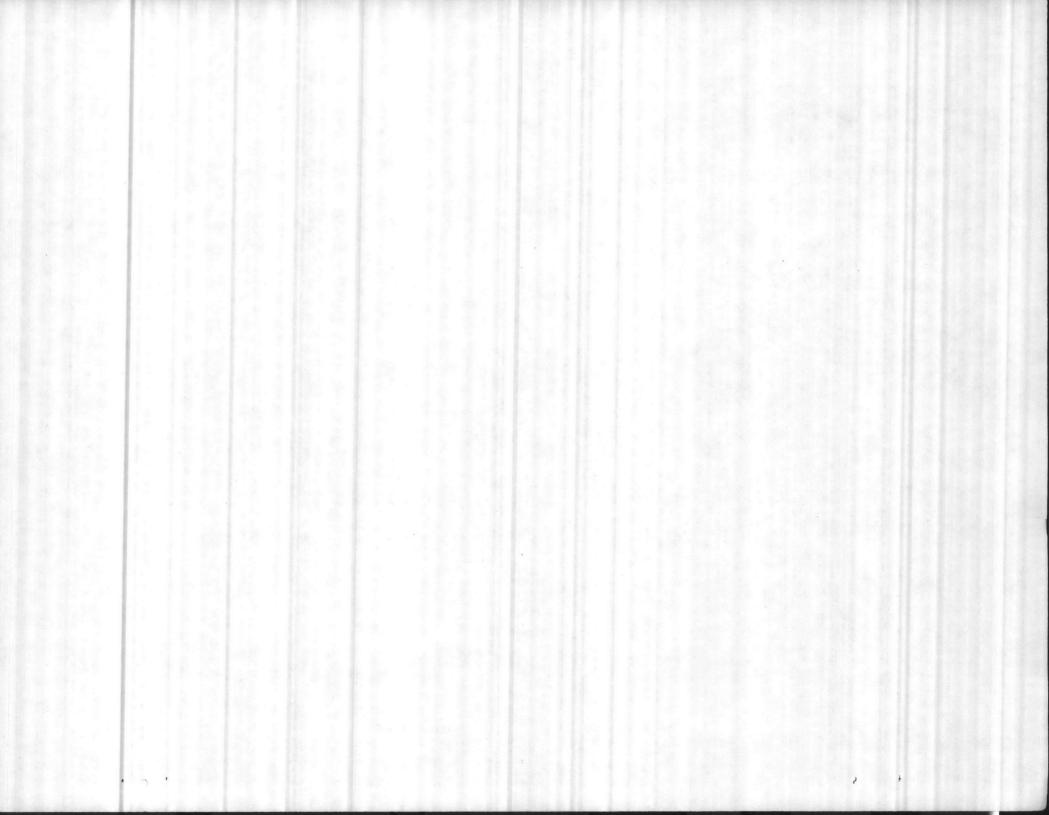


TABLE I
CRAWL INFORMATION IN RELATION TO MOON AND TIDE CYCLES AND WEATHER CONDITIONS
(Nights handled as a whole not broken at midnight)

DATE Night of	Moon Rise % Illumin	Time of Hi Tide	Time Crawl W/O nest	Time Crawl W/ nest	Total	Weather	Tem	p Air
5-30-80	(M. N	_	P. Later Brown	1	1	Clear	20.5°C	
5-31-80					0			
6-01-80	2151-95%	2130			0	10 m		
6-02-80	2241-90%	2216		1	1	Fair Sctr	<sup>1</sup> 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		4	0		1	
6-06-80	0125-51%	0207			0			
6-07-80	0203-40%	0311		14.	0			
6-08-80	0242-29%	0412			0			
6-09-80	0323–19%	0512	1		1			
6-10-80	0407-11%	0607			0	)	69 - 1945 - 64	
6-11-80	0455–05%	1835 0701	1	2	3	Fair Partly Cloudy	24.9°C	-
6-12-80	0547-01%	1926 0752			0		lingt	
6-13-80		2015	1		1			
6-14-80	0642-02%	2012	2		2			and the
6-15-80	0742-06%	2147			0			
6-16-80	0837-11%	2231		0.1.0.0	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

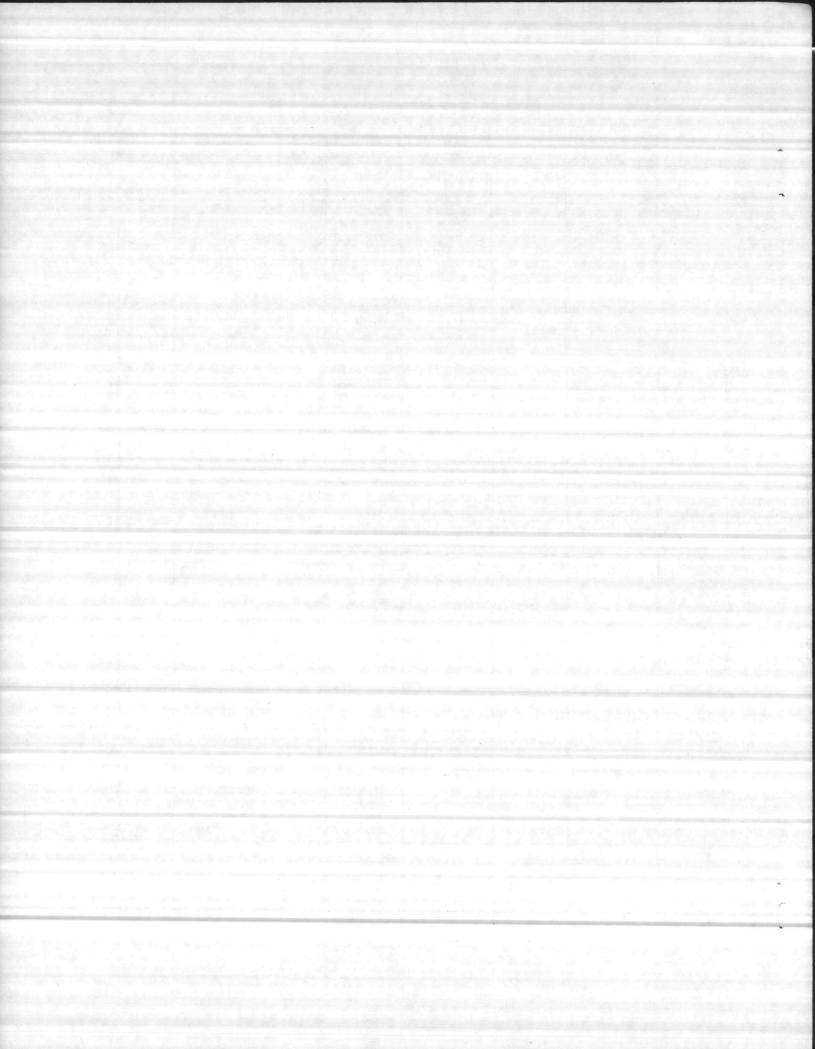


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CRAWL INFORMATION IN RELATION TO MOON AND TIDE CYCLES AND WEATHER CONDITIONS
(Nights handled as a whole, not broken at midnight.)

DAMH			Time	Time	a de la color		Tem	D
DATE Night of	Moon Rise % Illumin	Time of Hi Tide	Crawl W/o nest	Crawl W/ nest	Total	Weather	н <sub>2</sub> 0	Air
6-25-80	1655-88%	0555	0030	2300	3	Partly Cloudy	24°C	23°C
0-23-60	1033-00%	1819	0200	2300	3	Cloudy	24 6	23 6
6-26-80	1753-94%	0638			0	Cloudy	24°C	23.5°C
	Ful1	1901		Services		Fair &		
6-27-80	1850-98%	0723	2200	2245	2	Clear	24°C	24°C
						Fair &		
6-28-80	1945-100%	1943			0	Clear	24°C	26°C
				2298 0100		Fair &	0	0
6-29-80	2037–99%	2028		0100	3	Cloudy	25°C	26°C
6-30-80	2125 079	211/	2445		30 (34	Fair &	0,00	00 -0
0-30-60	2125-97%	2114	2115		1	Cloudy	24°C	22.5°C
7-1-80	2209-92%	2201	0030		2	Fair & Clear	24°C	24°C
, -1-00	2207-72/6	2201	1 0030		2	Fair &	24 6	24 0
7-2-80	2249-85%	2251	0215		1		26°C	27°C
	22 17 05%		0215			Clear Thunderstm	20 0	2,0
7-3-80	2328-75%	2346	2245	2230	2	Clearing	24.5°C	23°C
						Cloudy, Occ.		
7-4-80	0005-65%	0043		2300 2300 2300	3	Showers	24.5°C	24°C
						Fair &		
7-5-80	0043-54%	0148		2400	1	Clear	26°C	26°C
				2310	-	Fair & Ptly	0	
7–6–80	0122-42%	0253	2345	2310 2330	3	Cloudy	26°C	26°C
7 7 00	0000 048	0056	0200	00/0		Fair &	0, -0	0.00
7–7–80	0203-31%	0356	0230	2340	3	Clear	24.5°C	26°C
7-8-80	0248-27%	0457		0200	1	Fair & Cloudy	26°C	26°C
/-0-00	0240-27%	0437		0200	•	ThundStm	20 0	1 20 0
		1820	0015 0115	Tuesday		2200		
7-10-80	0431-6%	0645	0030 0335	2345	5	Clearing240	26°C	23°C
		1910				Fair &		
7-11-80	0527-2%	0734	2340	0200	2	Clear	26.5°C	26°C
		grander and the second			alea in the	Fair &		
7-12-80	0624-0%	1957			0	Clear	26°C	27°C
			0140 0115			Fair & Ptly	0	0
7–13–80	- 1%	2038	0140	0250	4	Cloudy	26.5°C	24.5°C
7 1/ 00	0722 029	2120	2320	2315		Fair &	000	2500
7–14–80	0722-03%	2120	2310 2340 2340	0040	4	Clear	26°C	25°C
7-15-80	0819-08%	2201	2340 2340	0330	4	Fair & Clear	25.5°C	25.5°C
,-13-00	0017-00%	2201	0215		4	Fair &	23.3 0	23.30
7-16-80	0914-14%	2242	0315	2145	5	Clear	26°C	26°C
	- 1/0		2240			Fair & In-		1 - 0
7-17-80	1009-21%	2323	0400	0245	3	crsg Clouds	27.5°C	26°
		and the state of				Fair & Ptly		
7-18-80	1103-29%	0006	Comments when	0305	1	Cloudy	27°C	26°
			2200 0100 0200			Fair &	and the last	
7-19-80	1156-38%	0057	ŎŽŎŎ		3	Clear	27°C	27.5°C

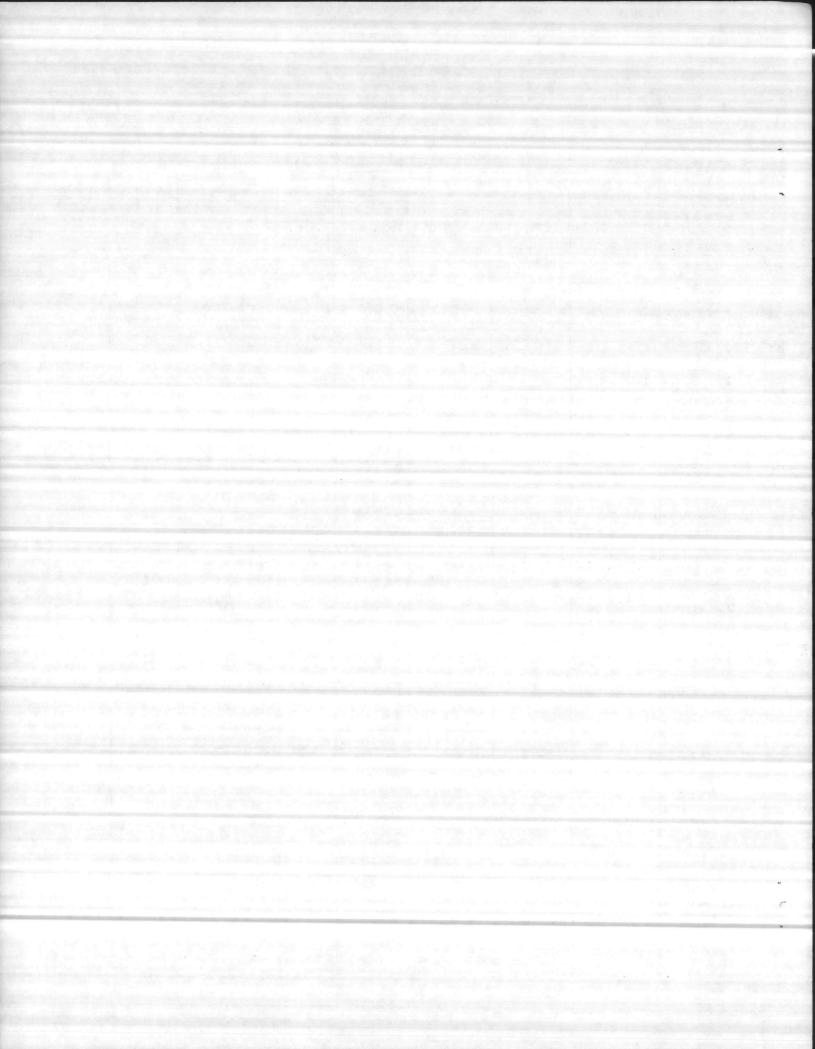


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DATE	Moon Rise	Time of	Time Crawl	Time Crawl			Temp	
Night of	% Illumin	Hi Tide	W/O nest	W/ nest	Total	Weather	н <sub>2</sub> 0	Air
			110	2330	11/2/24	Fair &		
7-20-80	1250-48%	0149	2200	0330	3	Clear	27°C	28.5°C
						Fair & Incrs	Q	
7-21-80	1345-57%	0241			0	Cloudiness	27.5°C	27°C
				0040		Fair &		•
7-22-80	1442-67%	0338		0035	2	Cloudy	27°C	27°C
7-23-80	1539-76%	0431		0030	1	Rainy	25°C	25°C
						Fair &		
7-24-80	1639-84%	0521		2215	1	Cloudy	26°C	26°C
				ar da calenda		Fair &		100 - marin 1
7-25-80	1733-91%	0612	and the second	2215	1	CLoudy	26°C	26.5°C
		1835	2200 1835		22	00-2400 Rainy		
7-26-80	1827-96%	0658	0200			200 Thundstms	26°C	24.5°C
7-20-00	1027-70/9	0030	0200		3 0	200 manascus	20 0	24.3
		1922	2200 2210			Heavy		
7-27-80	1917-99%	0745	2200 2230		4	Rain	200 <u>2</u> 200 20	
	Full			2210				*
7-28-80	2004-100%	2009		2210	2	Cloudy	27°C	26°C
				3 / 10 / 10 / 10 / 10 / 10 / 10 / 10 / 1		Partly Partly		
7-29-80	2047-98%	2054			0	Cloudy	27°C	25°C
						Fair &		
7-30-80	2128-93%	2144		2120	1	Clear	27°C	26°C
						Fair &	0	•
7-31-80	2206-86%	2233	0130		1	Clear	27.5°C	27.5°C
				2200		2000-2200		
0 01 00	2221 779	0000	0245	2200 2200	, .	Thunderstorm	0.700	26.5°C
8-01-80	2224-77%	2328	0315	0245	4	2400 Clearin	g2/ C	26.5 0
8-02-80	2323-67%	0026		2330 8365	3	Fair & Clear	27°C	28°C
0-02-00	2323-07%	0020		0300	3	Glear	27 0	20 0
8-03-80	0003/44%	0129	2	entra de la composición dela composición de la composición de la composición de la composición de la composición dela composición dela composición dela composición de la composición dela composición de la composición dela composición de	2			
						Partly		
8-04-80	0047-33%	0235		2250	1	Cloudy	27°C	28°C
8-05-80	0134-23%	0343		2230	1	Clear	27.5°C	28°C
8-06-80	0224 159	0444				01-	27°C	28°C
8-00-80	0224-15%	0444			0	Clear Partly	27 6	28 G
8-07-80	0318-8%	0540	2400		1	Cloudy	27°C	26.5°C
8-07-80	0310-0%	1806	2300	2245		Fair &	27 0	20.5 0
8-08-80	0414-3%	0630	0200	2315	4	Clear	27°C	27.5°C
0 00 00	0.2.0%	1852		-010		orcar	2. 0	27.0
8-09-80	0511-1%	0715			0			
		1934						
8-10-80	0608-0%	0758		2	2			
		aggindance model former "Morelle all former "Morelle III and I				Fair &		
8-11-80		2013			0	Clear	27°C	27.5°C
					took hetsackin enten		and a second	Control of the Contro
8-12-80	0705-1%	2052		0230	1	Cloudy	27°C	27°C

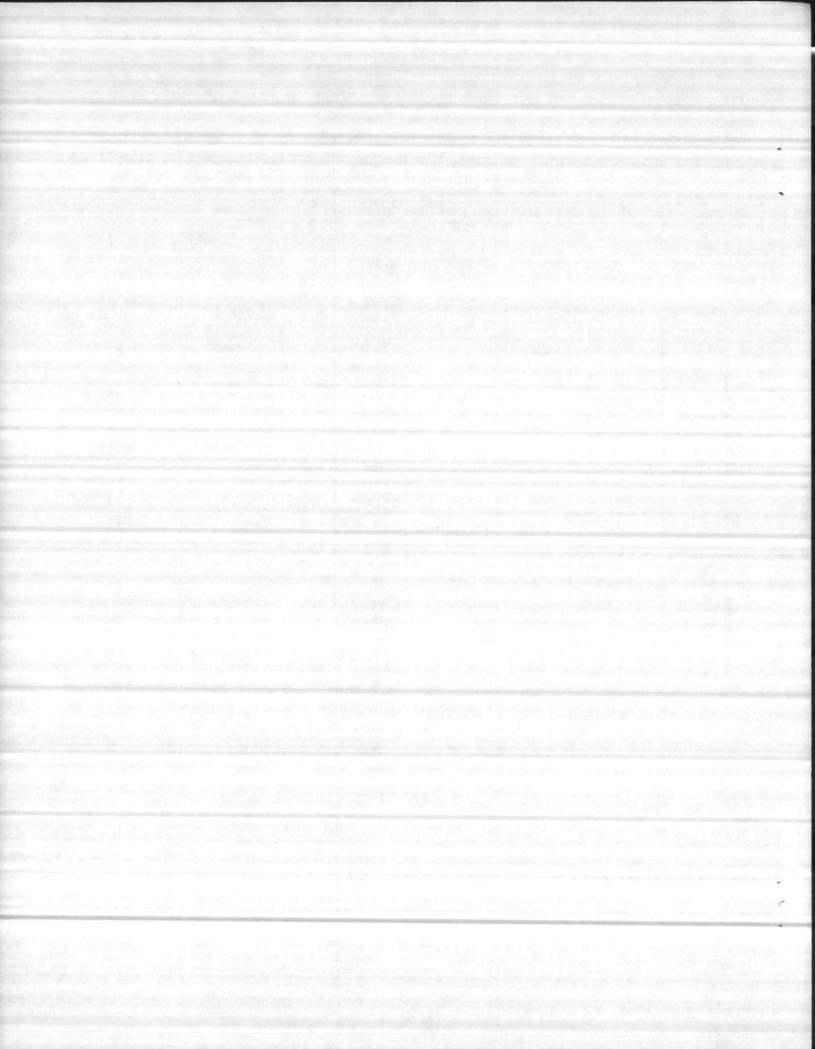
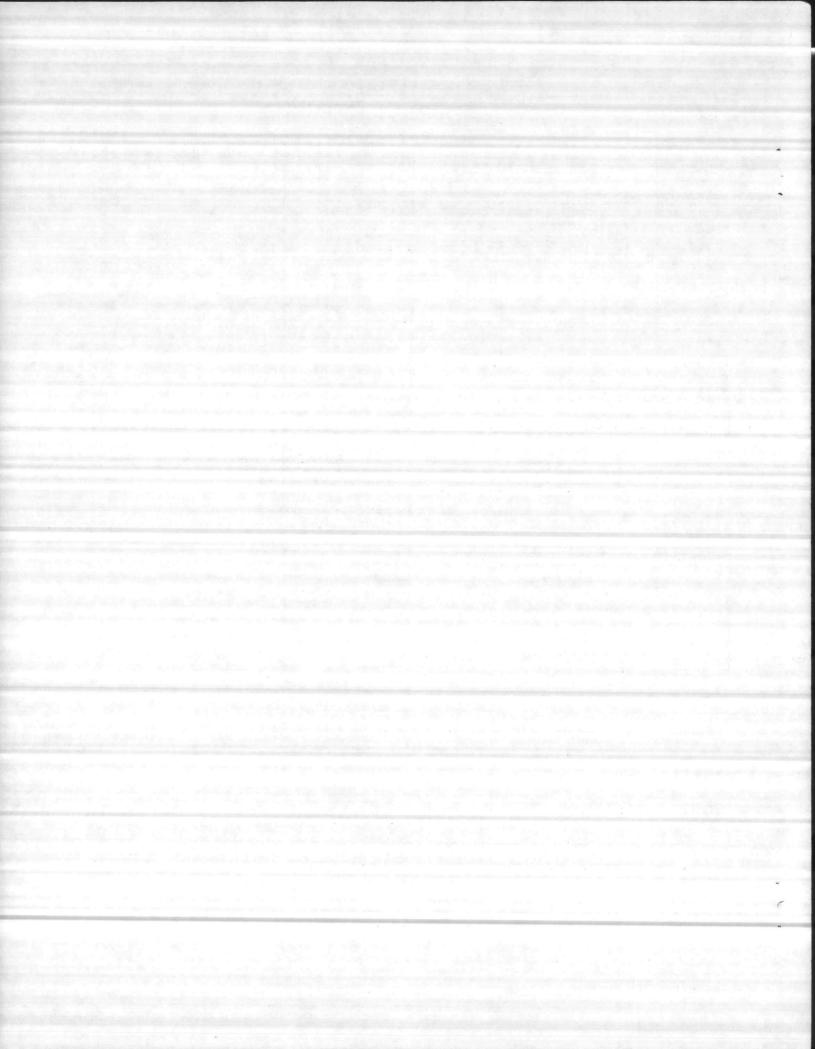


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Date Night of	Moon Rise % Illumin	Time of Hi Tide	Time Crawl W/O nest	Time Crawl W/ nest	Total		Temp H <sub>2</sub> O	Air
8-13-80	0800-5%	2129			0	Fair & Clear Fair &	27°C	28°C
8-14-80	0854-10%	2206	2230	2300	2	Clear &	27°C	28°C
8-15-80	0948-16%	2243			0	Windy	27.5°C	26.5°C
8-16-80	1041-23%	2323		1	1	Cool &		
8-17-80	1135–32%	0010	0245		1	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	1		
8-21-80	1518-70%	0356		and the second of the	0	Fair &		
8-22-80	1613-79%	0258	1		1	Clear	25°C	23°C
8-23-80	1705-87%	0356				Fair &		
8-24-80	1754-94%	0452	0100		1	Clear	23°C	19°C
3-25-80	1839-98%	0543 1721	between 2200-2400	between 2200-2400	2	Fair & Clear	23°C	19°C
3-26-80	1922-100%	0634 1859						
3-27-80	2002-99%	0723 1948						
3-28-80	2042-95%	0812						
3-29-80	2121-88%	2036						
3–30–80	2202-80%	2125				in the state of th		
3-31-80	2245-69%	2216		l a g				



## TABLE II RETURN RECORD OF TAGGED TURTLES

#### 1980 SEA TURTLE INVENTORY

DATES 4/17/80-8/9/80

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	- /- / 0			
6/20/80	655	7/3/80	7/15/80 🛇	7/28/80	8/8/80
Green			Retag 640		0
6/25/80	657*	7/9/80	7/21/80	8/2/80	8/17/80
		Retag 669	Retag 649		
6/26/80	NC0001	7/11/80	7/24/80		
6/27/80\$	648	7/24/80			
6/27/80	658	7/40/00			
6/29/80 6/29/80	650 659	7/12/80			
6/30/80	660	7/14/80 🛇	7/16/80	9/1/00	
0,50,00	000	Retag 672	7710700	8/1/80	AND PROPERTY.
7/1/800	661	7/14/80	7/26/800	8/8/80	
7/3/80	662			Grade Co	
7/6/80	663				
7/6/80⊗	664				
7/7/80	667	8/18/80	8/20/80		
7/8/80 <b>⊗</b> 7/8/80 <b>⊗</b>	665 666				
7/10/80	670	7/23/80			
7/11/800	671	1,723,00	2000		
7/14/80	673				
7/14/800	674				
7/15/80	675				
7/17/80	641				
7/17/800	642	7/18/80			
7/18/80€	647	7/20/80	8/2/80		
7/19/80	645	1,20,00	0,2,00		
7/23/80	646		The second of the second of the second		The second secon
7/25/80	644		San Carlos		
7/30/80	633	0/11/22	ALC: ALC: ALC: ALC: ALC: ALC: ALC: ALC:		
8/1/80	639	8/14/80			
8/3/80 8/4/80	638 634			Action and Company of the Company	te a configuration of the configuration
8/5/80	637				
8/7/80⊗	636	8/12/80			100
8/9/808	635				
is to delicate the second			Control of the Contro		

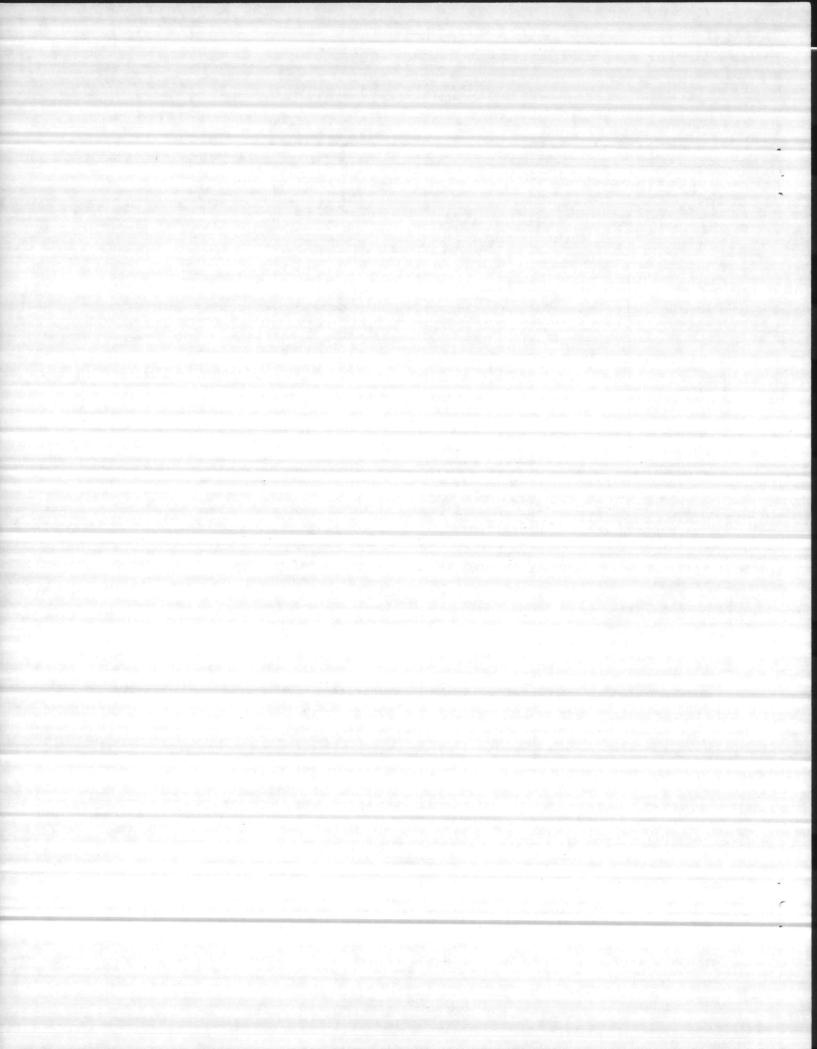
#### Tagged or

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

<sup>2-</sup> Crawl body pit and eggs indicative of Green Turtle but turtle not observed

<sup>1</sup> Turtle observed 5 times; 4 turtles observed 4 times; 3 turtle observed 3 times; 6 turtles observed 2 times; 23 turtles observed 1 time

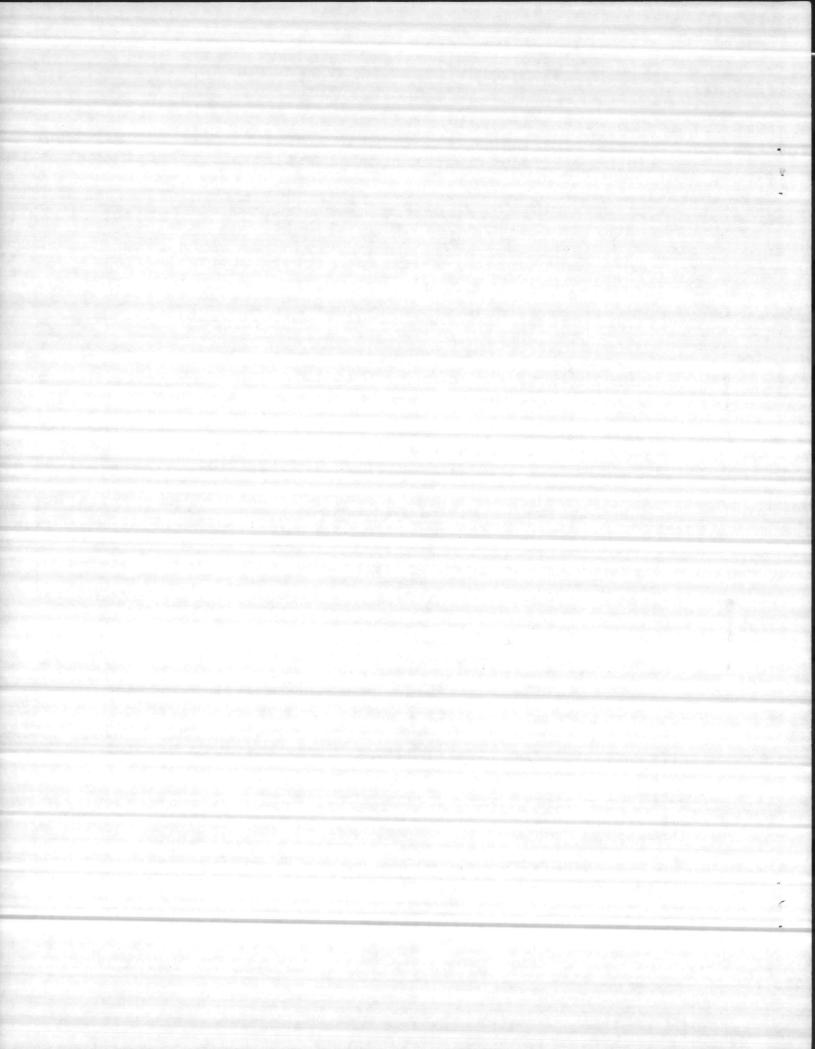
61 sightings of tagged turtles



		fL(	ght:			Al	ERIA	AL SU	IRVE	Y										
		May	30			May	31													
•	N	FC	T	SB	N	FC	Т	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	e 14													
the state of the s	N	FC	Т	SB	N	FC	Т	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												
Dear Island		Ü	U	Ü	U	U	U	3												
		July	1			July	7 2			July	y 11			July	12			Jul	у 2	1
	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
													Ī	Ĭ	Ŭ	-			Ŭ	
		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								
		то	TAL																	
	N	FC	Т	SB																
Onslow Beach	7	9	4	13																
Brown's Island	19	4	4	11																
Bear Island	16	. 5		. 6												. 7				

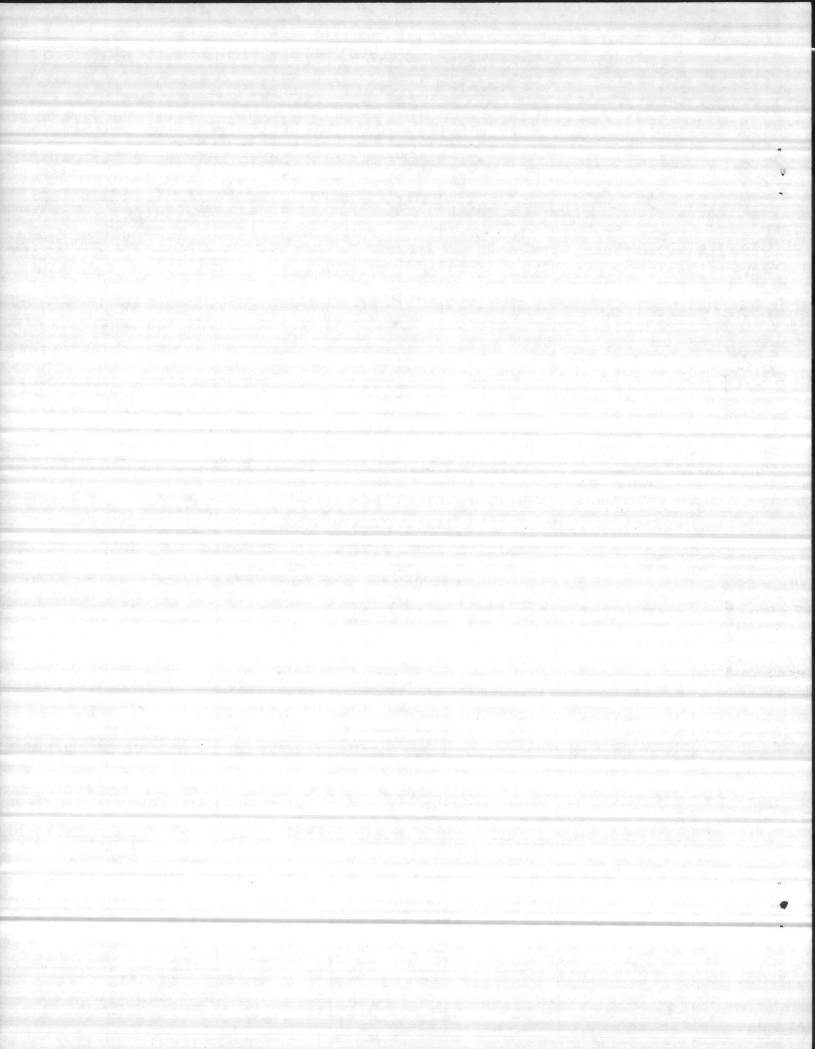
Key N - Fresh Nests
FC - Fresh False Crawls
T - Turtles sighted off coast
SB - Shrimp Boats

42 18 10 30

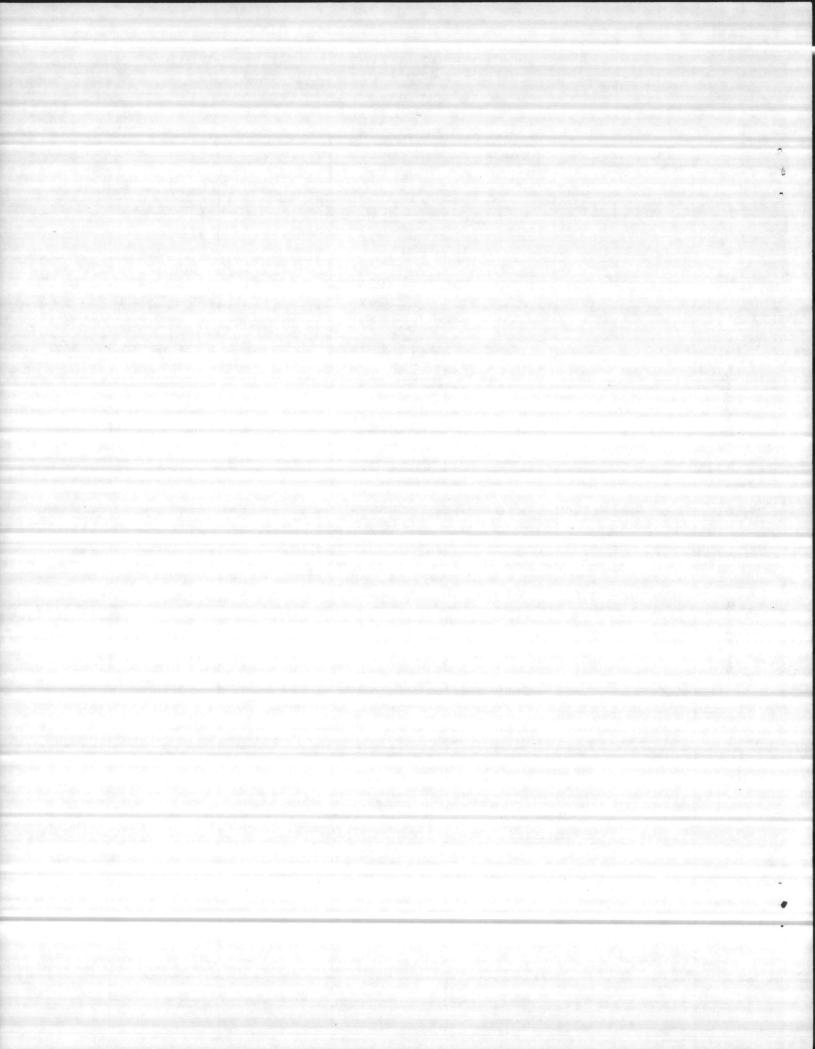


SEA TURTLE INVENTORY
(Hatching Success)
Marine Corps Base
Camp Lejeune, North Carolina

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	94.79
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%

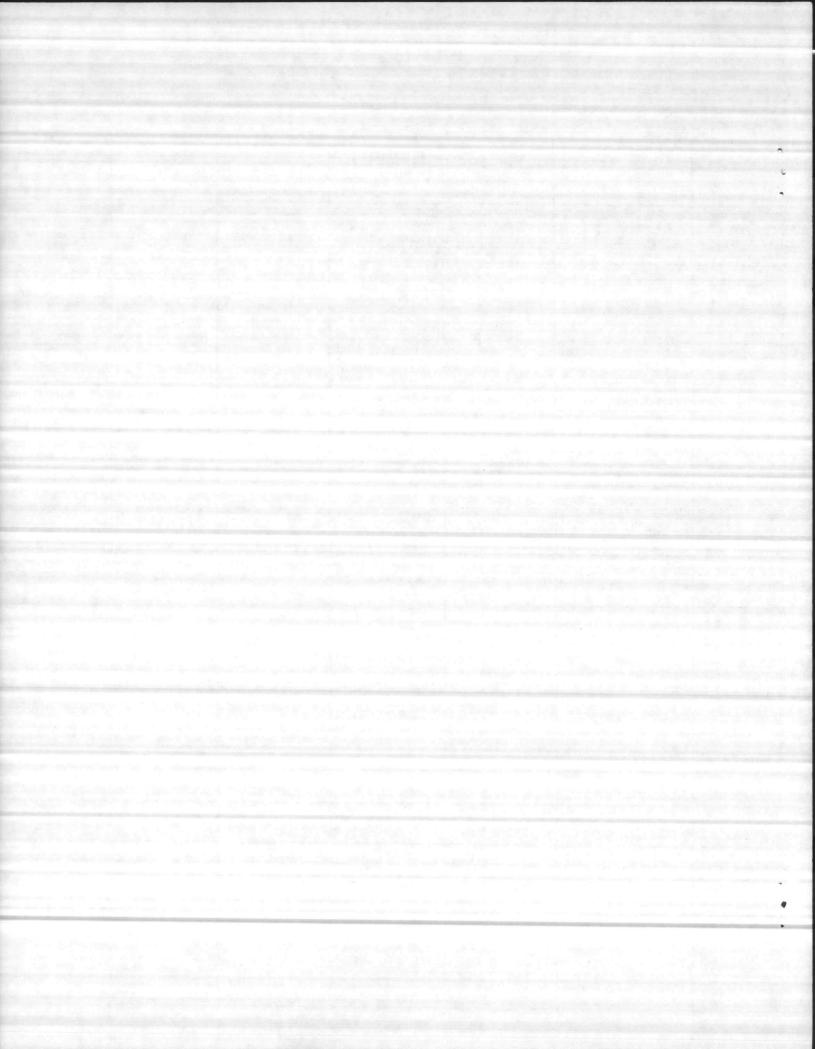


Nêst No.		Incubation Period	Total Eggs	Released Young	Emerged Young	Total Young	Percent of Success
104	IMS	0	1	0	0	0	n.
107	IMS		179				
108	IMS		134				
110	IMS		104				
112	IMS		104				
114	IMS		120				
115	IMS		80				
116	IMS		83		4		
118	IMS		112				
*119	IMS		145				
121	IMS		75				
125	IMS		99				
		To	TALS		6)		
64			7352	See			
26	IMS		2823				
37 (	ОВ		4529				
	iang was						
GREEN	TURTI	Е	819	(11.14% OF	TOTAL)		
-					- 18 Plans Turk Surveyal File So		
							· Year in the
							A.E.



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

Nest No.	Incubation Period	Total Eggs	Released Young	Emerged Young	Total Young	Percent of Success
048 1	IMS	124		al light state of the second		
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 1	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 I	IMS	166				
082 1	IMS	96				
083		134				
084	59	116	4	106	110	94.8%
085	61	114	0	111	111	97.4%
086		89				14.00
094	IMS	132				
095	IMS	102				
096		88	0	74	74	84.1%
098	IMS	114				
- 099	IMS	78				
*100	IMS	157				11.75
102	IMS	114				A SEPTEMBER
103	IMS	78				



Date	Nur	mber		
Lain	Lain	Hatched	% Hatch	<u>Locality</u>
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			

<sup>\*67</sup> others developed but did not hatch. \*\*44 others developed but did not hatch.

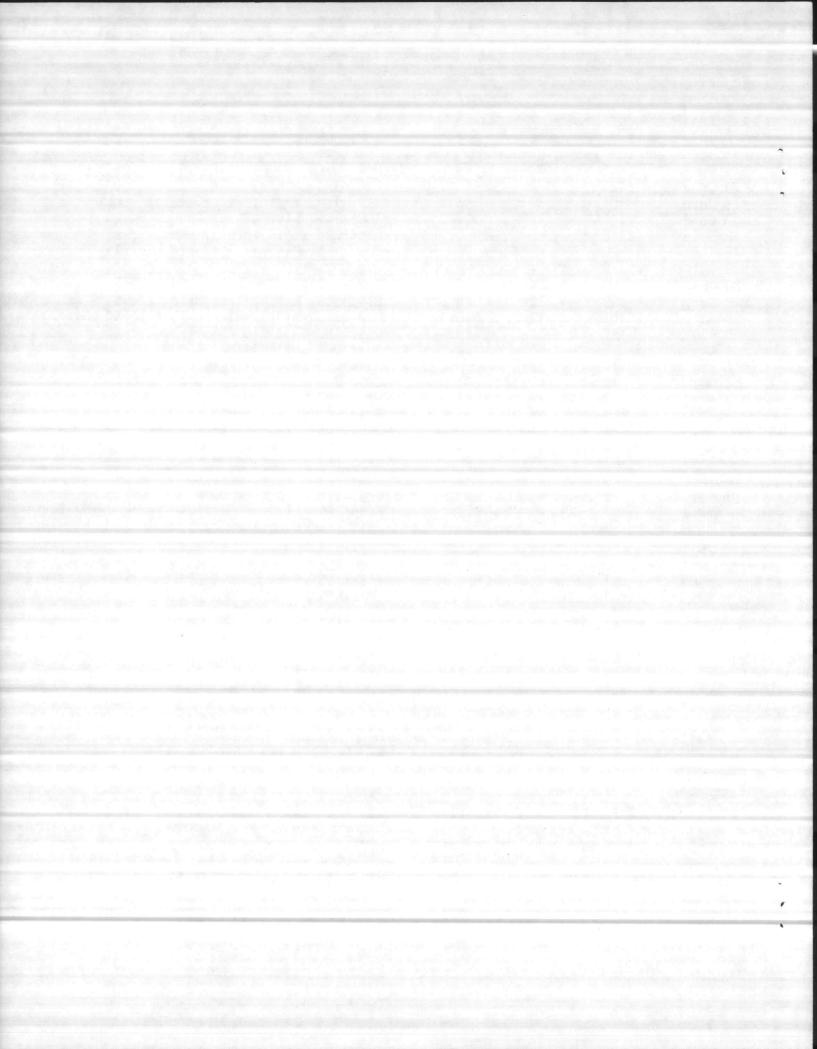


TABLE V
Ground Survey Numbers

Date	Crawls No Nest	Crawls/Nest	Total Crawls	
5-30-80		1		
6-2-80		1.		
6-4-80	1	1	2	4.4
6-9-80	î		2	
6-11-80	- Î	2	1 3	
6-13-80	î		그 교육 중에 대통령이 되었다. 그 이번 경기	
6-14-80	2		1	
6-17-80	<b>-</b>	2	2	
6-19-80	1		2	
6-20-80	1	1	2	
6-21-80	1	1	2	
6-22-80	•	1.	2	
6-25-80		2	2	
6-26-80	3	1	1	
6-27-80	2		2	
6-29-80	1	1	2	
6-30-80		2	2	
7-1-80	1	1	2	
7-1-80	1		1	
7-3-80	2		1	
7-4-80	2	1	3	
7-5-80		3	3	
7-6-80	1	1	1	
7-7-80	1	2	3	
7-8-80	2	1	1	
7-9-80	2		2	
7-10-80	1	1	1	
7-11-80	1 5	1	2	
7-12-80	<b>,</b>	Control of the state of the sta	5	
7-14-80		1	1	
7-15-80	5	2	7	
7-16-80	3	1	4	
		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	
-21-80		1	1	
-23-80		2	2	grander (Extens
-24-80		2	2	
-25-80		1	1	
-26-80	2		2	
-27-80	5		5	
-28-80	t page facilities of the first throught the said of the first	2	2	
-30-80		1 100	1	

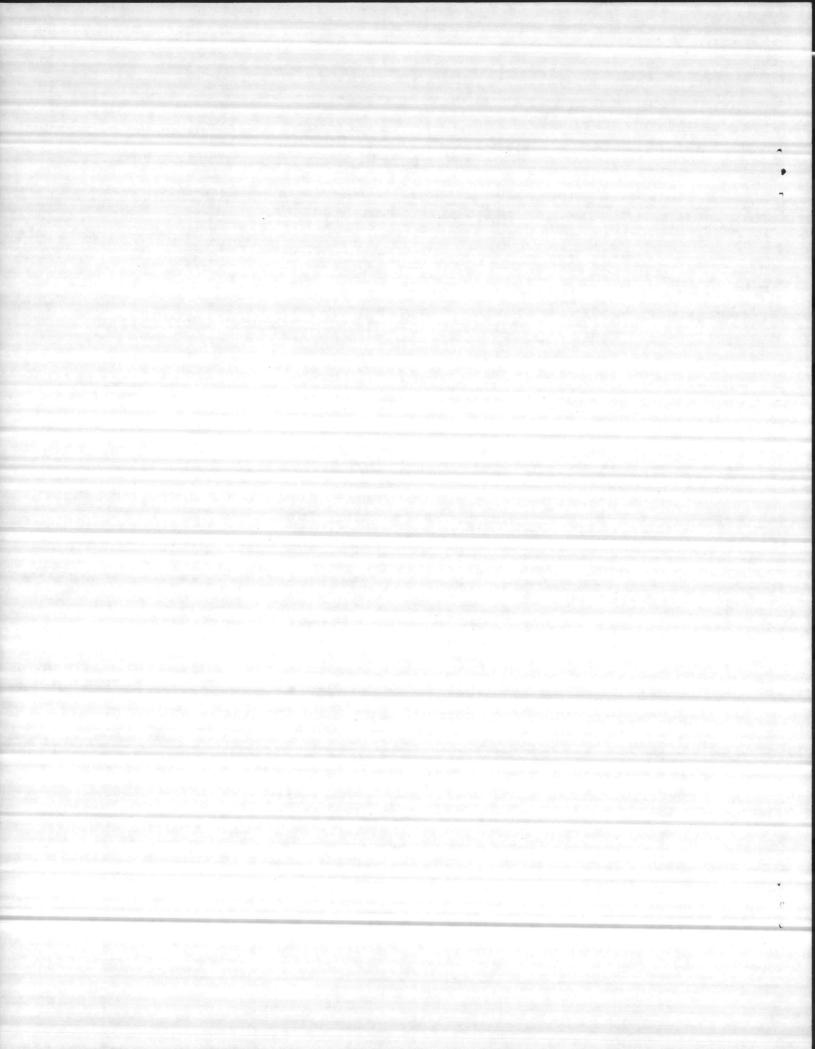
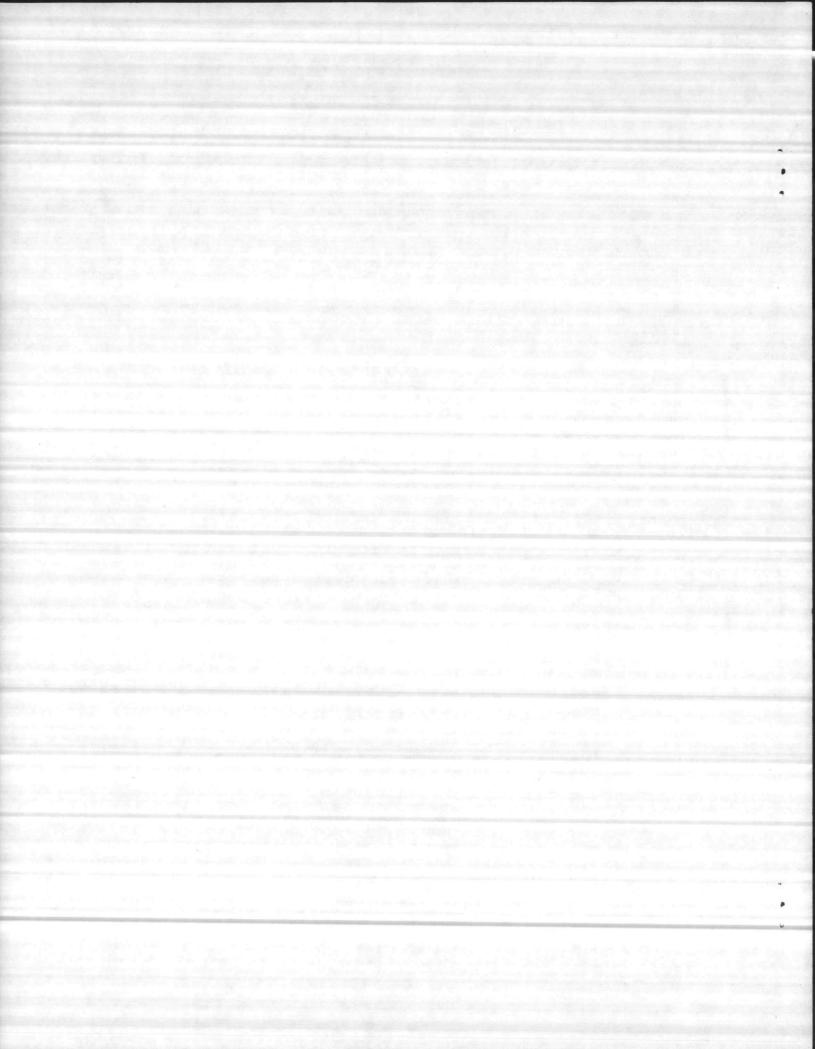


TABLE V Cont'd
Ground Survey Numbers

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		
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			Ō
8-29-80			0
8-30-80			0



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

Date	The state of the s	mber ·	d listab	locality
Lain	Lain	Hatched	% Hatch	<u>Locality</u>
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	Õ	0.0	Nest 048 - all infertile
17 July	120	43**	26.7	0.8 mi S. Risley Pier Grid 843254
21 July	166	i	.006	green turtles
20 July	96	94	98.0	0.8 mi S. Risley Pier Grid 892255
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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	ī	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

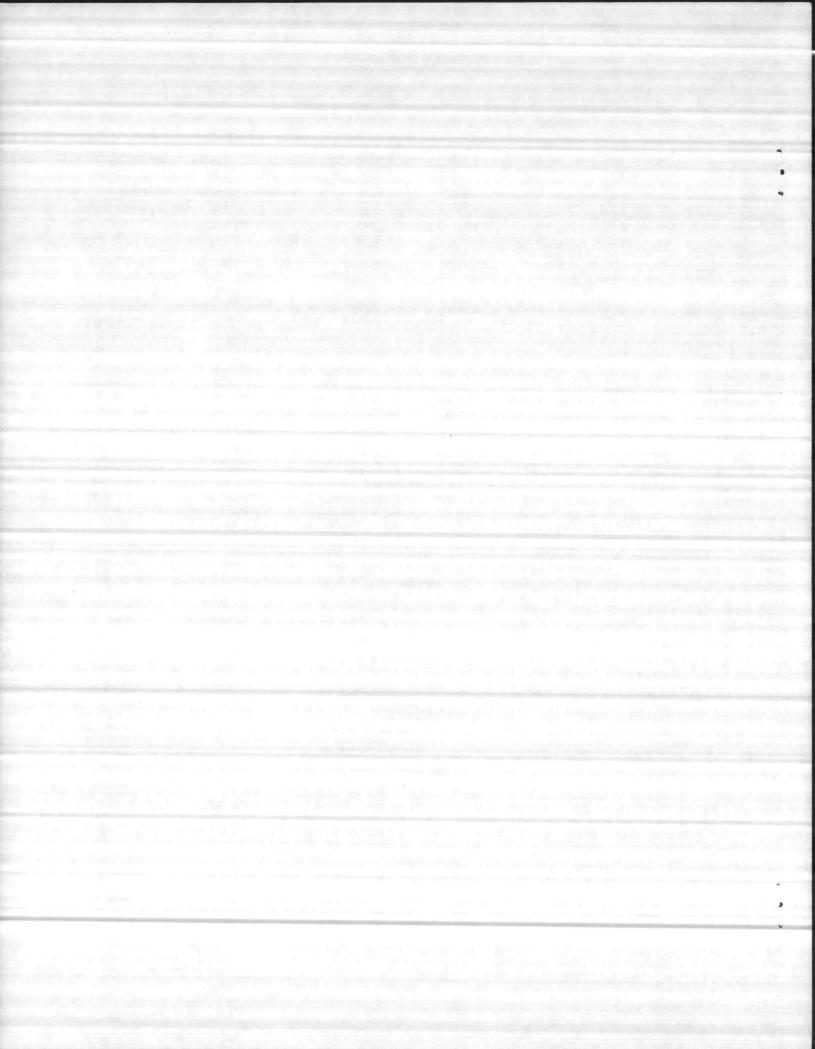
" Loggerhead - 1,329 84.1%

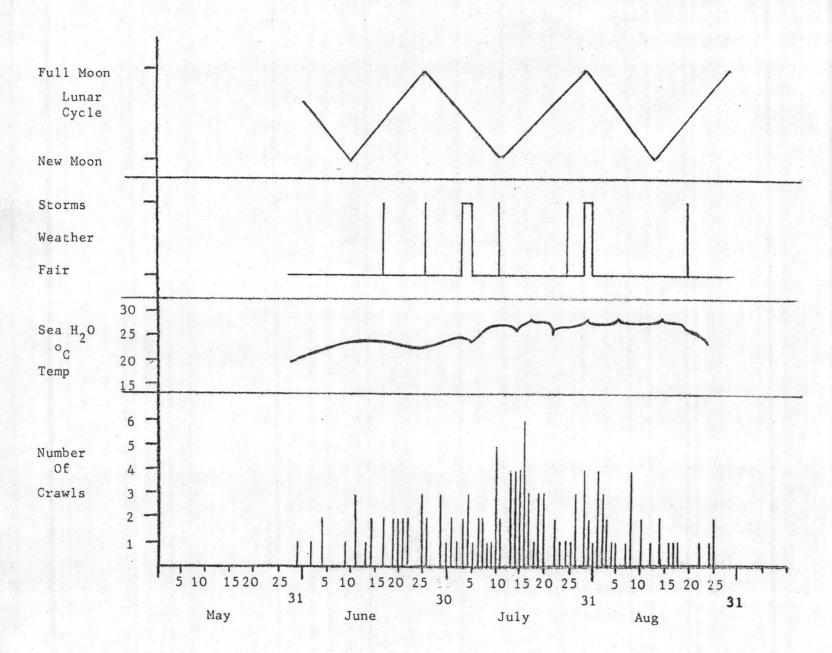
Green - 89 93.8%

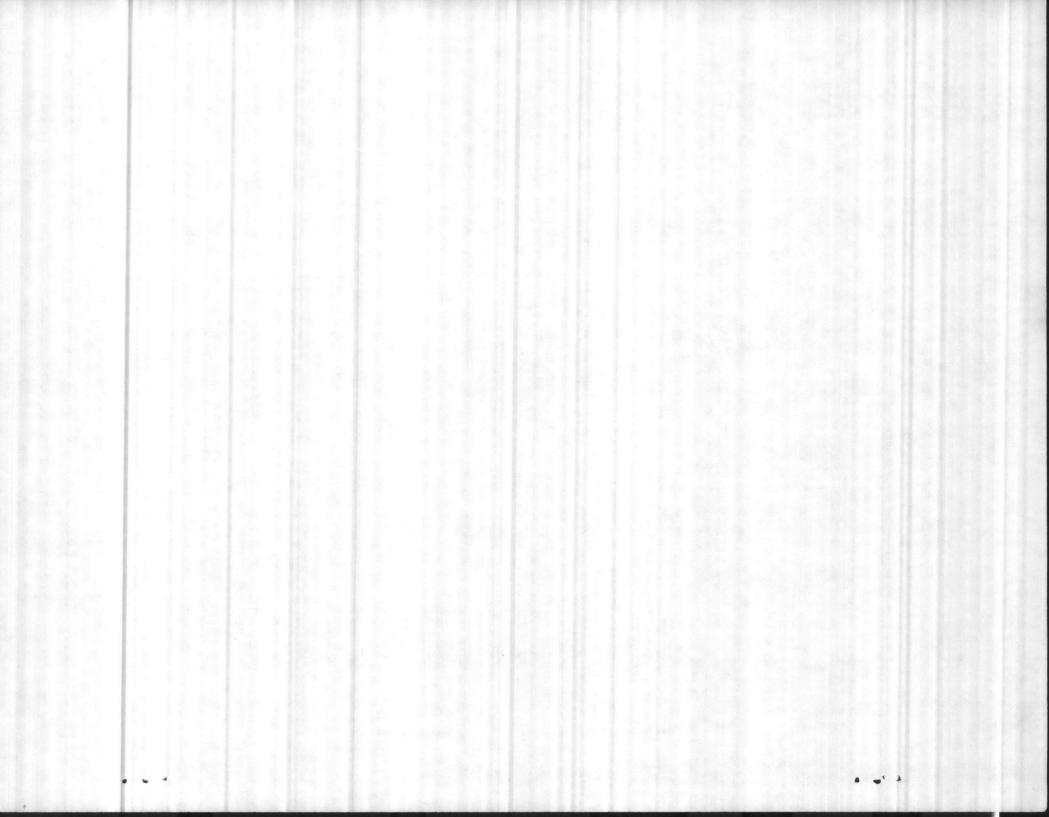
## 1979 Camp Lejeune Data - 21 Nests (all loggerheads)

Total Eggs Lain	Hatched	%	Released	%
2,572	1,378	53.6	1,357	98.5
% Hatch Ranged:	0.8-99.2			

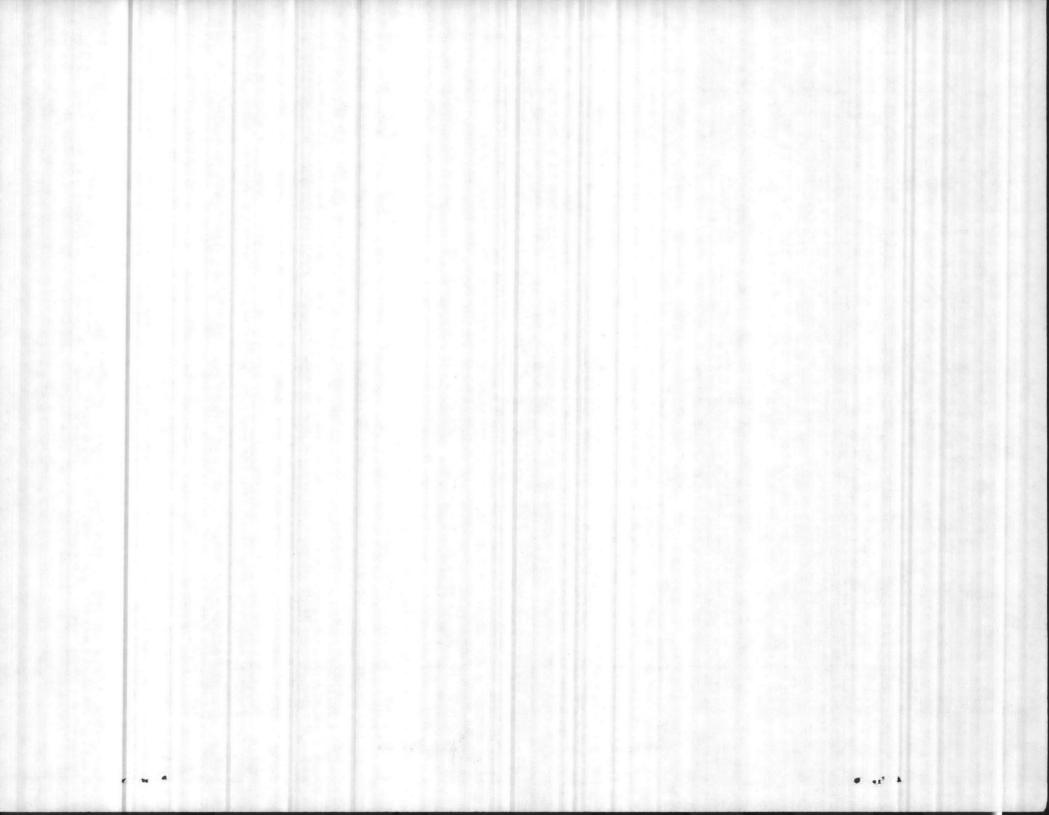
<sup>\*67</sup> others developed but did not hatch. \*\*44 others developed but did not hatch.



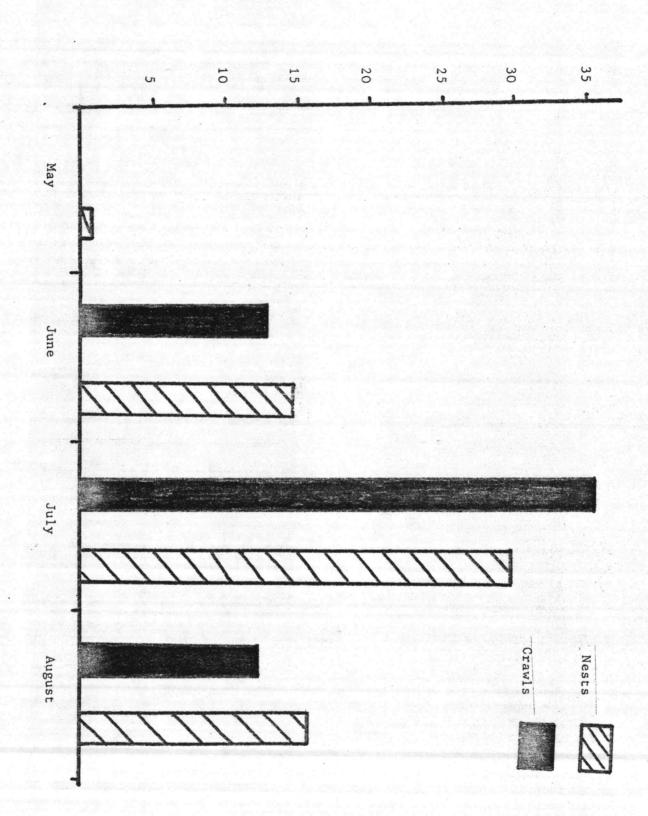


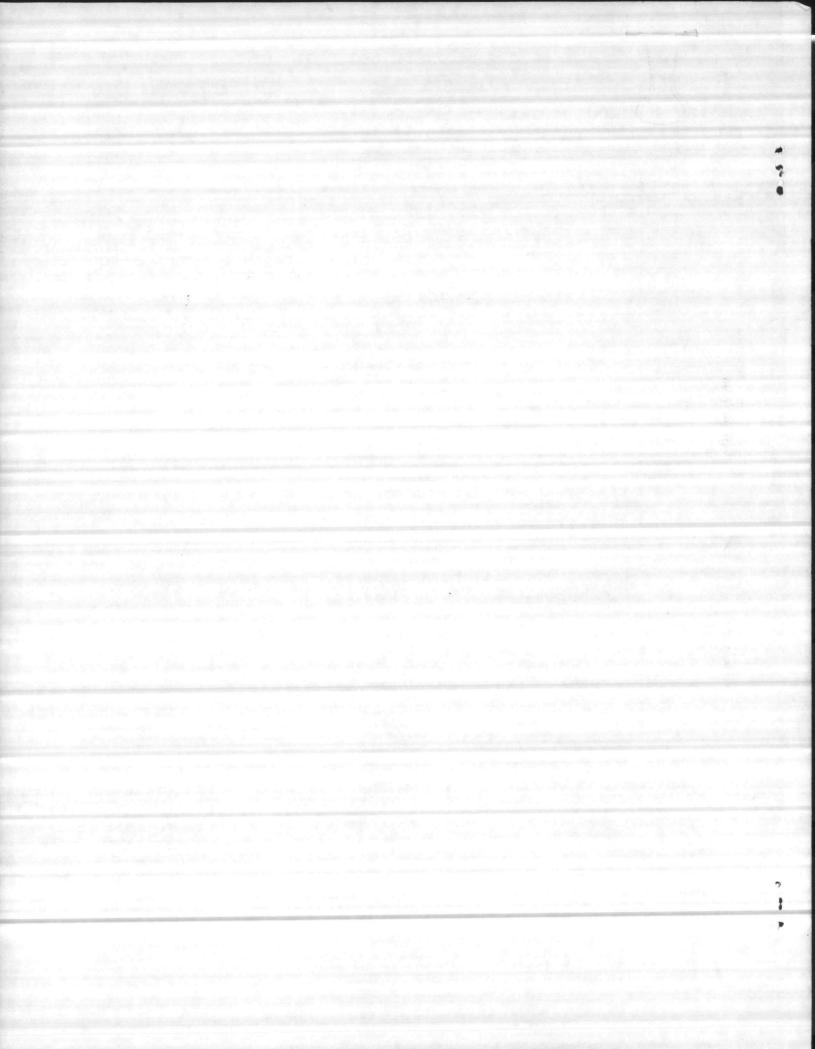


1 % .



GRAPH III





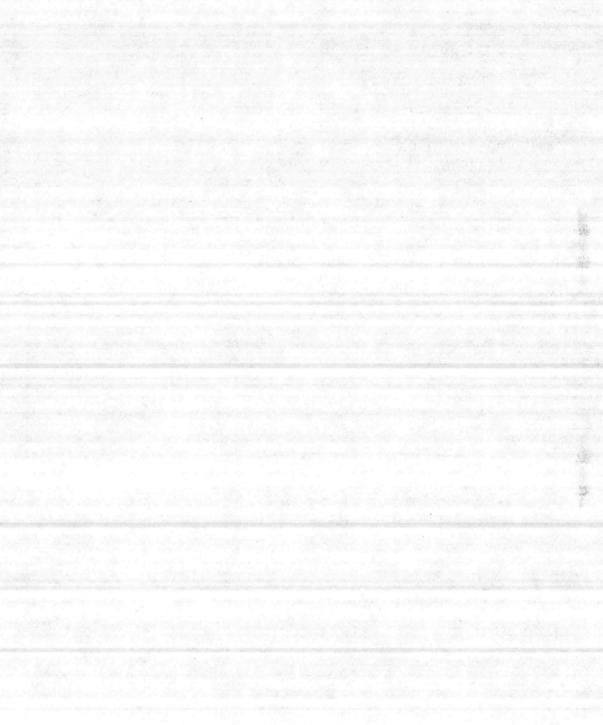
### TABLE III

#### AERIAL SURVEY

		May	30			May	31													
	N	FC	Т	SB	N	FC	Т	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	т	SB	N	FC	Т	SB												
						1														
Onslow Beach	0	1	2	1	0		0	3												
Brown's Island	0	0	0	0	0	0		3												
Bear Island	1	0	0	0	0	0	0	3												
		July	1			July	7 2			July	11			July	12			Ju	Ly 2	1
	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
		A	1			A	11			A	12									
		Aug	1			Aug	11			Aug										
	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	1000 W							
		TO	TAL																	
	N	FC	Т	SB																
Onslow Beach	7	9	4	13																
Brown's Island	19	4	4	11																
Bear Island	16	5	2	6																

Key N - Fresh Nests
FC - Fresh False Crawls
T - Turtles sighed of? Coast
SB - Shrimp Boats

42 18 10 30

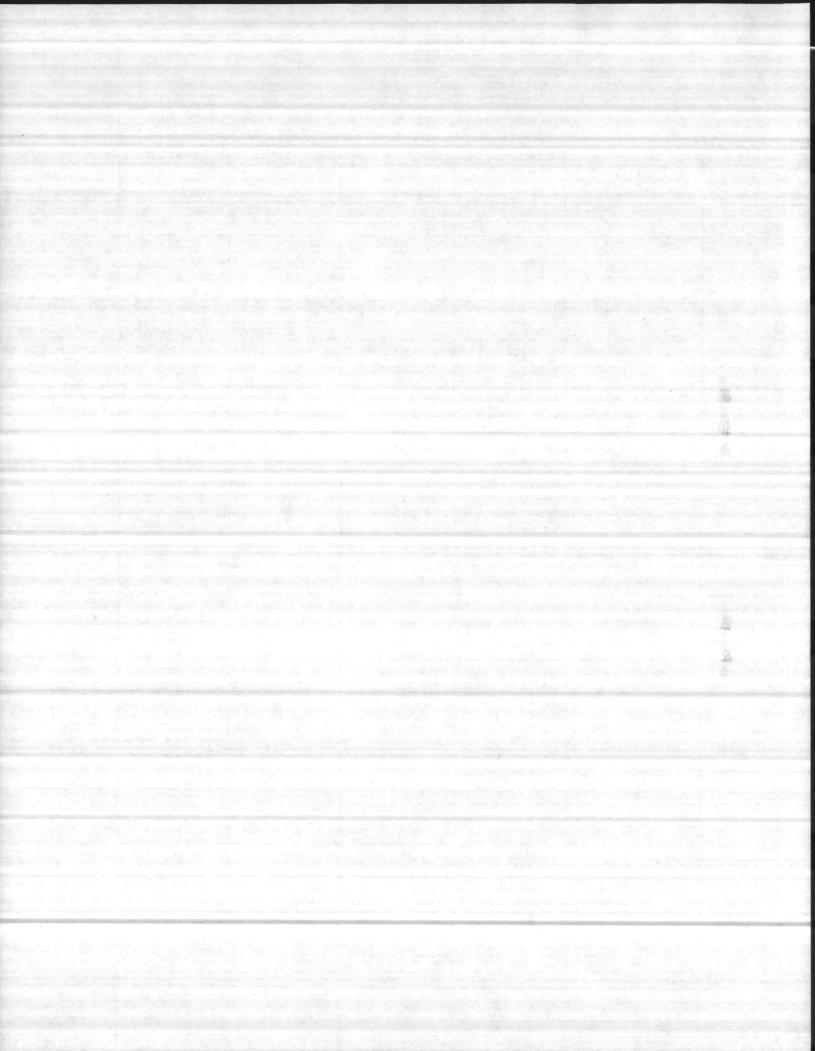


# SEA TURTLE INVENTORY (Hatching Success) Marine Corps Base Camp Lejeune, North Carolina

1980

\*Green Turtle

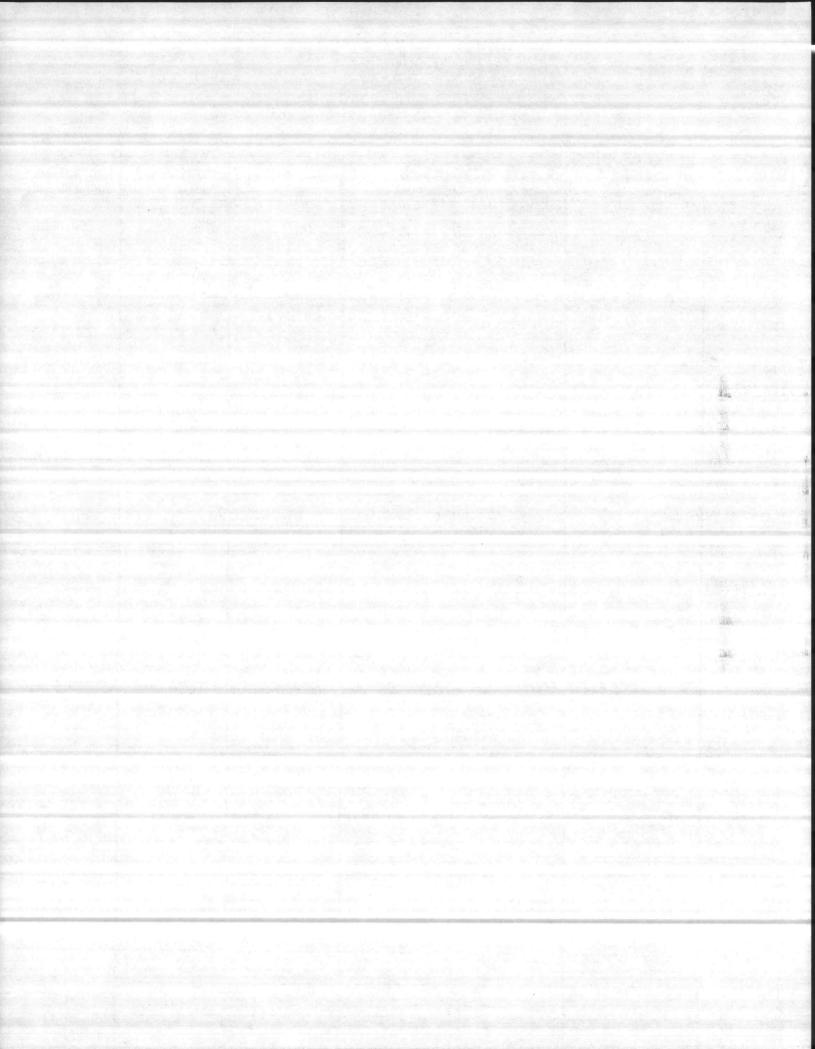
Nest No.		Incubation Period DAYS	Total Eggs	Released Young	Emerged Young	Total Young	Percent of Success
001		65	115	67	39	106	92.2%
002		63	166	158	3	161	97 %
003		63	134	4	69	73	54.5%
006	IMS	69	53	24		24	45.3%
007	02		126	0	0	0	0
012		65	102	81	4	85	83.3%
013		64	175	4	119	123	70.3%
015		63	134	0	128	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	Opposed to	59	116	4	89	93	80.2%
038	Start JT	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

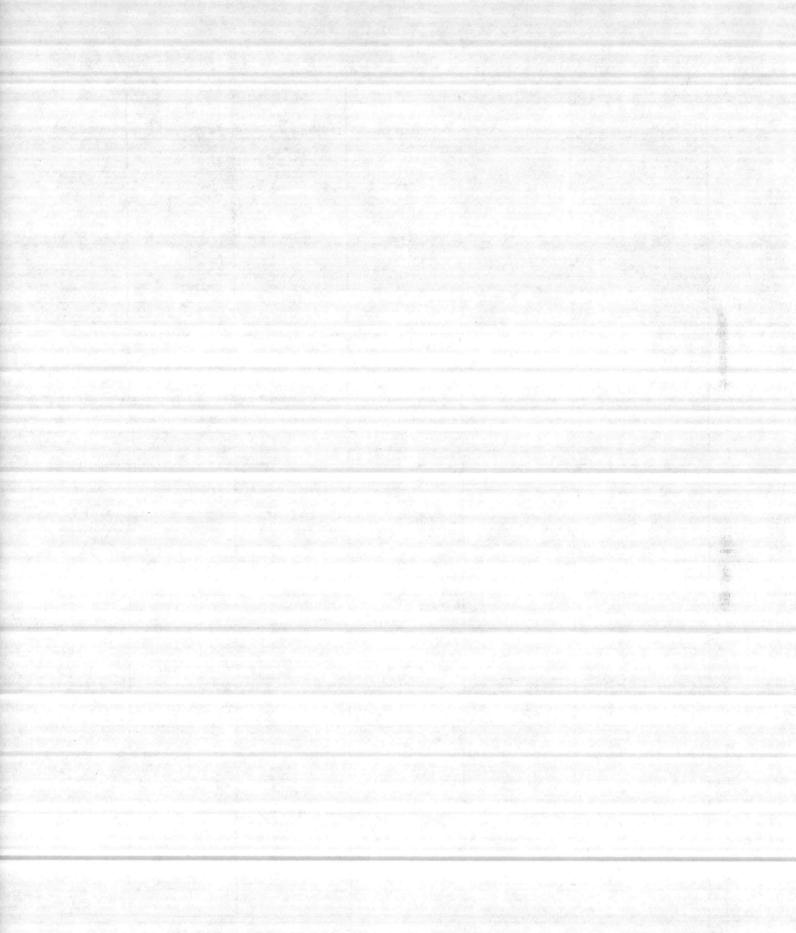
Nest		Incubation Period	Total Eggs	Released Young	Emerged Young	Total Young	Percent of Success
104	IMS	0	1	0	0	0	n
107	IMS		179				
108	IMS		134				
110	IMS		104		HA INC.		
112	IMS		104		The Market Co.		
114	IMS		120				
115	IMS		80				
116	IMS		83		and with the		
118	IMS	The second secon	112		e de la companio della companio dell		
*119	IMS		145	Line Brain to the spirits of the			
121	IMS		75				
125	IMS		99				
74. II							
			and the same of the same and th				
		To	TALS				
64			7352				
26	IMS		2823				
37	ОВ		4529	na Thail Saint and An Araba Saint and A	And the State of t		The Control of the Co
GREEN	N TURT	I.E	819	(11.14% OF	TOTAL)		
		Transport from the state of the					
THE SECTION							
					grande germann i der Schrift verscher Sein in Deutschaft schalte webbilde in der der	and the strong the Line of the party	
							11-4-1



# 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				esse de la companya d
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	A STATE OF S			
083			134				A service of the serv
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	and a special part of the second seco			100 mm
102	IMS		114	Santa de la companya del companya de la companya del companya de la companya de l			The state of the state of
103	IMS		78				一一位的数据



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

Lain	Date	Nu	mber		
20 June 121 82 68.1 0.6 mi S. Risley Pier Sheet 16 29 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 Aug 110 54 49.1 Nest 115 Grid 871238, renest 645 12 Aug 82 76 92.7 Nest 116 2.1 mi N. Risley Pier - Grid 928 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 Grid Aug 145 62 42.8 Nest 119 Grid 925281, 1.9 mi N. Risley Pier Grid Pier Nert 119 Grid 925281, 1.9 mi N. Risley Pier Grid Pier Pier Pier Pier Pier Pier Pier Pier	Lain	Lain	Hatched	% Hatch	Locality
20 June 121 82 68.1 0.6 mi S. Risley Pier Sheet 16 29 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 Aug 110 54 49.1 Nest 115 Grid 871238, renest 645 12 Aug 82 76 92.7 Nest 116 2.1 mi N. Risley Pier - Grid 928 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 Grid Aug 145 62 42.8 Nest 119 Grid 925281, 1.9 mi N. Risley Pier Grid Pier Nert 119 Grid 925281, 1.9 mi N. Risley Pier Grid Pier Pier Pier Pier Pier Pier Pier Pier	11 June	54	24	44.4	0.15 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 29 July 101 11 10.9 0.8 mi S. Risley Pier Grid 892255 20 Aug 157 32 20.4 Nest 100 Grid 916275 - green turtles 21 Aug 75 68 90.7 Nest 099 Grid 894257 22 Aug 114 39 34.2 Nest 098 Grid 917275 23 Aug 114 61 53.5 Grid 933276 24 Aug 179 63 35.2 Grid 952298 - Tag 634 25 Aug 182 1 0.75 Nest 108 - Tag 637 26 Aug 103 99 96.1 Nest 110 renest 661 - Grid 932286 27 Nest 110 renest 640 - Grid 882245 28 Aug 103 99 96.1 Nest 112 renest 640 - Grid 882245 29 Aug 118 56 46.6 Nest 114 Grid 922279, 1.7 mi N. Risley Pier Aug 110 54 49.1 Nest 115 Grid 871238, renest 645 20 Aug 17 65 91.4 Nest 116 2.1 mi N. Risley Pier - Grid 928 21 Aug 110 54 49.1 Nest 116 grid 925281, 1.9 mi N. Risley Pier Grid Aug 110 54 49.1 Nest 118 retag 639 1.53 20 Aug 73 38 52.1 3.4 mi N. Risley Pier - Grid 946295, Tag 20 Aug 73 38 52.1 3.4 mi N. Risley Pier - Grid 946295, Tag 20 Aug 73 38 52.1 3.4 mi N. Risley Pier - Grid 946295, Tag 20 Aug 73 38 52.1 3.4 mi N. Risley Pier - Grid 946295, Tag 20 Aug 73 38 52.1 3.4 mi N. Risley Pier - Grid 946295, Tag 20 Aug 73 38 52.1 3.4 mi N. Risley Pier - Grid 946295, Tag 20 Aug 73 38 52.1 3.4 mi N. Risley Pier - Grid 946295, Tag 20 Aug 73 38 52.1 3.4 mi N. Risley Pier - Grid 946295, Tag 20 Aug 73 38 52.1 3.4 mi N. Risley Pier - Grid 946295, Tag 20 Aug 73 38 52.1 3.4 mi N. Risley Pier - Grid 946295, Tag 20 Aug 73 38 52.1 3.4 mi N. Risley Pier - Grid 946295, Tag 20 Aug 73 38 52.1 3.4 mi N. Risley Pier - Grid 946295, Tag					
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 132 1 0.75 Nest 108 - Tag 637 8 Aug 103 99 96.1 Nest 110 renest 661 - Grid 932286 8 Aug 103 99 96.1 Nest 110 renest 661 - Grid 882245 10 Aug 118 56 46.6 Nest 114 Grid 922279, 1.7 mi N. Risley Pi 10 Aug 71 65 91.4 Nest 115 Grid 871238, renest 645 12 Aug 100 82 76 92.7 Nest 116 2.1 mi N. Risley Pier - Grid 928 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 Pi 20 Aug 73 38 52.1 3.4 mi N. Risley Pier - Grid 946295, Tag 20 Aug 73 38 52.1 Camp Lejeune 2,844 1,252 44.0 Total Green and Loggerhead 2,426 1,157 47.7 Total Loggerhead	그 사람들 등 이 생생이 그는 것이 된 점점을 먹어 있다.				
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 Pi 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 928 14 Aug 110 54 49.1 Nest 115 Grid 925281, 1.9 mi N. Risley Pi 20 Aug 73 38 52.1 3.4 mi N. Risley Pier - Grid 946295, Tag 20 Aug 73 38 52.1 3.4 mi N. Risley Pier - Grid 946295, Tag 20 Aug 73 38 52.1 3.4 mi N. Risley Pier - Grid 946295, Tag 22 Aug 1,252 44.0 Total Green and Loggerhead 2,426 1,157 47.7 Total Loggerhead					
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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 897258 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 Pi 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 928 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 Pi green turtles 2.844 1,252 44.0 Total Green and Loggerhead 2.844 1,252 44.0 Total Green and Loggerhead 2.426 1,157 47.7 Total Loggerhead			1		green turtles
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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 Pi         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 928         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 Pi         20 Aug       73       38       52.1       3.4 mi N. Risley Pier - Grid 946295, Tag         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				35.2	Grid 952298 - Tag 634
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 Pi 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 928 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 Pi green turtles 20 Aug 73 38 52.1 3.4 mi N. Risley Pier - Grid 946295, Tag 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				0.75	
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10 Aug				96.1	
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12 Aug 82 76 92.7 Nest 116 2.1 mi N. Risley Pier - Grid 928 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 Pi green turtles 20 Aug 73 38 52.1 3.4 mi N. Risley Pier - Grid 946295, Tag 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		71	65		
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 Pi green turtles         20 Aug       73       38       52.1       3.4 mi N. Risley Pier - Grid 946295, Tag         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		82	76		Nest 116 2.1 mi N. Risley Pier - Grid 928284
17 Aug 145 62 42.8 Nest 119 Grid 925281, 1.9 mi N. Risley Pi green turtles  20 Aug 73 38 52.1 3.4 mi N. Risley Pier - Grid 946295, Tag  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		110			Nest 118 retag 639 1.53
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		145	62	42.8	green turtles
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	20 Aug	73	38	52.1	3.4 mi N. Risley Pier - Grid 946295, Tag 667
2,426 1,157 47.7 Total Loggerhead				전시 - Barta New Tale (1987) 그런 1987 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	
그는 그		2,844	1,252	44.0	Total Green and Loggerhead
		2,426	1,157	47.7	Total Loggerhead
하는 사람들은 사람들이 가득하는 사람들이 가득하는 것이 되었다. 그는 사람들이 되었다면 하는 사람들이 가득하는 것이 되었다. 그는 사람들이 가득하는 것이 되었다.		418	95	22.7	Total Green

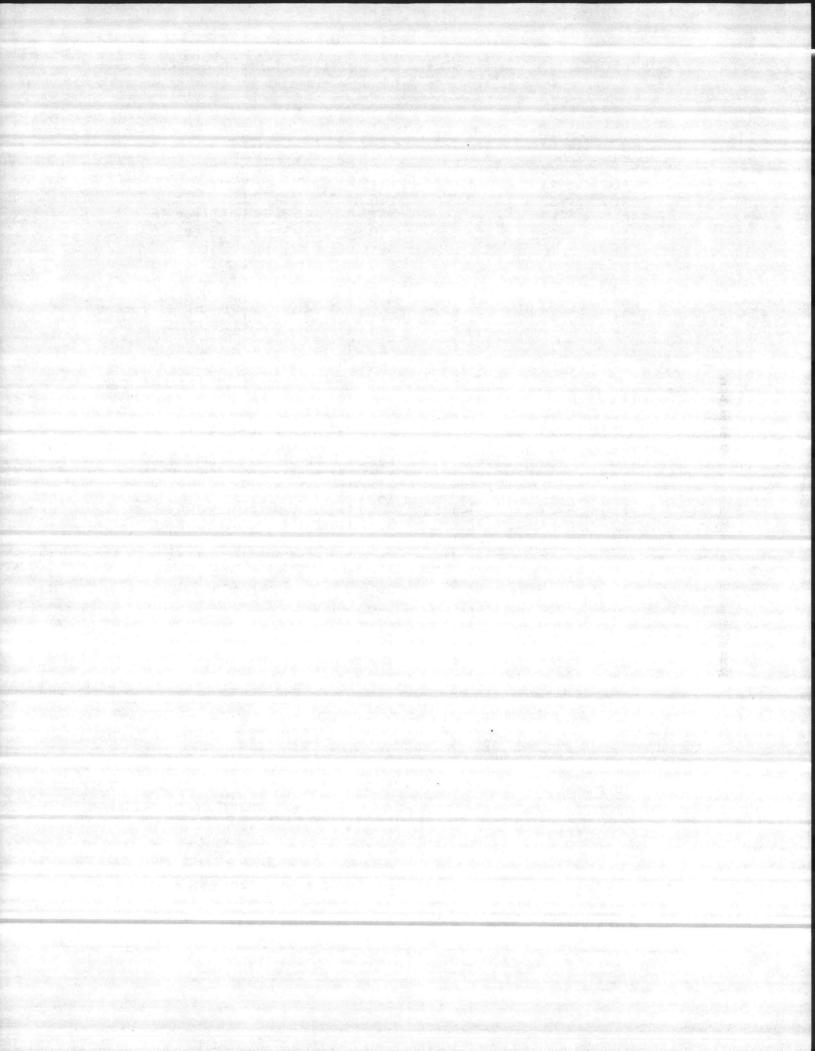
Total Released - 1,581 " Loggerhead - 1,329 84.1%

93.8% Green 89

## 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		est un regges altransa taran sustifica.	

<sup>\*67</sup> others developed but did not hatch. \*\*44 others developed but did not hatch.



 $\begin{array}{c} \text{TABLE V} \\ \text{Ground Survey Numbers} \end{array}$ 

Date	Crawls No Nest	Crawls/Nest	Total Crawls	
5-30-80		1		
6-2-80		1		
6-4-80	1	1	2	
6-9-80	î		1	
6-11-80	1	2	3	
6-13-80	î		1	
6-14-80	2		2	
6-17-80		2	2	
6-19-80	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	,	2	
6-20-80		<b>1</b>	2	
6-21-80	1	1	2	
6-22-80	politica de la companya del companya de la companya del companya de la companya del la companya de la company		2	
6-25-80		2	2	
6-26-80	2	1	1	
6-27-80	2		2	
6-29-80	1	1	2	
		2	2	
6–30–80 7–1–80	1	1	2	
7-1-80	1		1	
7-3-80	1 2	• Ann	1 3	
7-4-80		1 3	3	
7-5-80			3	
7-6-80	1	1 2	1	
7-7-80		1	3 1	
7-8-80	2	1	2	
7-9-80		1		
7-10-80	1	1	1 2	
7-11-80	5			
7-11-80		1	5	
7-12-80			1	
	5	2	7	
7-15-80	3	1	4	
7–16–80	region in the control of the control	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		
7-26-80	2		2	
7-27-80	5		5	
7-28-80		2	2	
7-30-80		1	1	

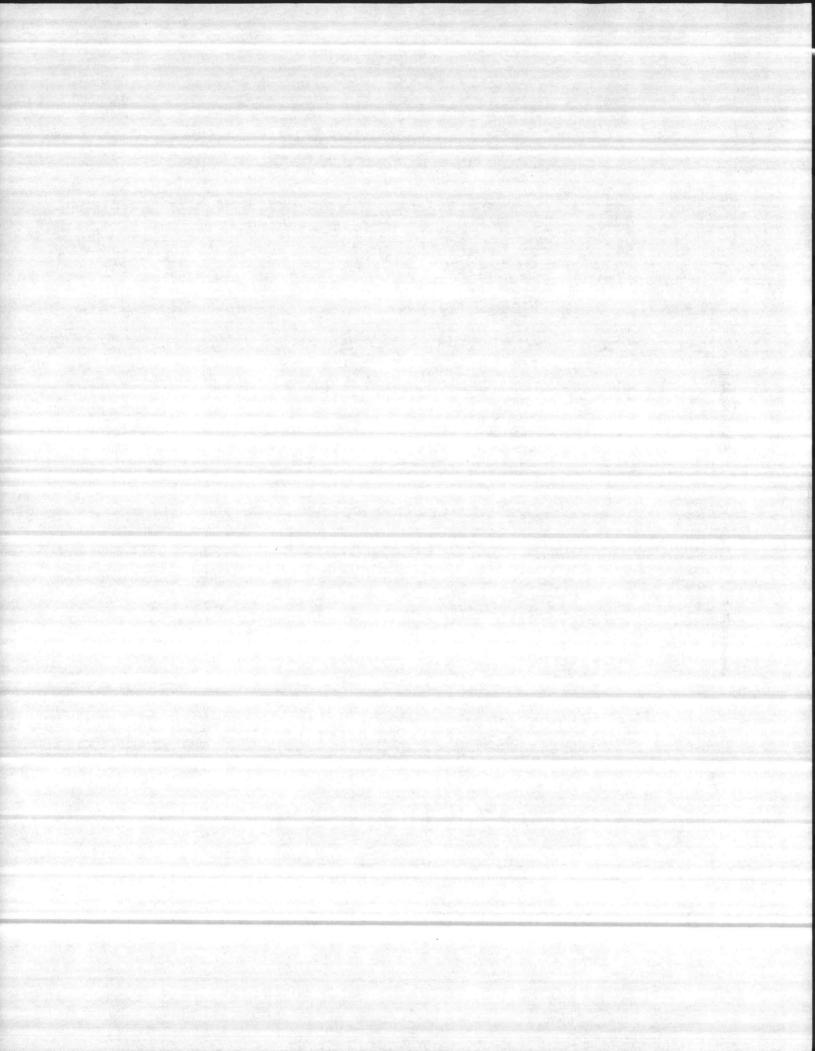


TABLE V Cont'd
Ground Survey Numbers

Date	Crawls No Nest	Crawls/Nest	Total Crawls
8-1-80		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
8-8-80	1	2	3
8-9-80	i		1
8-10-80		2	2
8-12-80		1	The state of the state ${f T}_{ijkl}$
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			Ō
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			9
8-30-80			0

TABLE VI

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

- E	ate	Nu	mber ·		
L	ain	Lain	Hatched	% Hatch	Locality
11	June	54	24 -	44.4	0.15 mi S. Risley Pier
	June		82	68.1	0.6 mi S. Risley Pier
	June	101	87	86.1	2.7 mi N. Dieley Pier
The second second second	June	117	× 26*	22.2	2.7 mi N. Risley Pier Sheet 16 1.0 mi S. Risley Pier Sheet 16
	July	119	0	0.0	Nest 048 - all infertile
	July	120	43**	26.7	
	July	166	ĭ	.006	0.8 mi S. Risley Pier Grid 843254 green turtles
	July	96	94	98.0	
	July	128	52	40.6	0.8 mi S. Risley Pier Grid 892255
	July	101	11	10.9	0.4 mi S. Risley Pier Grid 897258
	Aug	157	32	20.4	0.8 mi S. Risley Pier Grid 892255
i	Aug	75	68	90.7	Nest 100 Grid 916275 - green turtles Nest 099 Grid 894257
	Aug	114	39	34.2	Nest 098 Grid 917275
	Aug	114	61	53.5	Grid 933276
	Aug	68	12	17.7	Grid 897258
	Aug	179	63	35.2	Grid 952298 - Tag 634
	Aug	132	1	0.75	Nest 108 - Tag 637
	Aug	82	50	60.9	Nest 110 renest 661 - Grid 932286
	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
	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

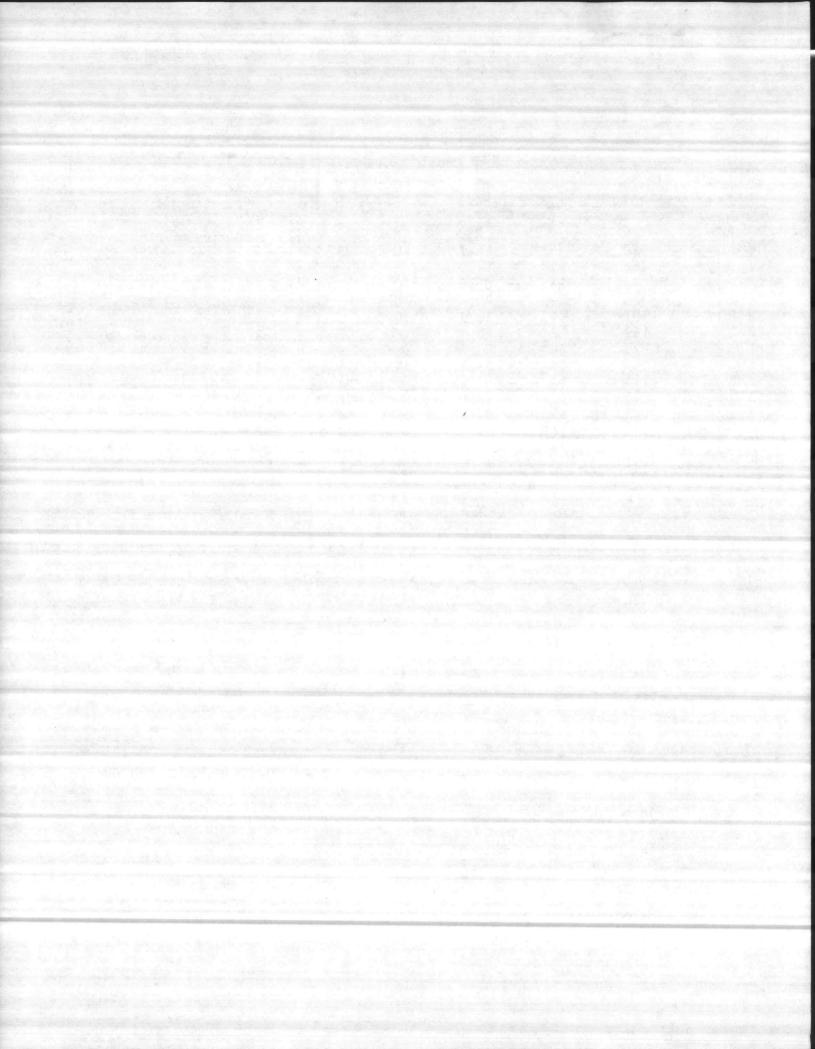
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% Hatch Ranged.	0 8-99 2			

<sup>\*67</sup> others developed but did not hatch. \*\*44 others developed but did not hatch.



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

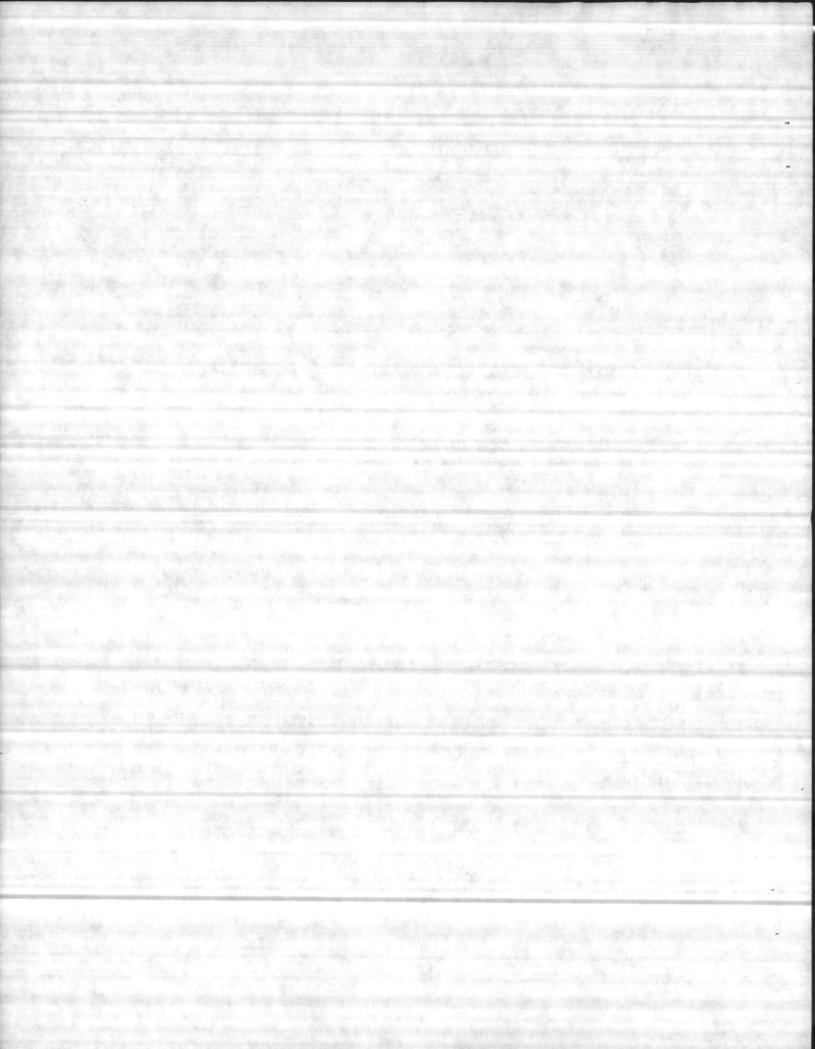
CHARLES D. PETERSON
Supervisor, Wildlife Management

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

Tagging Adult Turtles

Collection of Nesting Data

Insitu Weather Observations

Aerial Surveys

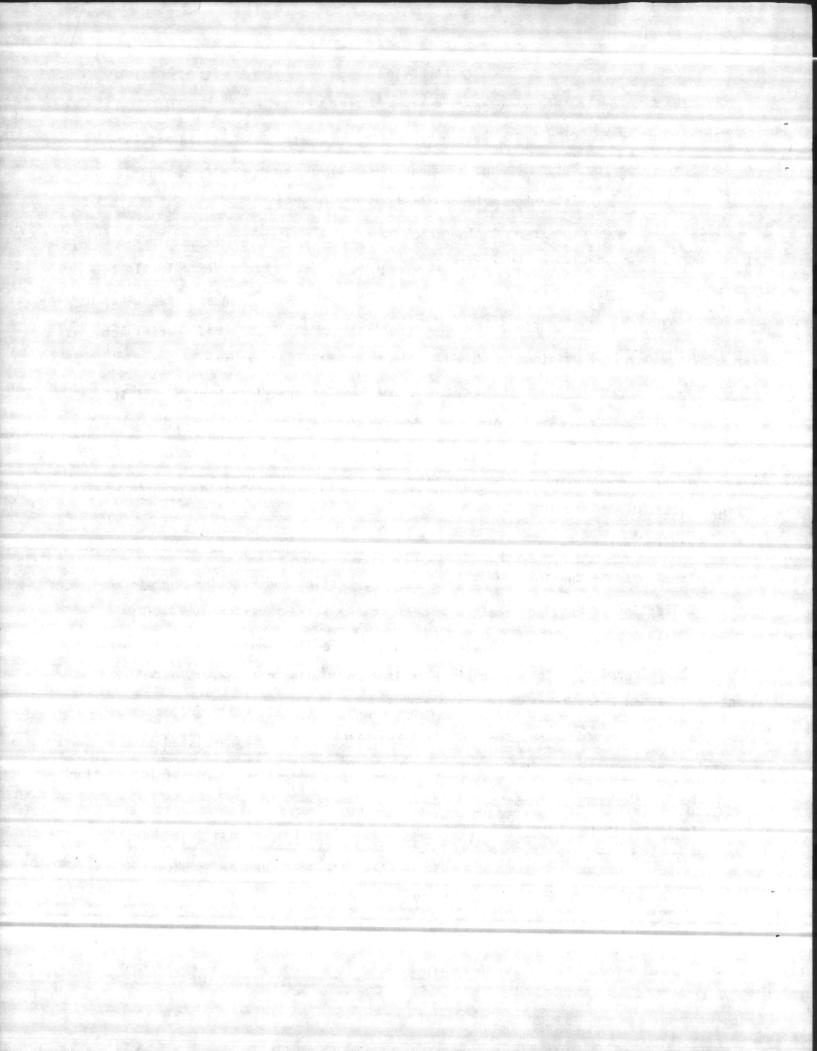
Nesting and Hatching Success

Occasional Hatchling Tagging

Stranding Reports on Dead Turtles

The University of North Carolina Institute of Marine 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 a with the last nest on 25 August 1980. There were a total of 125 crawls to r on Onslow Beach of which 65 were successful. This compares closely to the 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

(36 turtles taggel) each.

1980 nesting season, a total of 36 turtles were togged previously with Tag No. NCOOO1 and subseque

mp Lejeune technicians. Of the 36 tagged turtle

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 hatch least 63 mests success rate. There were 2 deformed and 5 white (not albino) Gr but 1'02 further the 5 nests. Two of the Green Turtle nests were naturally incub contained 315 eggs of which 292 hatched for an 83.2% rate of hatchering 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

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### RESULTS

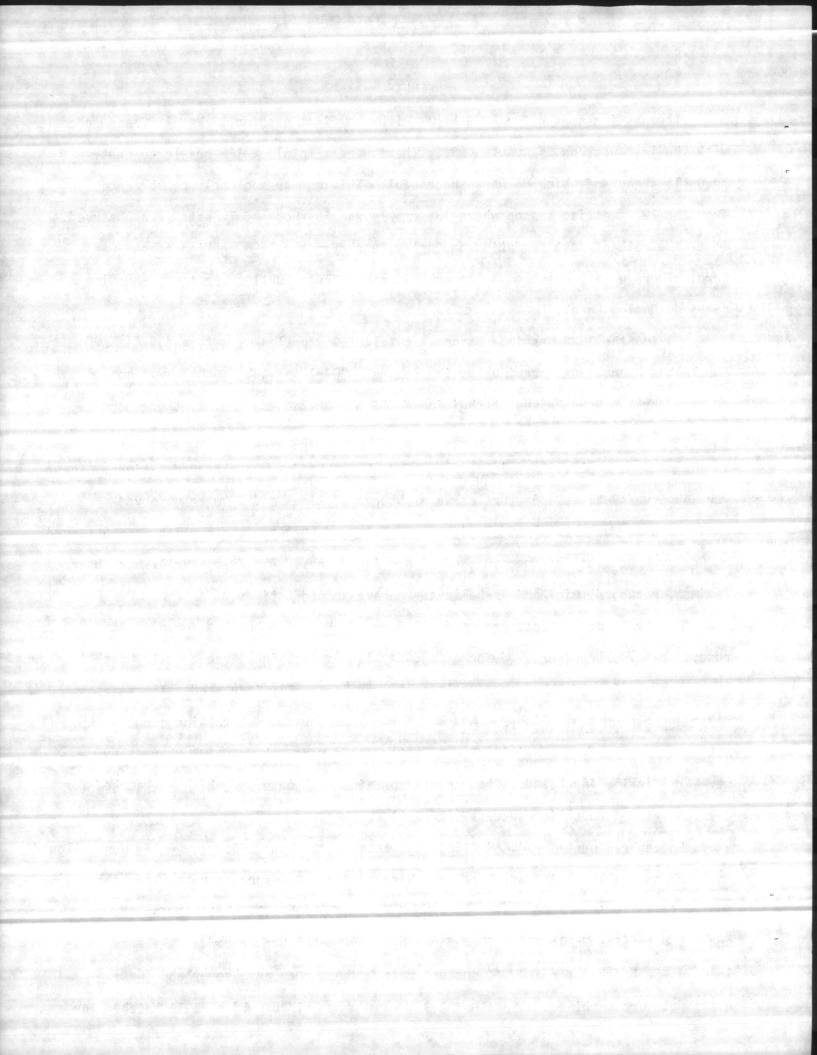
The nesting season for 1980 began with the first nest on 30 May 1980 and ended with the last nest on 25 August 1980. There were a total of 125 crawls to nest on Onslow Beach of which 65 were successful. This compares closely to the data from the 1979 nesting season where 138 crawls and 63 successful 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. NCOOO1 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.

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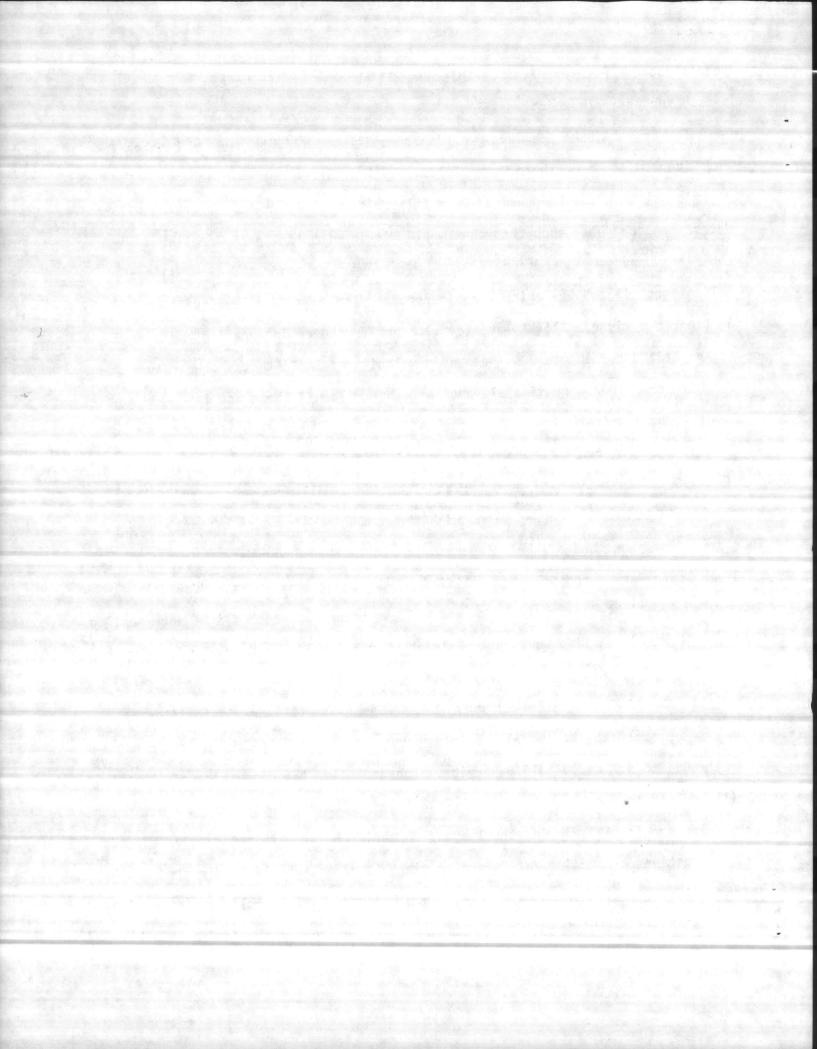


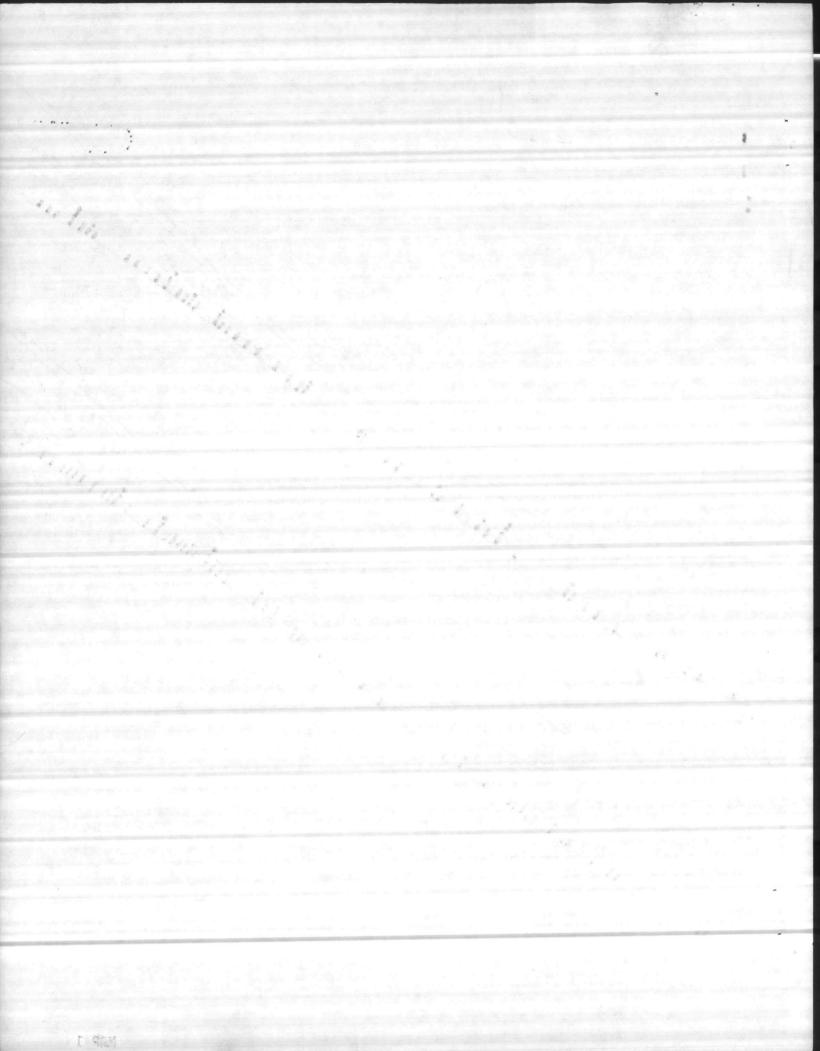
year's success rate of 67.96%. This overall success ate is better than the 1979 season success rate which was 57%.

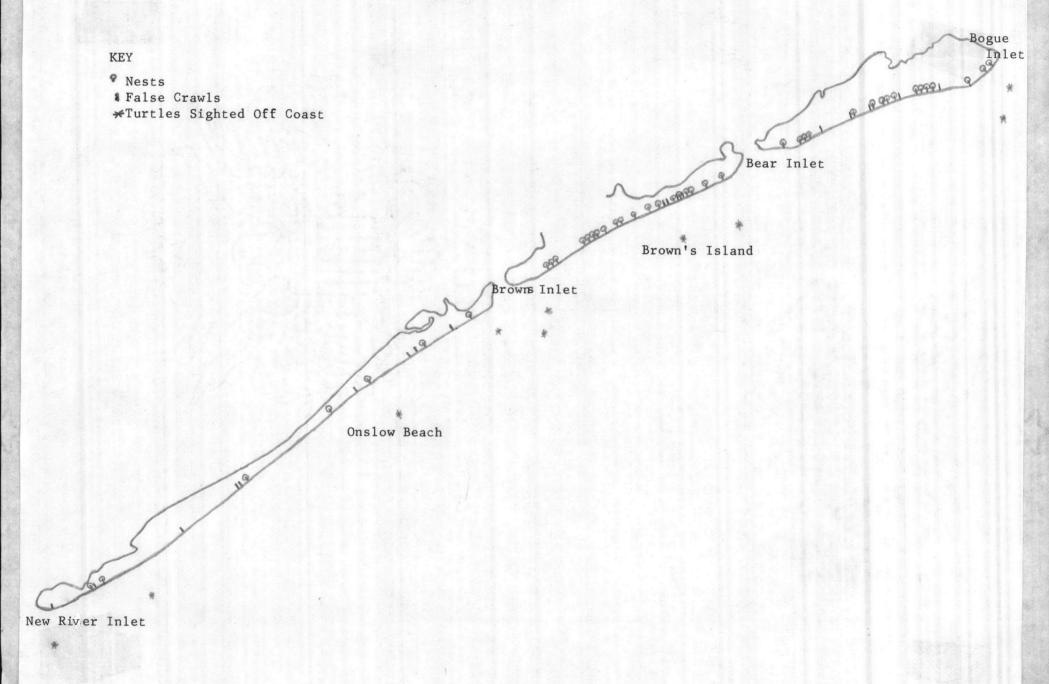
The Camp Lejeune Sea Turtle aerial surveillance flights covered beaches from New River Inlet to north to Bouge Inlet, which included Onslow Beach, Camp Lejeune, Brown's Island, Camp Lejeune and Bear Island (Hammock Beach State Park). Flight dates were scheduled such that they would fit in with the North 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).







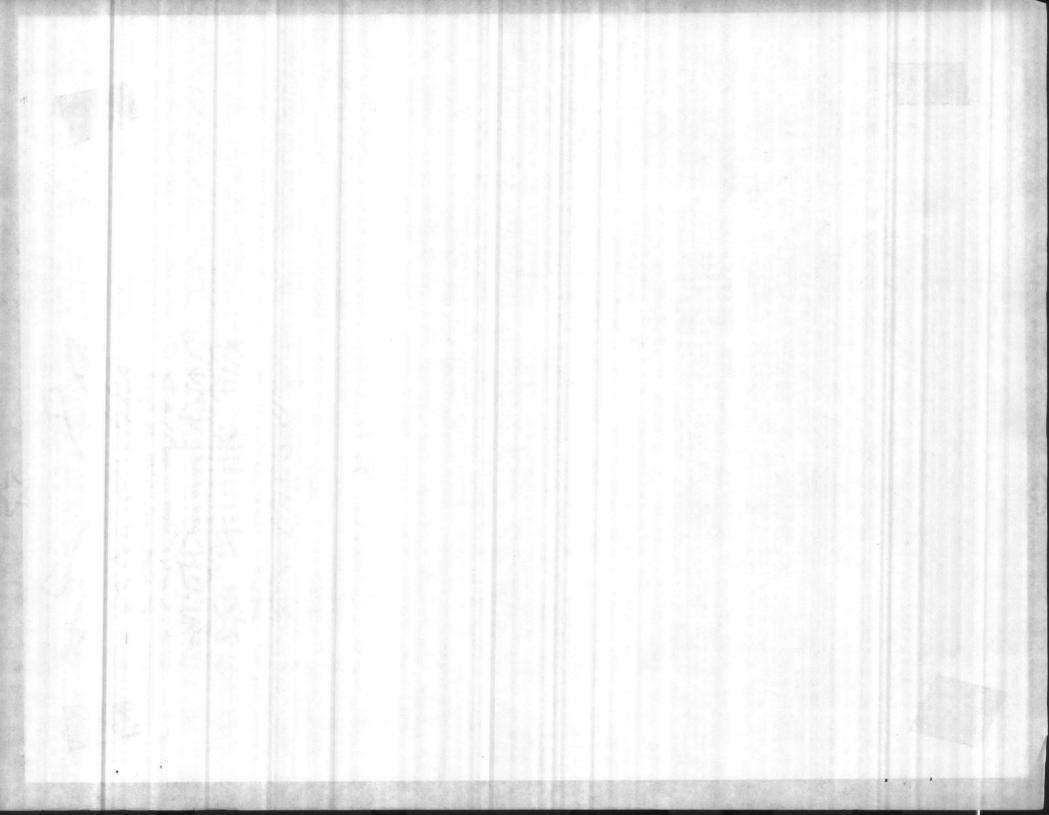


TABLE I
CRAWL INFORMATION IN RELATION TO MOON AND TIDE CYCLES AND WEATHER CONDITIONS
(Nights handled as a whole not broken at midnight)

DATE Night of	Moon Rise % Illumin	Time of Hi Tide	Time Crawl W/O nest	Time Crawl W/ nest	Total	Weather	Tem н <sub>э</sub> о	p Air
5-30-80	70 111011111	- 1100	wy o nese	Service Code (400)	1	Clear	20.5°C	
5-31-80				1	0	raii	20.5 0	19 0
	2454 255	24.00						
6-01-80	2151-95%	2130			0	Fair Sctr	1	
6-02-80	2241-90%	2216		1	1	Fair	22°C	21°C
6-03-80	2326-82%	2307			0	Prince David		
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	100 Aug 170 Aug		
6-11-80	0455-05%	1835 0701	1	2	3	Fair Partly Cloudy	24.9°C	
0-11-00	0455-05%	1926	1	4	3	Croudy	24.9 6	77.
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		24.00	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	apples of the person to the second	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

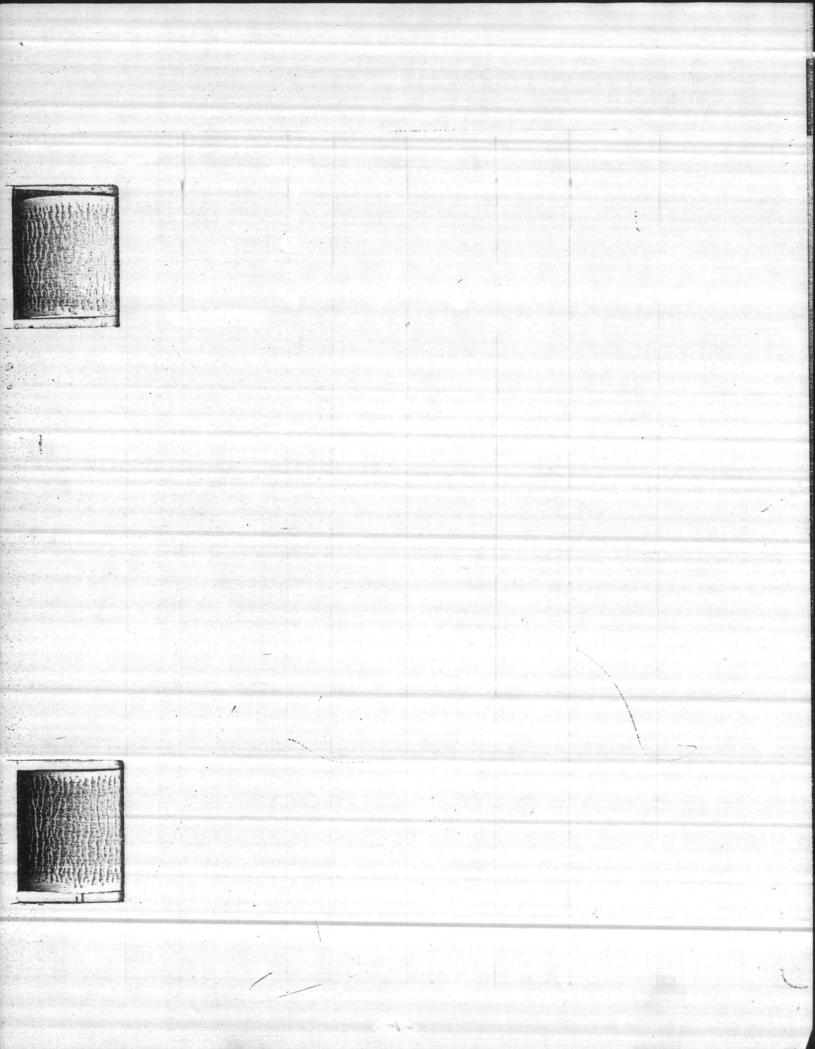


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CRAWL INFORMATION IN RELATION TO MOON AND TIDE CYCLES AND WEATHER CONDITIONS
(Nights handled as a whole, not broken at midnight.)

DATE	Moon Rise	Time of	Time	Time			Tem	р
Night of	% Illumin	Hi Tide	Crawl W/o nest	Crawl W/ nest	Total	Weather	н <sub>2</sub> о	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 Fair &	24°C	23.5°C
6-27-80	1850–98%	0723	2200	2245	2	Clear	24°C	24°C
5-28-80	1945–100%	1943		2200	0	Fair & Clear	24°C	26°C
5-29-80	2037-99%	2028		3298 8188	3	Fair & Cloudy	25°C	26°C
6-30-80	2125-97%	2114	2115 2300		1	Fair & Cloudy	24°C	22.5°C
7–1–80	2209-92%	2201	0030		2	Fair & Clear	24°C	24°C
7-2-80	2249-85%	2251	0215		1	Fair & Clear Thunderstm	26°C	27°C
7–3–80	2328-75%	2346	2245	2230	2	Clearing	24.5°C	23°C
7-4-80	0005-65%	0043	W 48	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 ThundStm	26°C	26°C
7–10–80	0431–6%	1820 0645	0015 0115 0030 0335	2345	5	2200 Clearing240	26°C	23°C
7–11–80	0.527-2%	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
-16-80	0914–14%	2242	0215 0315	2145 6368	5	Fair & Clear	26°C	26°C
-17-80	1009-21%	2323	2240 0400	0245	3	Fair & In- crsg Clouds	27.5°C	26°
<b>7–18–80</b>	1103-29%	0006	content their	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

(ARCHE) PAR SENATION IN SENAITON TO MOON AND TIDE CYCLES AND WEATHER COMPETIONS.

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

DATE	Moon Rise	Time of	Time Crawl	Time Crawl			Temp	
Night of	% Illumin	Hi Tide	W/O nest	W/ nest	Total	Weather	H <sub>2</sub> 0	Air
7–20–80	1250-48%	0149	2200	2330 0330	3	Fair & Clear Fair & Incrs	27°C	28.5°
7-21-80	1345-57%	0241		0040	0	Cloudiness Fair &	27.5°C	27°C
7-22-80	1442-67%	0338		0035	2	Cloudy	27°C	27°C
7–23–80	1539-76%	0431		0030	1	Rainy Fair &	25°C	25°C
7-24-80	1639-84%	0521		2215	1	Cloudy Fair &	26°C	26°C
7–25–80	1733-91%	0612	2200	2215	1	CLoudy	26°C	26.5°
7–26–80	1827–96%	1835 0658	2200 1835 0200			00-2400 Rainy 200 Thundstms		24.5°
7-27-80	1917-99% Full	1922 0745	2200 2210 2200 2230	2210	4	Heavy Rain	<u>-</u>	
7–28–80	2004–100%	2009		2210 2210	2	Cloudy	27°C	26°C
7–29–80	2047-98%	2054			0	Partly Cloudy Fair &	27°C	25°C
7–30–80	2128-93%	2144		2120	1	Clear Fair &	27°C	26°C
7–31–80	2206-86%	2233	0130		1	Clear 2000-2200	27.5°C	27.5°
8-01-80	2224-77%	2328	0315	2200 2200 0245	4	Thunderstorm 2400 Clearin		26.5°
8-02-80	2323-67%	0026		2330 8338	3	Fair & Clear	27°C	28°C
8-03-80	0003/44%	0129	2		2	D1	_	
8-04-80	0047-33%	0235		2250	1	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 Partly	27°C	28°C
8-07-80	0318-8%	0540 1806	2400 2300	2245	1	Cloudy Fair &	27°C	26.5°
8-08-80	0414–3%	0630 1852	0200	2315	4	Clear	27°C	27.5°
8-09-80	0511–1%	0715 1934			0			
8-10-80	0608-0%	0758		2	2	Foir 0		
8-11-80		2013			0	Fair & Clear	27°C	27.5°
8-12-80	0705-1%	2052		0230	1	Cloudy	27°C	27°C

3 -

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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 <sub>2</sub> O	Air
8-13-80	0800-5%	2129			0	Fair & Clear Fair &	27°C	28°C
8-14-80	0854-10%	2206	2230	2300	2	Clear &	27°C	28°C
8-15-80	0948-16%	2243			0	Windy	27.5°C	26.5°C
8-16-80	1041-23%	2323		1	1	0 1 9		
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			in our ca			
8-24-80	1754-94%	0452	0100		1	Fair & Clear	23°C	19°C
			between	between		Fair &		
8-25-80	1839-98%	0543 1721	2200–2400	2200-2400	2	Clear	23°C	19°C
8-26-80	1922-100%	0634 1859						
8-27-80	2002-99%	0723						
8-28-80	2042-95%	0812						
8-29-80	2121-88%	2036			ı			
8-30-80	2202-80%	2125						
8-31-80	2245-69%	2216						

TABLE INEGGLATION IN MELATION TO MOON AND TIBE CYCLES AND WEATHER FEMOLETICES.

# TABLE II RETURN RECORD OF TAGGED TURTLES

#### 1980 SEA TURTLE INVENTORY

DATES 4/17/80 - 8/9/80

Date	Tag #	Return	Return	Return	Return
6/17/80	651	7/7/000	7/15/00	7 / 00/00	
6/17/80 6/19/80 <b>Ø</b>	652 653	7/3/80🛇	7/16/80	7 / 28/80	
6/19/80 6/20/80	654 655	7/3/80@	7/15/80 🛇 Retag 640	7/28/80	8/8/80
Green					0
6/25/80	657*	7/9/80 Retag 669	7/21/80 Retag 649	8/2/80	8/17/80
6/26/80 <b>Ø</b> 6/27/80 <b>Ø</b>	NC0001 648	7/11/80 <b></b> 7/24/80	7/24/80		
6/27/80	658				
6/29/80	650	7/12/80			
6/29/80	659	7/14/00@	7/16/00	0/1/00	
6/30/80	660	7/14/80 <b>8</b> Retag 672	7/16/80	8/1/80	
7/1/80 <b>Ø</b> 7/3/80	661 662	7/14/80	7/26/8	8/8/80	
7/6/80	663	of an In Republic in			
7/6/80 <b>⊘</b> 7/7/80	664 667	8/18/80	8/20/80		
7/8/80	665	0/10/00	0,20,00		
7/8/80€	666	7 /07 /00			
7/10/80 <b>⊗</b> 7/11/80 <b>⊗</b>	670 671	7/23/80			
7/14/80	673				
7/14/80	674				
7/15/80 7/17/80	675 641				
7717700	041	A Late Television			
7/17/800	642	7/18/80	0.40.400		
7/18/80 <b>⊘</b> 7/19/80	647 645	7/20/80	8/2/80		
7/23/80	646				
7/25/80	644				
7/30/80 8/1/80 <b>(1)</b>	633 639	8/14/80			
8/3/80	638	0,14,00			
8/4/80	634				
8/5/80 8/7/80 <b>⊗</b>	637 636	8/12/80			
8/9/80\$	635	0/12/00			

## Tagged or

<sup>1) -</sup> Turtle previously tagged but tag missing - tag hole present

<sup>2 -</sup> Crawl body pit and eggs indicative of Green Turtle but turtle not observed

<sup>1</sup> Turtle observed 5 times; 4 turtles observed 4 times; 3 turtle observed 3 times;

<sup>6</sup> turtles observed 2 times; 23 turtles observed 1 time

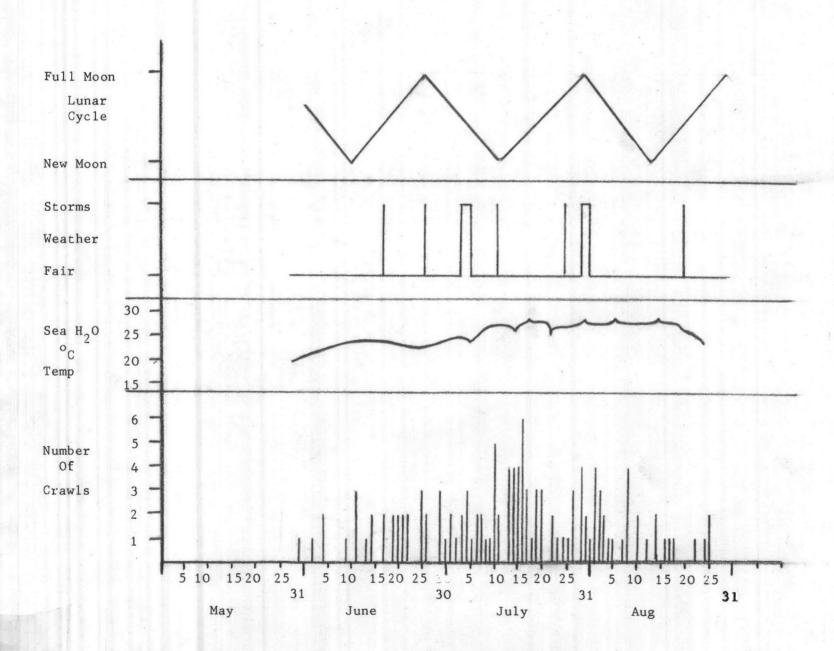
<sup>61</sup> sightings of tagged turtles

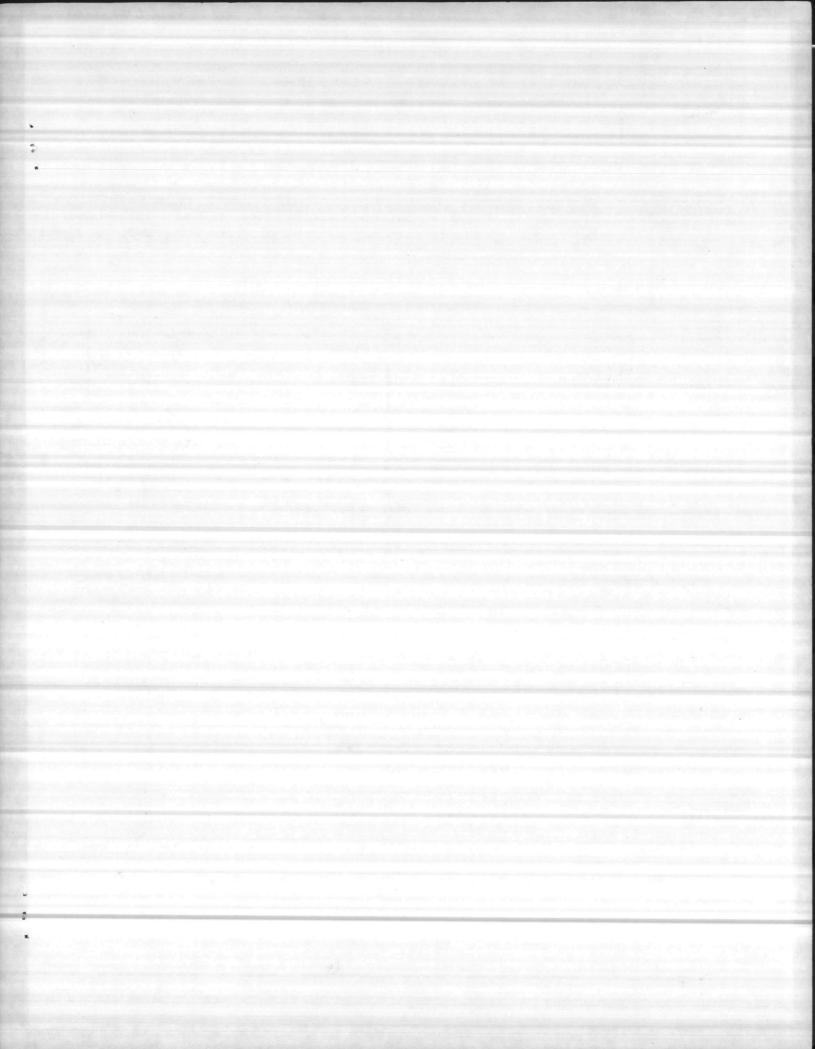
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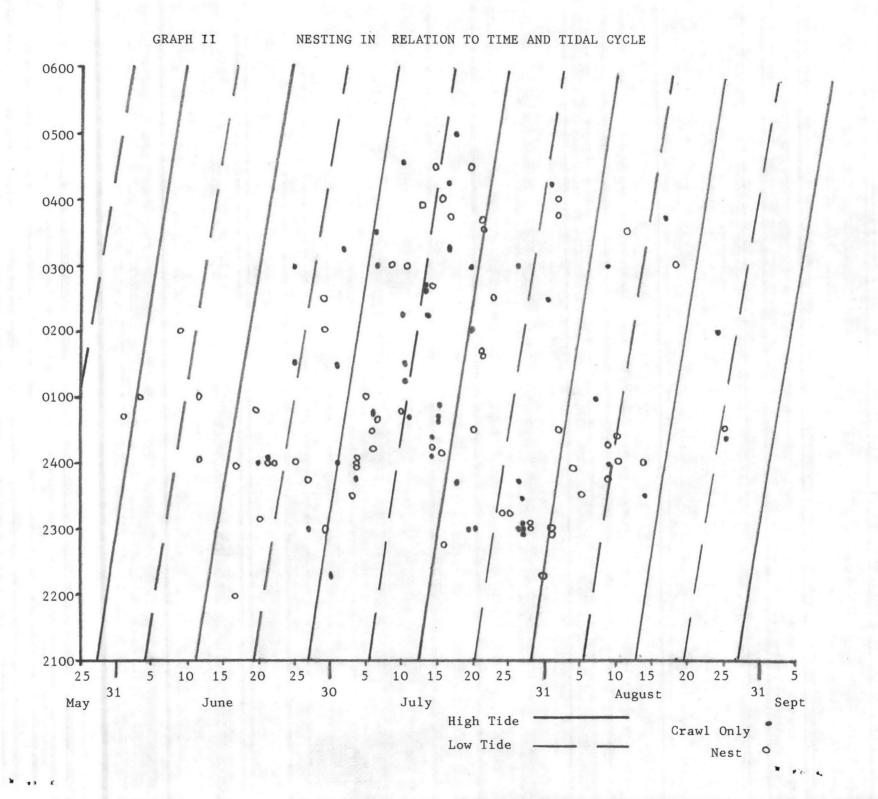
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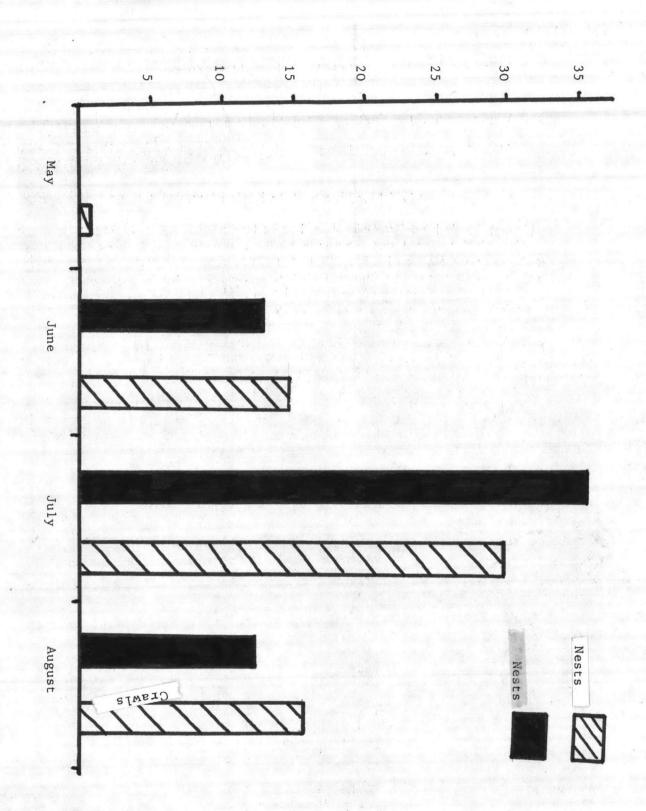






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#### TABLE III

# AERIAL SURVEY

		Mav	30			Mav	31													
Onslow Beach	N 1	FC O	T	SB 2	N	FC	T	SB												
Brown's Island			0				0	1												
Bear Island	0	2	0	1	0	0	0	2												
Dear Ibrana	U	U	0	0	2	0	0	0												
		June	13			June	14													
offer with the last	N	FC	T	SB	N	FC	Т	SB												
Onslow Beach	0	1	2	1	O	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			Jul	y 2	.1
	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				a Trac				
Onslow Beach	0	1	0	1	2	0	0	0	1	0	0	2					4			
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								
		ТО	TAL																	
	N	FC	Т	SB										Sec	1					
Onslow Beach	7	9	4	13																Artemania Terretarian
Brown's Island	19	4	4	11										"ylan"	1			111		and the same

Key N - Fresh Nests

Bear Island

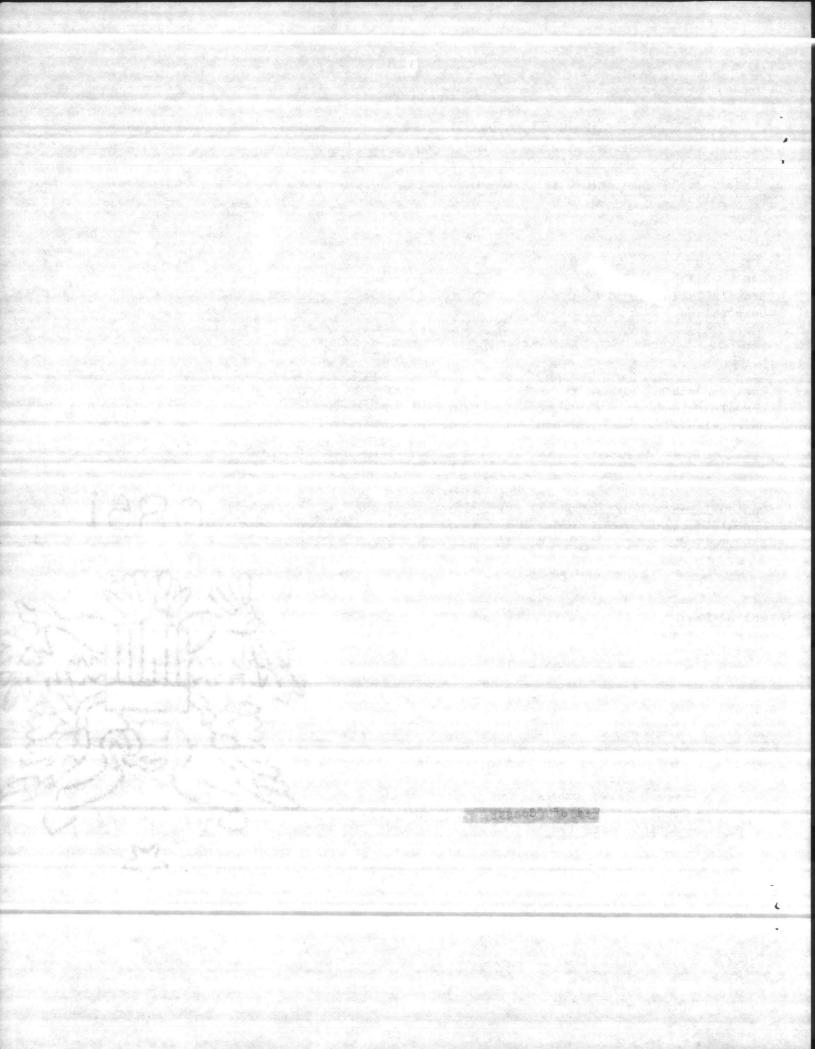
FC - Fresh False Crawls

16

T - Turtles sighed of Coast

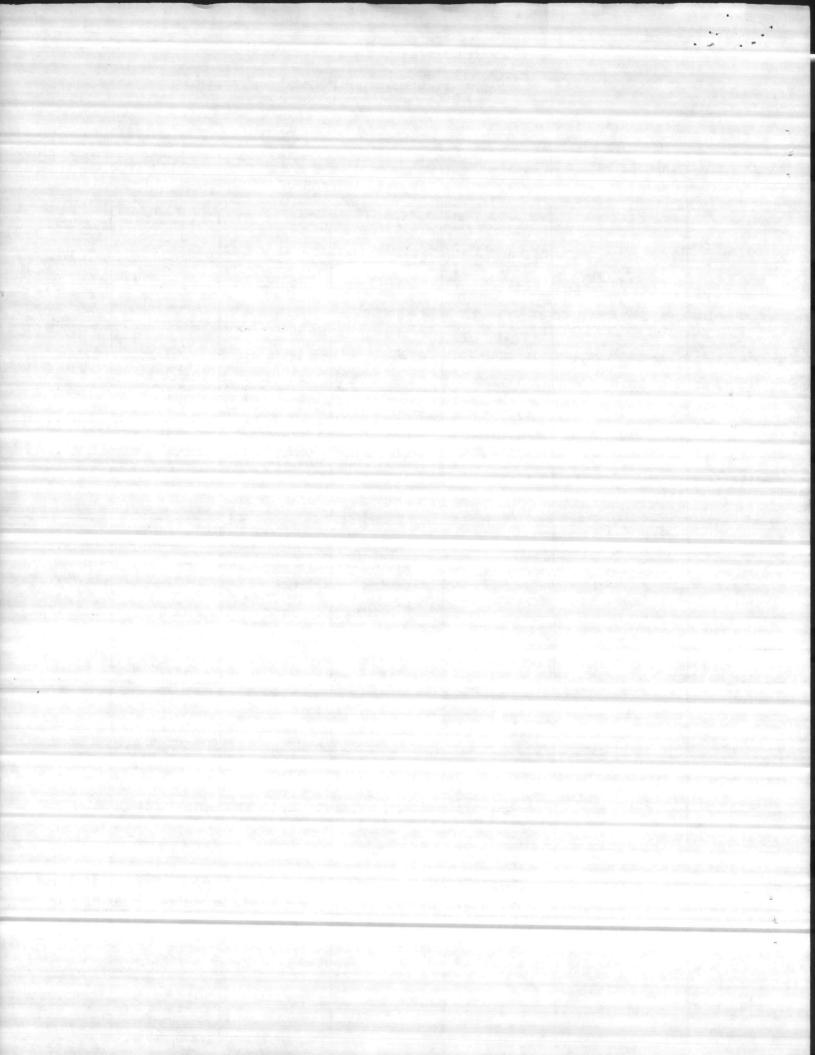
42 18 10 30

SB - Shrimp Boats



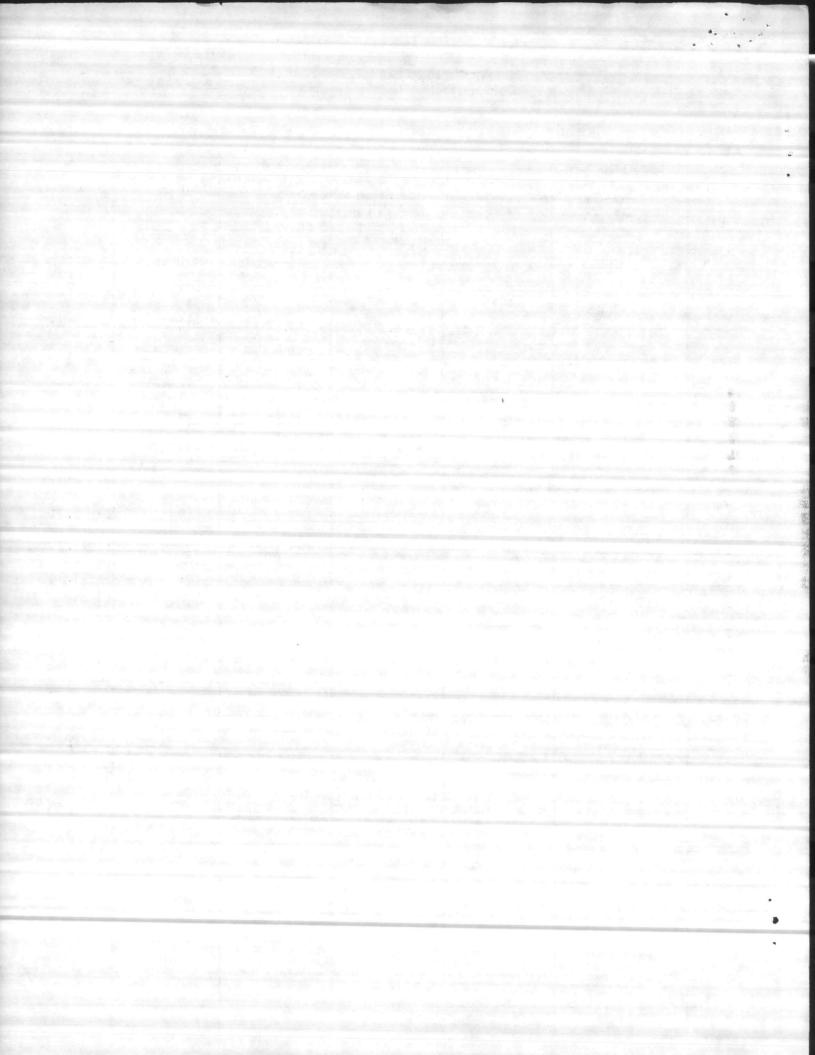
# SEA TURTLE INVENTORY (Hatching Success) Marine Corps Base Camp Lejeune, North Carolina

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 1	MS 69	53	24	<u>-1</u>	24	45.3%
007		126	0	0	0	0
012	65	102	81	4	8.5	83.3%
013	64	175	4	119	123	70.3%
015	63	134	0	128	128	95.5%
016 I	MS	121		The second second second second		
018 I	MS	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 I	MS	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

Nest No.	Incubation Period	Total Eggs	Released Young	Emerged Young	Total Young	Percent of Success
048 IMS	1 200	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	and the second second			illa i populari na sala sa 1955
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				4 7 7 4 7 7 W
094 IMS		132				
095 IMS		102				eer of the
096		88	0	74	74	84.1%
•098 IMS		114				
099 IMS		78		Table 1		
*100 IMS		157				·
102 IMS		114			i i	
103 IMS		78	y control of the second			



# 1980

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

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		No. of the second		
114	IMS		120		The second		
115	IMS		80				
116	IMS		83				NATURE OF THE PROPERTY OF THE
118	IMS	e la la persona de la composición de l La composición de la	112	and magazine and			
*119	IMS		145				
121	IMS		75			Aug Property of the	
125	IMS		99	42.0			
- 200							
		To	TALS	edilectoric	and the state of t		
64			7352				
26	IMS		2823				
37	ОВ		4529				
63	?					are three to the	
GREEN	TURTI	E	819	(11.14% OF	TOTAL)		
					The second secon		
3							10 mm 1 m
							1
							1644
					10 - 10 (10 mg)		
PERM							A Common Street Street

TO 1418

 $\begin{array}{c} \text{TABLE V} \\ \text{Ground Survey Numbers} \end{array}$ 

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	i	1	2
6-22-80		2	2
6-25-80		1	
6-26-80	2	1	1
6-27-80	1	,	2 2
6-29-80		1 2	2
6-30-80	1	1	2
7-1-80	$\hat{\mathbf{i}}$		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	1 5		5
7-12-80		1	1
7-14-80	5	2	7
7-15-80	3	1	4
7-16-80	A SHOULD BE WANTED	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	i i
7-23-80		2	2
7-24-80		2	2
7-25-80		1	and the second second second second second
7-26-80	2	•	2
7-27-80	2 5		5
7-28-80		2	2
7-30-80		1	1
		1	

TABLE \*\*:
Ground Survey Vurbers Take 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

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

D	ate	Nur	nber		Locality				
L	ain	Lain	Hatched	% Hatch	Locality				
11	June	54	24	44.4	0.15 mi S. Risley Pier				
	June	121	82	68.1	0.6 mi S. Risley Pier				
	June	101	87	86.1	2.7 mi N. Risley Pier Sheet 16				
	June	117	26*	22.2	1.0 mi S. Risley Pier Sheet 16				
10		119	0	0.0	Nest 048 - all infertile				
17		120	43**	26.7	0.8 mi S. Risley Pier Grid 843254				
	July	166	1	.006	green turtles				
	July	96	94	98.0	0.8 mi S. Risley Pier Grid 892255				
	July	128	52	40.6	0.4 ml S. Risley Pier Grid 897258				
	July	101	11	10.9	0.8 mi S. Risley Pier Grid 892255				
	Aug	157	32	20.4	Nest 100 Grid 916275 - green turtles				
ī	Aug	75	68	90.7	Nest 099 Grid 894257				
1	Aug	114	39	34.2	Nest 098 Grid 917275				
	Aug	114	61	53.5	Grid 933276				
	Aug	68	12	17.7	Grid 897258				
	Aug	179	63	35.2	Grid 952298 - Tag 634				
	Aug	132	1	0.75	Nest 108 - Tag 637				
	Aug	82	50	60.9	Nest 110 renest 661 - Grid 932286				
	Aug	103	99	96.1	Nest 112 renest 640 - Grid 882245				
	Aug	118	56	46.6	Nest 114 Grid 922279, 1.7 mi N. Risley Pier				
	Aug	71	65	91.4	Nest 115 Grid 871238, renest 645				
	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				
	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				
	Aug	98	56	57.2	Camp Lejeune				
1	(6)	2,844	1,252	44.0	Total Green and Loggerhead				
paga		2,426 418	1,157 95	47.7 22.7	Total Loggerhead Total Green				

Total Released - 1,581

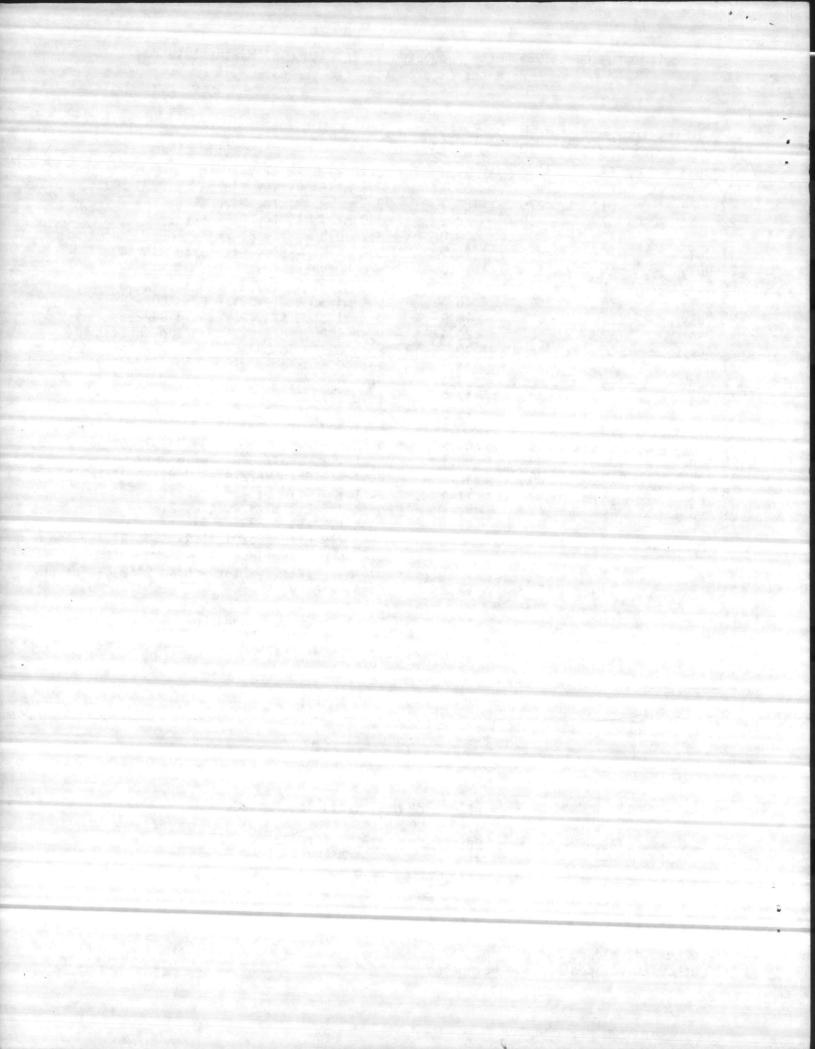
Loggerhead - 1,329 84.1% 93.8%

89 Green

# 1979 Camp Lejeune Data - 21 Nests (all loggerheads)

Total Eggs Lain	<u>Hatched</u>	%	Released	%
2,572	1,378	53.6	1,357	98.5
% Hatch Ranged:	0.8-99.2			

<sup>\*67</sup> others developed but did not hatch. \*\*44 others developed but did not hatch.



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

CHARLES D. PETERSON
Sup rvisor, Wildlife Management

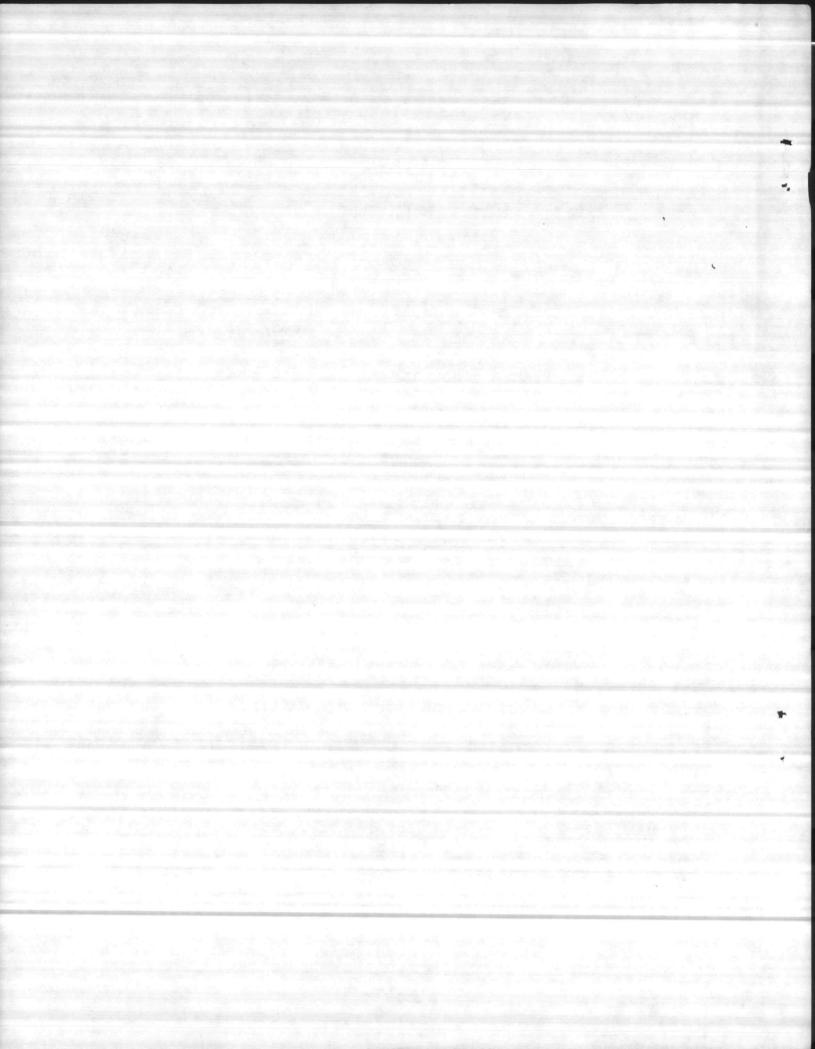
DR. FRANK B. SCHWARTZ
Advisor
Institute of Marine Science
Morehead City, North Carolina

JOHN A. FRIDELL

2

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
Tagging Adult Turtles
Collection of Nesting Data
Insitu Weather Observations

Aerial Surveys

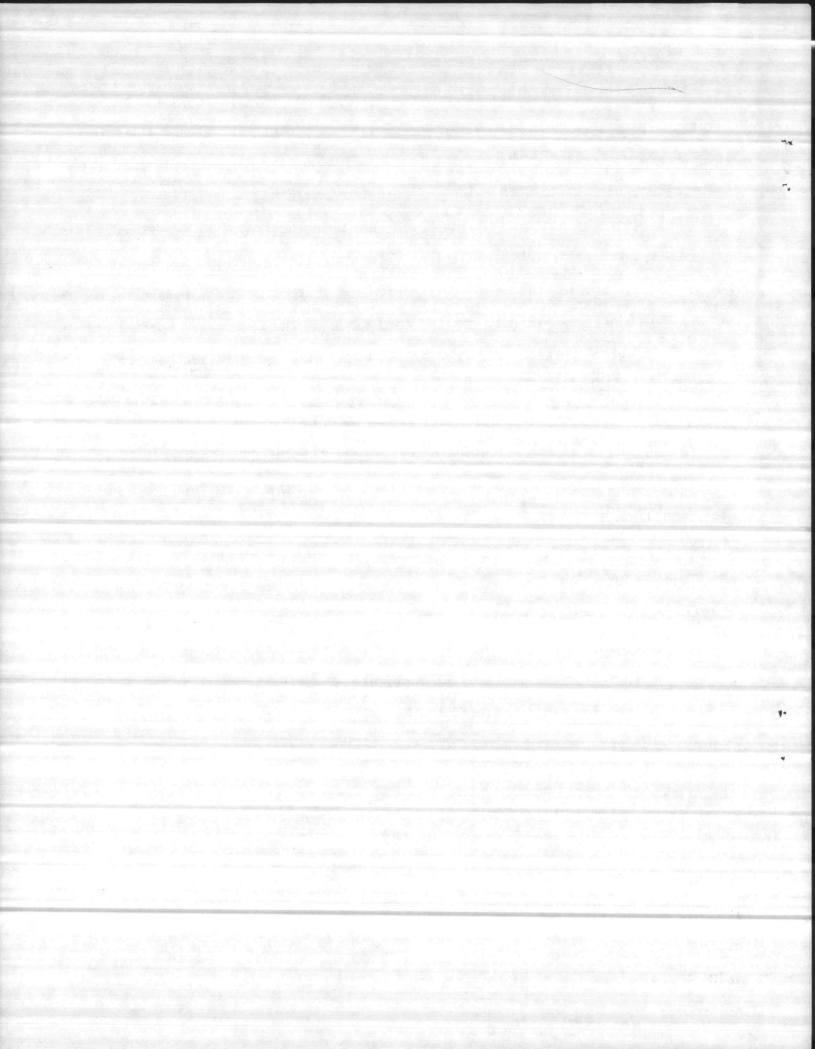
Nesting and Hatching Success

Occasional Hatchling Tagging

Stranding Reports on Dead Turtles

The University of North Carolina Institute of Marine 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

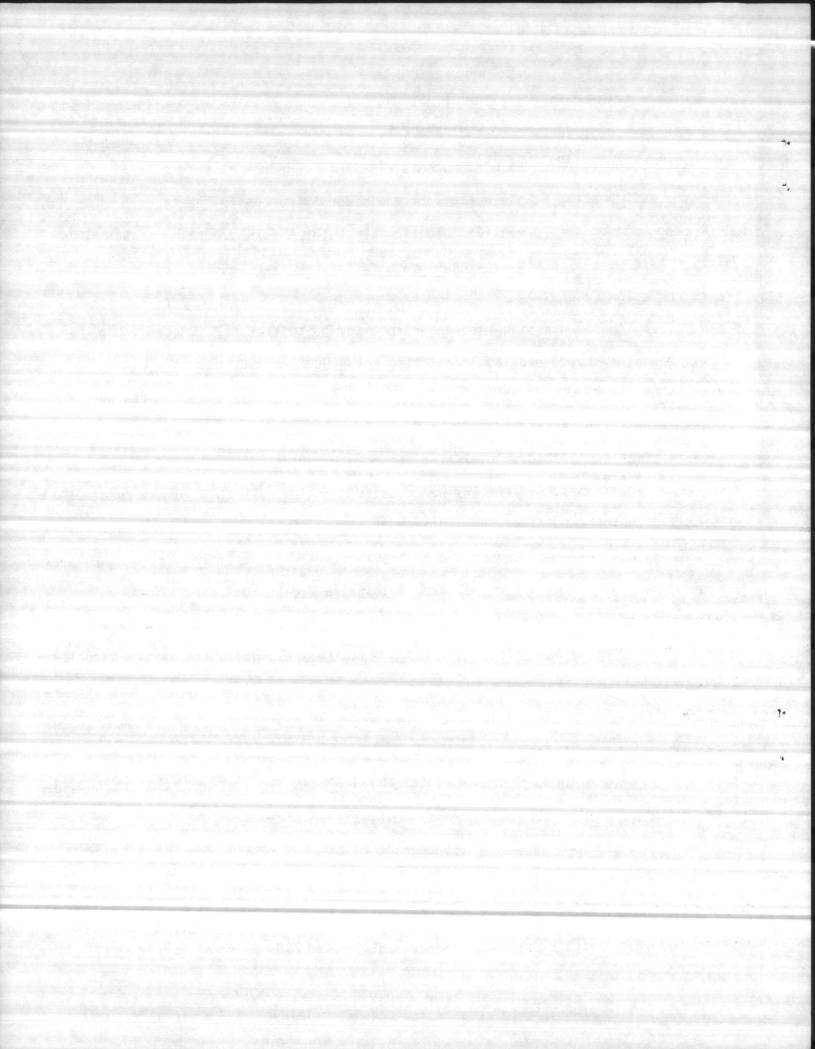
The nesting season for 1980 began with the first nest on 30 May 1980 and ended with the last nest on 25 August 1980. There were a total of 125 crawls to nest on Onslow Beach of which 65 were successful. This compares closely to the data from the 1979 nesting season where 138 crawls and 63 successful 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. NCOOO1 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 5,554 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

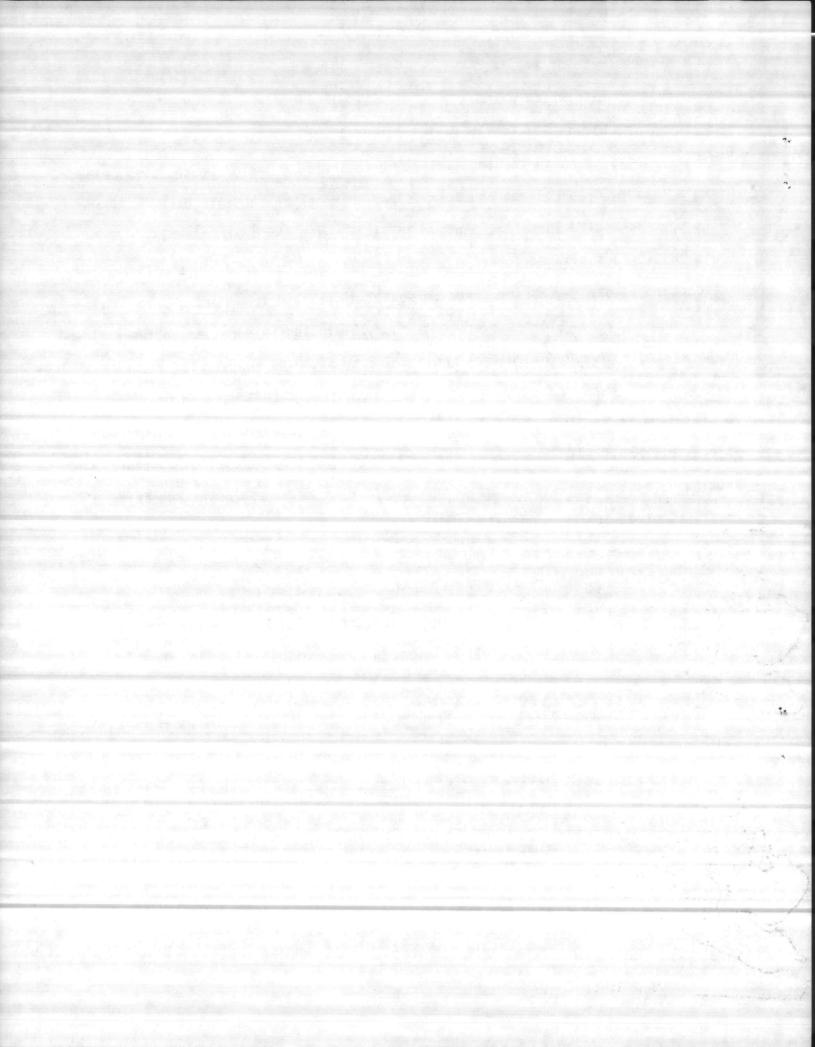


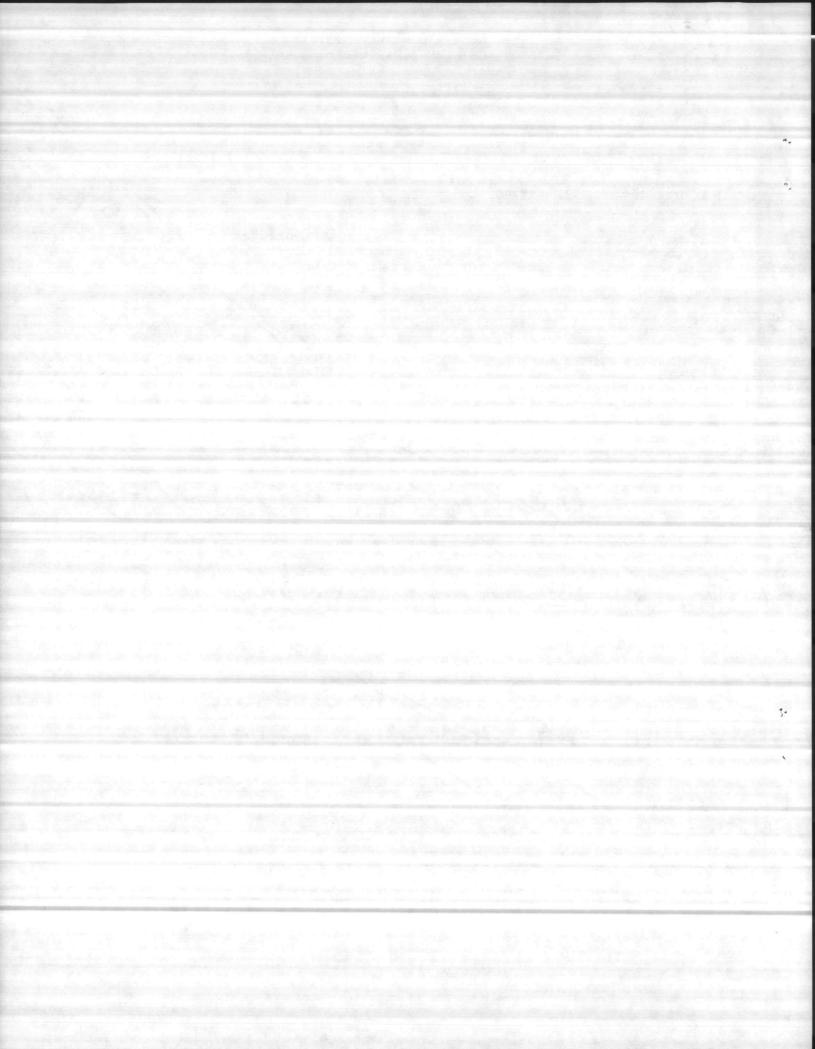
year's success rate of 67.96%. This overall success ate is better than the 1979 season success rate which was 57%.

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).





KEY

Nests
False Crawls
Turtles Sighted Off Coast

Onslow Beach

New River Inlet

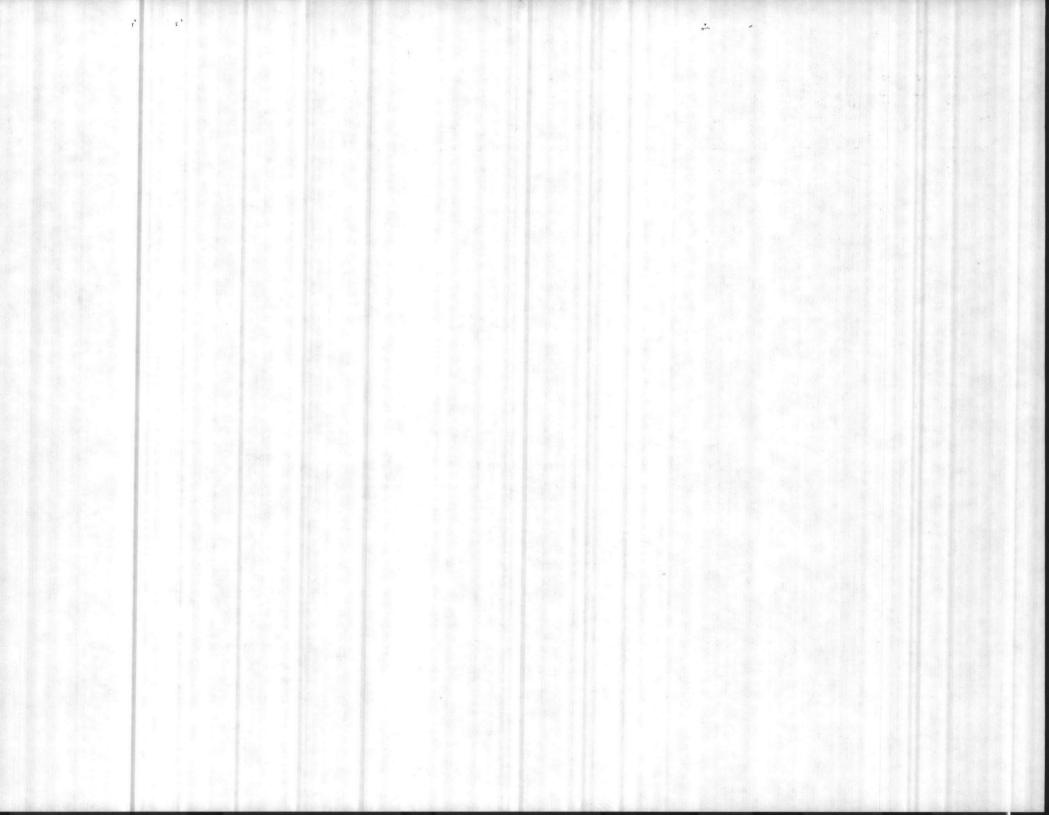


TABLE I
CRAWL INFORMATION IN RELATION TO MOON AND TIDE CYCLES AND WEATHER CONDITIONS
(Nights handled as a whole not broken at midnight)

DATE	Moon Rise	Time of	Time Crawl	Time Crawl			Ten	
Night of	% Illumin	Hi Tide	W/O nest	W/ nest	Total		H <sub>2</sub> 0	Air
5-30-80	100	-		1	1	Fair	20.5°C	19°C
5-31-80					0			
6-01-80	2151-95%	2130			0		Eleganis en Se	
6-02-80	2241-90%	2216		1	1	Fair Sctr	<sup>1</sup> 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		State of the state	
6-06-80	0125-51%	0207			0			78.4.185.45
6-07-80	0203-40%	0311		in the same of	0			
6-08-80	0242-29%	0412			0			130
6-09-80	0323-19%	0512	1		1		e plant i	
6-10-80	0407-11%	0607			0			
6-11-80	0455–05%	1835 0701	1	2	3	Fair Partly Cloudy	24.9°C	-
6-12-80	0547-01%	1926 0752			0			
6-13-80		2015	1		1			
6-14-80	0642-02%	2012	2		2	o tapiko (1)		
6-15-80	0742-06%	2147			0			
6-16-80	0837–11%	2231		2100	0	Fair		
6-17-80	0934-18%	2317		2250	2	Few Clouds	24°C	22°C
6-18-80	1030-27%	0005	2000 PM		0	Cool, Windy Cloudy Fair	24°C	20°C
6-19-80	1125–36%	0053	2345	2345	2	Clear Fair	24.5°C	24°C
6-20-80	1219-45%	0144	2300	2210	2	Cloudy	24°C	22.5°C
6-21-80	1313-55%	0237	2300	2300 2300	2	entropy and the second		
6-22-80	1407-64%	0330	er en	-	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

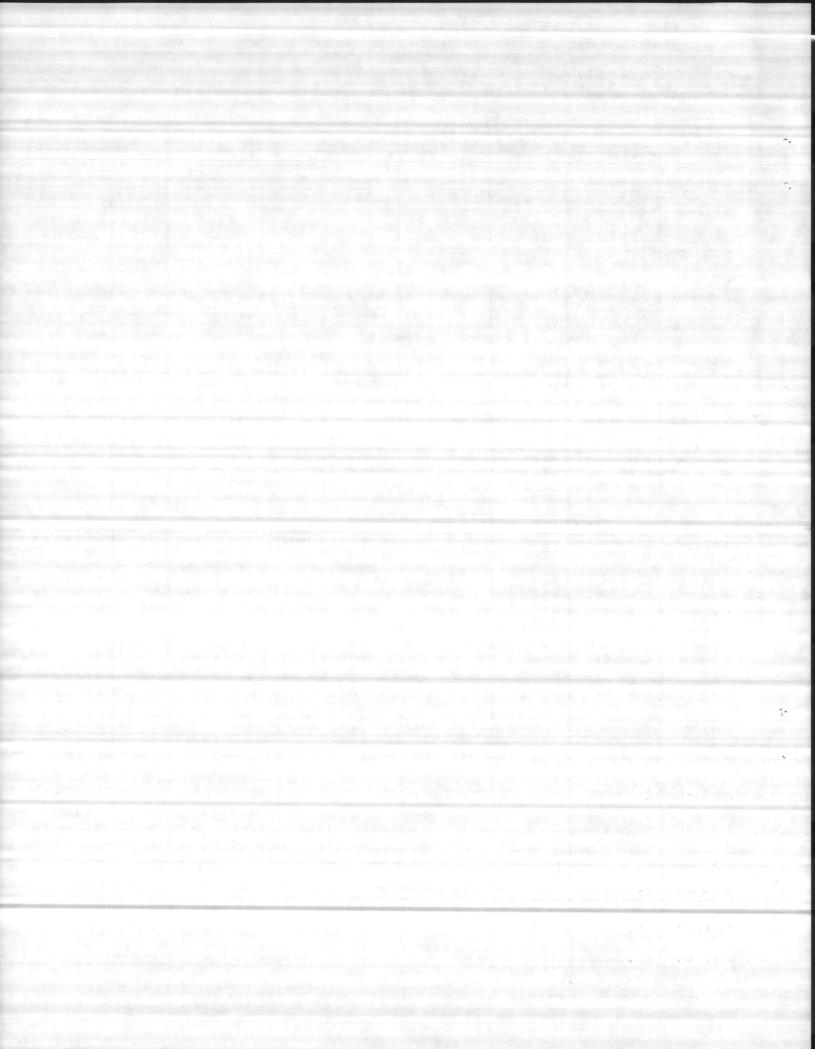


TABLE I
CRAWL INFORMATION IN RELATION TO MOON AND TIDE CYCLES AND WEATHER CONDITIONS
(Nights handled as a whole, not broken at midnight.)

DATE	Moon Rise	Time of	Time Crawl	Time Crawl			Tem	p
Night of	% Illumin	Hi Tide	W/o nest	W/ nest	Total	Weather	H <sub>2</sub> 0	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 Fair &	24°C	23.5°C
6-27-80	1850-98%	0723	2200	2245	2	Clear Fair &	24°C	24°C
6-28-80	1945–100%	1943		2200	0	Clear Fair &	24°C	26°C.
6–29–80	2037–99%	2028		6638 6100	3	Cloudy Fair &	25°C	26°C
6-30-80	2125-97%	2114	2115		1	Cloudy Fair &	24°C	22.5°C
7–1–80	2209-92%	2201	0030		2	Clear Fair &	24°C	24°C
7–2–80	2249-85%	2251	0215		1	Clear 2360 Thunderstm	26°C	27°C
7–3–80	2328-75%	2346	2245	2230 2300	2	Clearing Cloudy, Occ.	24.5°C	23°C
7-4-80	0005–65%	0043		2300 2300 2300	3	Showers Fair &	24.5°C	24°C
7-5-80	0043-54%	0148		2400	1	Clear Fair & Ptly	26°C	26°C
7-6-80	0122-42%	0253	2345	2310	3	Cloudy Fair &	26°C	26°C
7-7-80	0203–31%	0356	0230	2340	3	Clear Fair &	24.5°C	26°C
7-8-80	0248-27%	0457		0200	1	Cloudy ThundStm	26°C	26°C
		1820	0015 0115			2200		
7-10-80	0431-6%	0645 1910	0030 0335	2345	5	Clearing240 Fair &	26°C	23°C
7-11-80	0527-2%	0734	2340	0200	2	Clear Fair &	26.5°C	26°C
7-12-80	0624-0%	1957	0140 0115		0	Clear Fair & Ptly	26°C	27°C
7-13-80	- 1%	2038	0140 2320	0250 2315	4	Cloudy Fair &	26.5°C	24.5°G
7-14-80	0722-03%	2120	2310 2340 2340	0040	4	Clear Fair &	26°C	25°C
7-15-80	0819-08%	2201	2350 0215	0330	4	Clear Fair &	25.5°C	25.5°C
7-16-80	0914–14%	2242	0315 2240	2345	5	Clear Fair & In-	26°C	26°C
-17-80	1009-21%	2323	0400	0245	3	crsg Clouds Fair & Ptly	27.5°C	26°
-18-80	1103-29%	0006	2200	0305	1	Cloudy Fair &	27°C	26°
-19-80	1156-38%	0057	2200 0100 0200		3	Clear	27°C	27.5°C

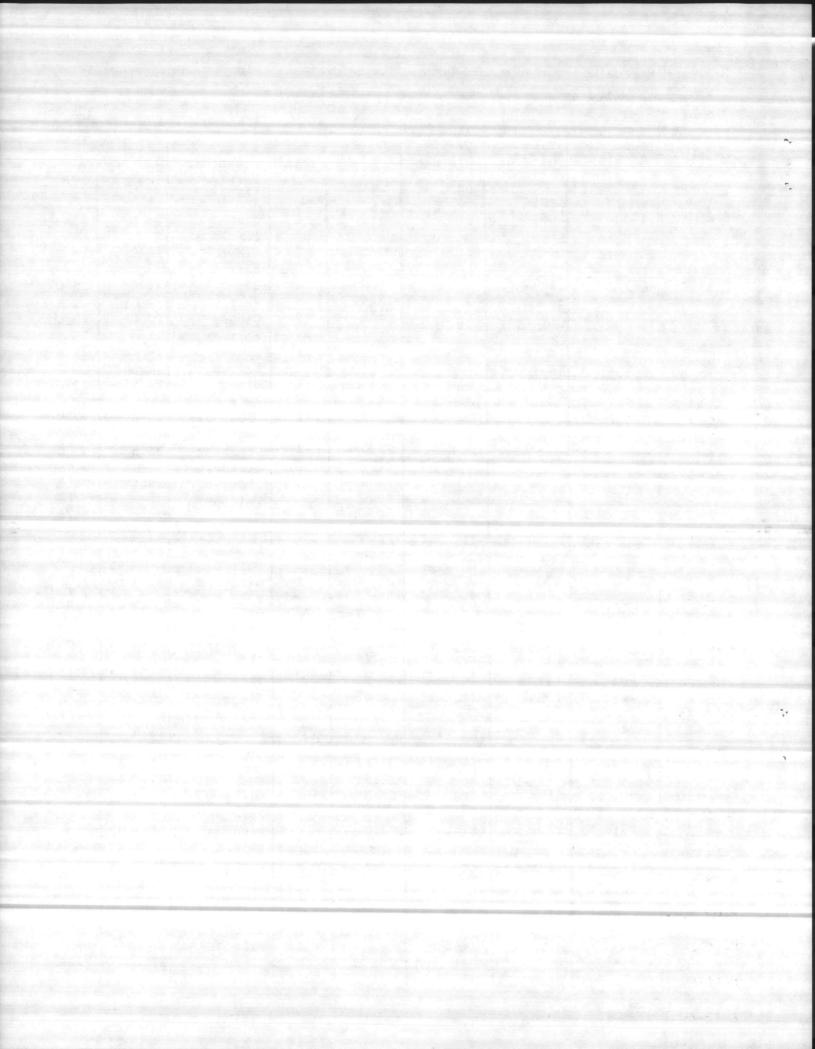


TABLE I
CRAWL INFORMATION IN RELATION TO MOON AND TIDE CYCLES AND WEATHER CONDITIONS
(Nights handled as a whole, not broken at midnight.)

DATE Night of	Moon Rise % Illumin	Time of Hi Tide	Time Crawl W/O nest	Time Crawl W/ nest	Total	Weather	Temp	Air
					10001		-	
7-20-80	1250-48%	0149	2200	2330 0330	3	Fair & Clear	27°C	28.5°C
7-21-80	1345–57%	0241		0040	0	Fair & Incrs Cloudiness Fair &	27.5°C	27 <sup>0</sup> C
7-22-80	1442-67%	0338		0035	2	Cloudy	27°C	27°C
7-23-80	1539-76%	0431		0030	1	Rainy Fair &	25°C	25°C
7-24-80	1639-84%	0521		2215	1	Cloudy Fair &	26°C	26°C
7-25-80	1733-91%	0612	2200	2215	1	CLoudy	26°C	26.5°C
7–26–80	1827–96%	1835 0658	2200 1835 0200			00-2400 Rainy 200 Thundstms		24.5°C
7-27-80	1917–99%	1922 0745	2200 2210 2200 2230		4	Heavy Rain	and the second	
7-28-80	Full 2004–100%	2009	-40 m 22 m	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 2000-2200	27.5°C	27.5°C
8-01-80	2224-77%	2328	0315	2200 2200 0245	4	Thunderstorm 2400 Clearin	<sub>g27</sub> °c	26.5°C
8-02-80	2323-67%	0026	and the state of t	2330 8365	3	Fair & Clear	27°C	28°C
8-03-80	0003/44%	0129	2		2		-	<b>-</b> -
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				Clear Partly	27°C	28°C
8-07-80	0318-8%	0540 1806	2400 2300	2245	-1	Cloudy Fair &	27°C	26.5°C
8-08-80	0414-3%	0630 1852	0200	2315		Clear	27°C	27.5°C
8-09-80	0511-1%	0715 1934			0			
8-10-80	0608-0%	0758		2	2	Fair &		
8-11-80		2013				Clear	27°C	27.5°C
8-12-80	0705–1%	2052		0230	1	Cloudy	27°C	27°C

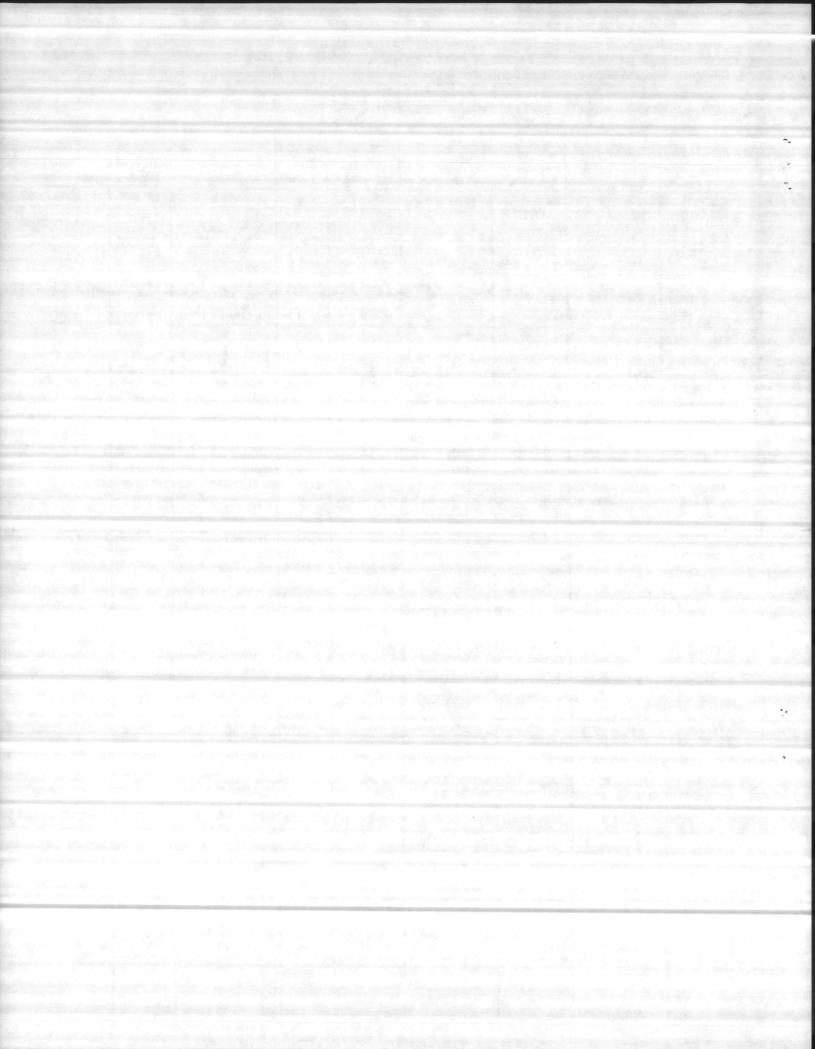
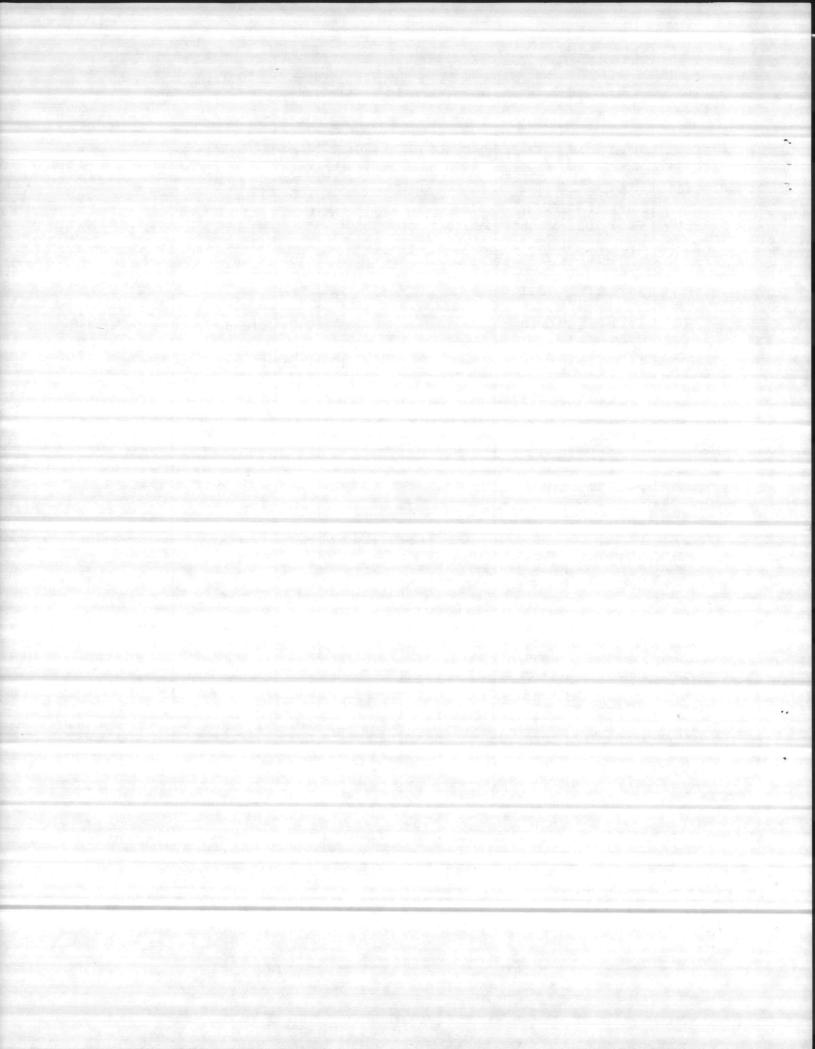


TABLE I
CRAWL INFORMATION IN RELATION TO MOON AND TIDE CYCLES AND WEATHER CONDITIONS
(Nights handled as a whole not broken at midnight)

Date Night of	Moon Rise % Illumin	Time of		Time Crawl W/ nest	Total	Weather	Temp H <sub>2</sub> O	Air
8-13-80	0800-5%	2129	No. 1 September 1		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	er etano. La regiona de pres		0	alak Signo Pelebara		
8-22-80	1613-79%	0258	1	(1) (1) (1) (1) (1)	1	Fair & Clear	25°C	23°C
8-23-80	1705-87%	0356		2 (1) (1) (1) (1) (1) (1) (1) (1) (1) (1)			*101	
8-24-80	1754-94%	0452	0100		1	Fair & Clear	23°C	19°C
			between	between.		Fair &	(146 g)	
8-25-80	1839–98%	0543 1721	2200-2400	2200–2400	2	Clear	23°C	19°C
8-26-80	1922-100%	0634 1859						
8-27-80	2002-99%	0723 1948					- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	
8-28-80	2042-95%	0812						
8-29-80	2121-88%	2036						
8-30-80	2202-80%	2125						
8-31-80	2245-69%	2216		l				



## TABLE II RETURN RECORD OF TAGGED TURTLES

#### 1980 SEA TURTLE INVENTORY

DATES 4/17/80-8/9/80

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(8)	7/15/80 ⊗	7/28/80	8/8/80
			Retag 640		
Green		The state of the s			0
6/25/80	657*	7/9/80	7/21/80	8/2/80	8/17/80
	er in Assayl (45 e)	Retag 669	Retag 649		
6/26/800	NC0001	7/11/80⊗	7/24/80		
6/27/80\$	648	7/24/80			
6/27/80	658			and the second	
6/29/80	650	7/12/80			
6/29/80	659	7/11/00	7/14/00		
6/30/80	660	7/14/80⊗	7/16/80	8/1/80	
7/1/000	661	Retag 672	7/20/2000	0.10.100	
7/1/80 <b>Ø</b> 7/3/80	661 662	7/14/80	7/26/80	8/8/80	
7/6/80	663				
7/6/80⊗	664				
7/7/80	667	8/18/80	8/20/80	la de la companya de La companya de la co	The second second
7/8/80⊗	665	0,10,000	0/20/00		
7/8/80	666		19 te		
7/10/800	670	7/23/80			
7/11/80⊗	671				
7/14/80	673	and the second			
7/14/80	674			Section 1	
7/15/80	675				
7/17/80	641				
Seguiti And Sec.		NEW YORK STATE OF THE STATE OF	and the second second	Sin Addison St. 18	A second control of the second control of th
7/17/800	642	7/18/80			
7/18/80€	647	7/20/80	8/2/80		1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -
7/19/80	645				
7/23/80	646				
7/25/80	644				
7/30/80	633	0/14/00	Ψ		
8/1/80 0	639	8/14/80	and the design property of the constraints of		comment of the control of the state of
8/3/80	638			· 100 数据 · 100 ·	
8/5/80	634 637				
8/7/80	636	8/12/80			100
8/9/808	635	0/12/00			
0, 5, 500	0,55				

#### Tagged or

6 turtles observed 2 times; 23 turtles observed 1 time

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

<sup>2</sup> Crawl body pit and eggs indicative of Green Turtle but turtle not observed

<sup>1</sup> Turtle observed 5 times; 4 turtles observed 4 times; 3 turtle observed 3 times;

#### TABLE III

#### AERIAL SURVEY

			May	y 30	)		May	31													
*		N		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								5.0		Verber.		
	Bear Island	0	0	0	0	2	0	0	0												
														121							
			June	13	}		June	14						500							
	v. o.	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	170		July	12			Jul	y 2	1
		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		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	Ó	0	0	0	0	0	1	0	0	2		1	0	0
																- 100	• 1	en e			
			Aug	1			Aug	11			Aug	12									
		N		Т	CD				c.n.												
	Onslow Beach	0	1	0	SB 1	N 2	FC O	T 0	SB	N	FC	T	SB					, is			
	Brown's Island	2	0	0	2	3			0	1	0	0	2.								
	Bear Island	1	0	0	0	2	0	0	1 0	2	0	0	1								
	Dear Island	•	ŭ	٠	Ü	2	U	U	Ü	1	2	0	1								
			то	TAL										Sulfi-				e P			
		N	FC	T	SB									i, ita							
	Onslow Beach	7	9	4	13								14.					*			
	Brown's Island	19	4	4.	11											R3**	100,0				
	_		The second second second									Control of the Control		Carlot Carlot			- The Section 19 50	140		Contract of the second	

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

16 5 2 6

42 18 10 30

,

Bear Island

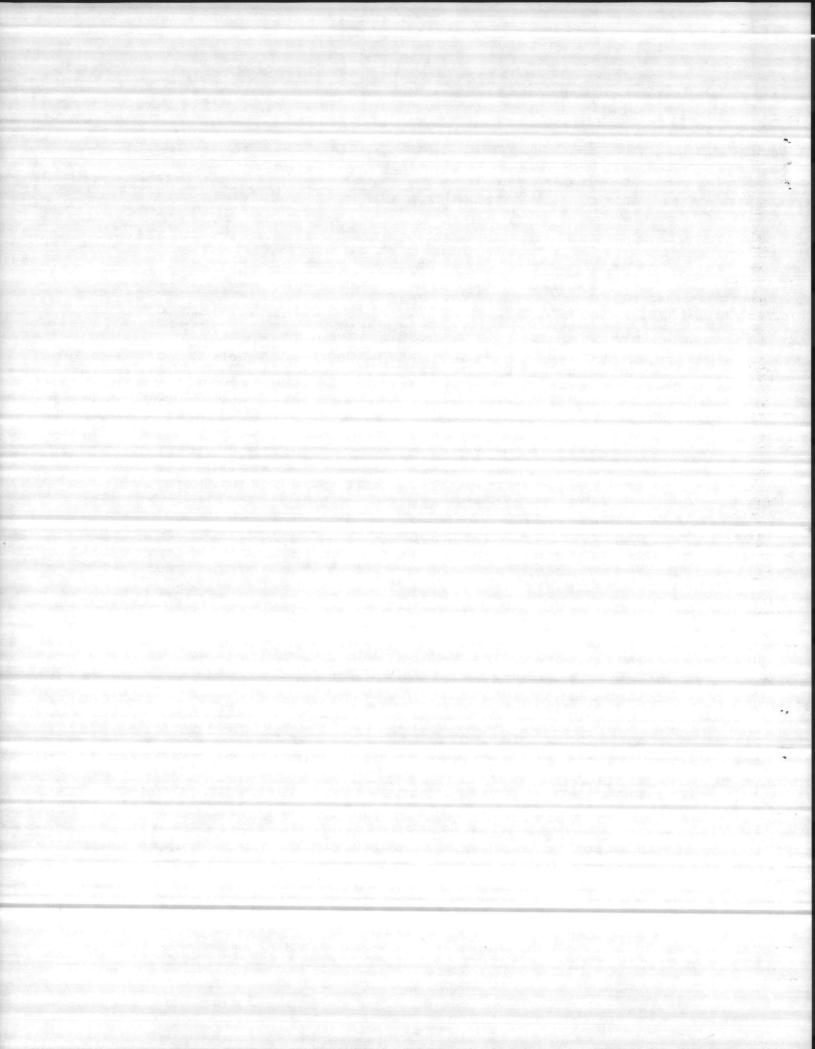


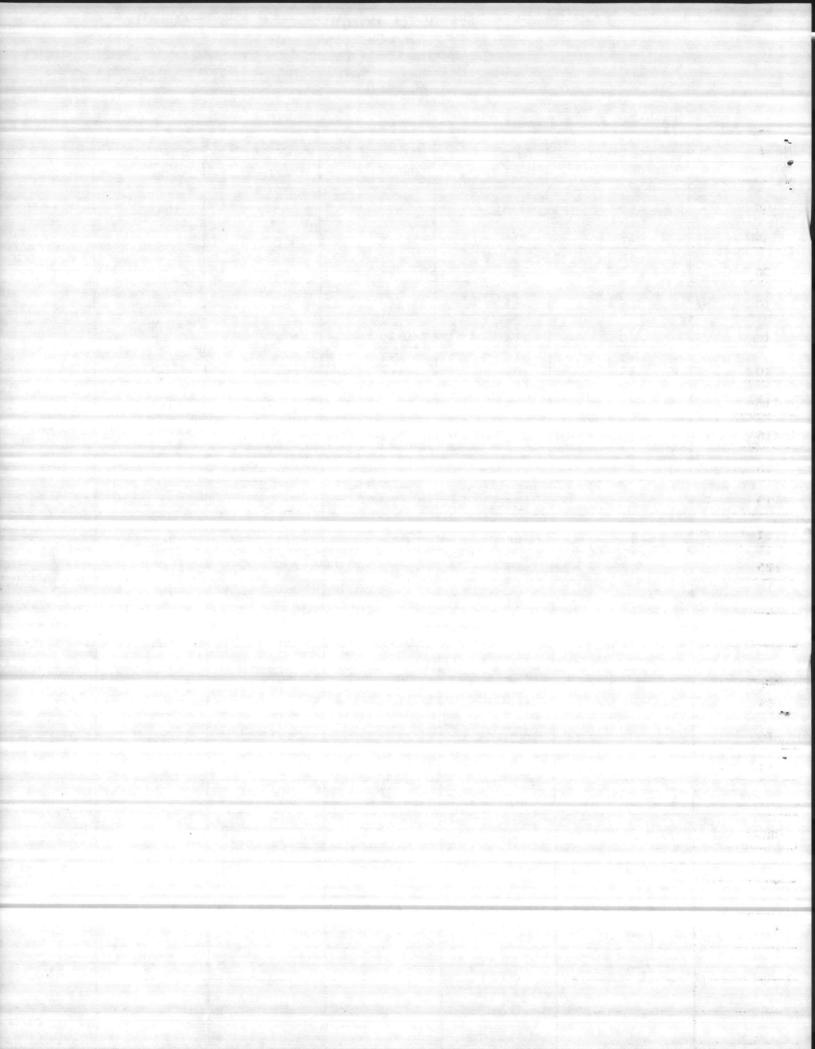
TABLE IV

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

1980

\*Green Turtle

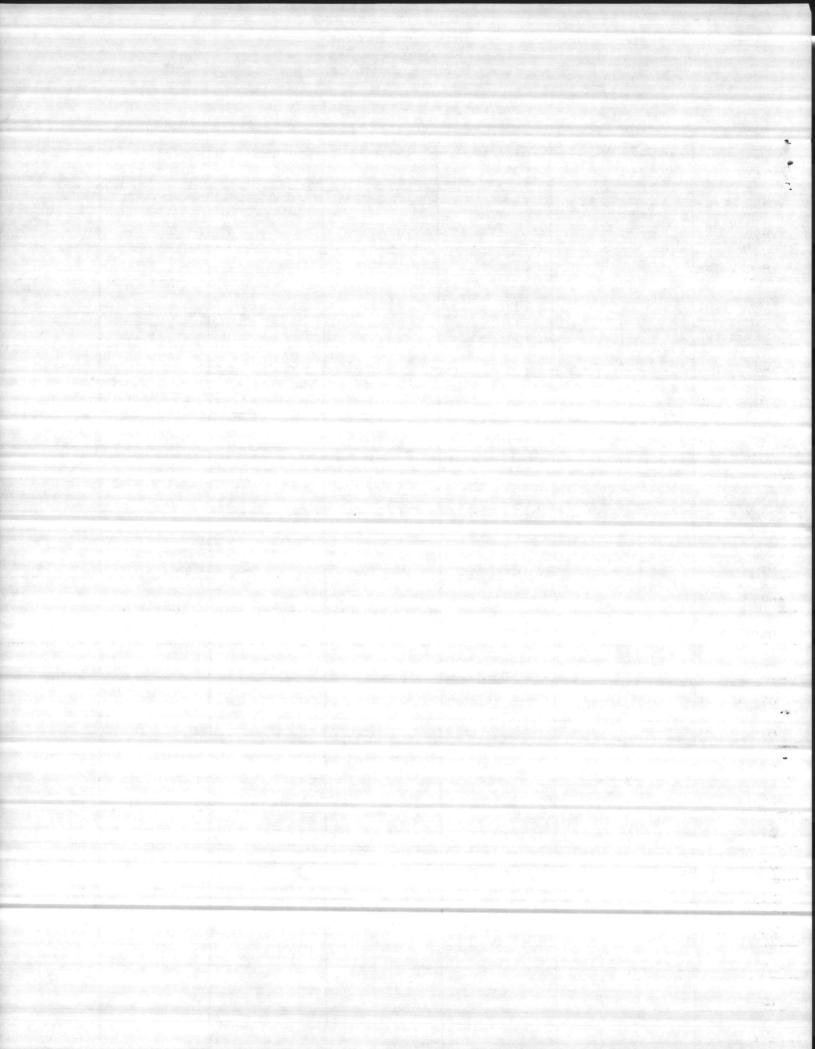
Nest No.		Incubation Period DAYS	Total Eggs	Released Young	Emerged Young	Total Young	Percent of Success
		65	115	67	39	106	92.2%
002		63	166	158	3	161	97 %
003		63	134	4	69	73	54.5%
006	IMS	69	53	24			45.3%
007			126	0	0	0	0
012		65	102	81	4	85	83.3%
013		64	175	4	119	123	70.3%
015		63	134	0	128	128	95.5%
016	IMS		121				
018	IMS		101				
019		64	86	6	75	81	94.2%
021		63	143	0	114	114	79.7%
<b>*</b> 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%



#### 1980

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

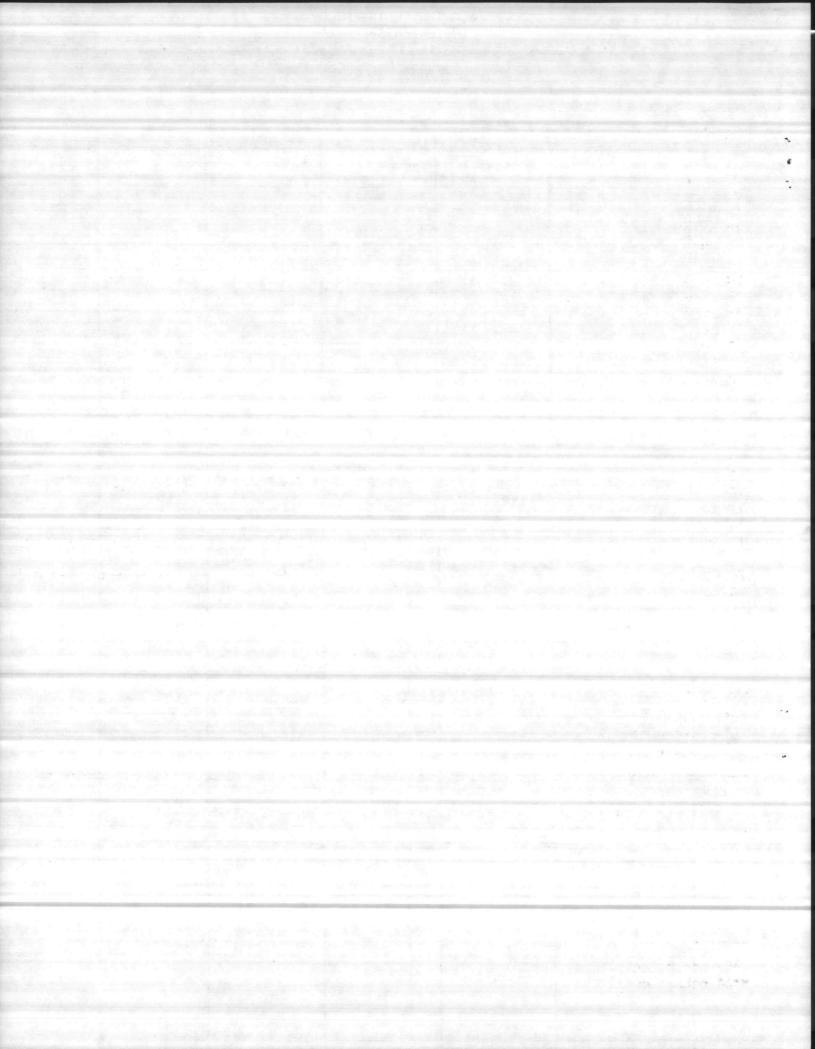
Nest No.	Incubation Period	Total Eggs	Released Young	Emerged Young	Total Young	Percent of Success
104 IMS	0	1	0	0	0	0
107 IMS	Property of	179				- 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2
108 IMS		134				
110 IMS		104				
112 IMS		104				
114 IMS		120				
115 IMS	T Kanada Sanada San	80				
116 IMS		83				
118 IMS		112	and the second and the			
*119 IMS		145				
121 IMS		75				
125 IMS		99				
	To	TALS				
64		7352				
26 IMS		2823				
37 ОВ		4529				
GREEN TURTI	E	819	(11.14% OF	TOTAL)	and the second s	
,						
						11,142,00
						-



### 1980

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

Nest No.	Incubation Period	Total Eggs	Released Young	Emerged Young	Total Young	Percent of Success
. 048 IMS		124			2.403	
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	(200) - 1998 - 1998 - 1998 - 1998 - 1998 - 1998 - 1998 - 1998 - 1998 - 1998 - 1998 - 1998 - 1998 - 1998 - 1998 - 199	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	and the second second	96				
083	AND THE RESERVE OF THE PERSON	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	The second secon	78				
*100 IMS		157				
102 IMS		114				14.62753
103 IMS		78				当中的
						I was an a second of the



. D	ate	Nun	mber		
L	ain_	Lain	Hatched	% Hatch	<u>Locality</u>
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
	July	120	43**	26.7	0.8 mi S. Risley Pier Grid 843254
	July	166	10	.006 →	green turtles
	July	96	94	98.0	0.8 mi S. Risley Pier Grid 892255
	July	128	52	40.6	0.4 mi S. Risley Pier Grid 897258
	July	101	11	10.9	0.8 mi S. Risley Pier Grid 892255
	Aug	157	32	20.4	Nest 100 Grid 916275 - green turtles
	Aug	75	68	90.7	Nest 099 Grid 894257
	Aug	114	39	34.2	Nest 098 Grid 917275
	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
	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
	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
	Aug	98	56	57.2	Camp Lejeune
		2,844	1,252	44.0	Total Green and Loggerhead
		2,426 418	1,157 95	47.7 22.7	Total Loggerhead Total Green

Total Released - 1,581

#### 1979 Camp Lejeune Data - 21 Nests (all loggerheads)

Total Eggs Lain	<u>Hatched</u>	_%_	Released	_%
2,572	1,378	53.6	1,357	98.5
% Hatch Ranged:	0.8-99.2			

<sup>\*67</sup> others developed but did not hatch. \*\*44 others developed but did not hatch.

Loggerhead - 1,329 84.1%

Green 93.8%

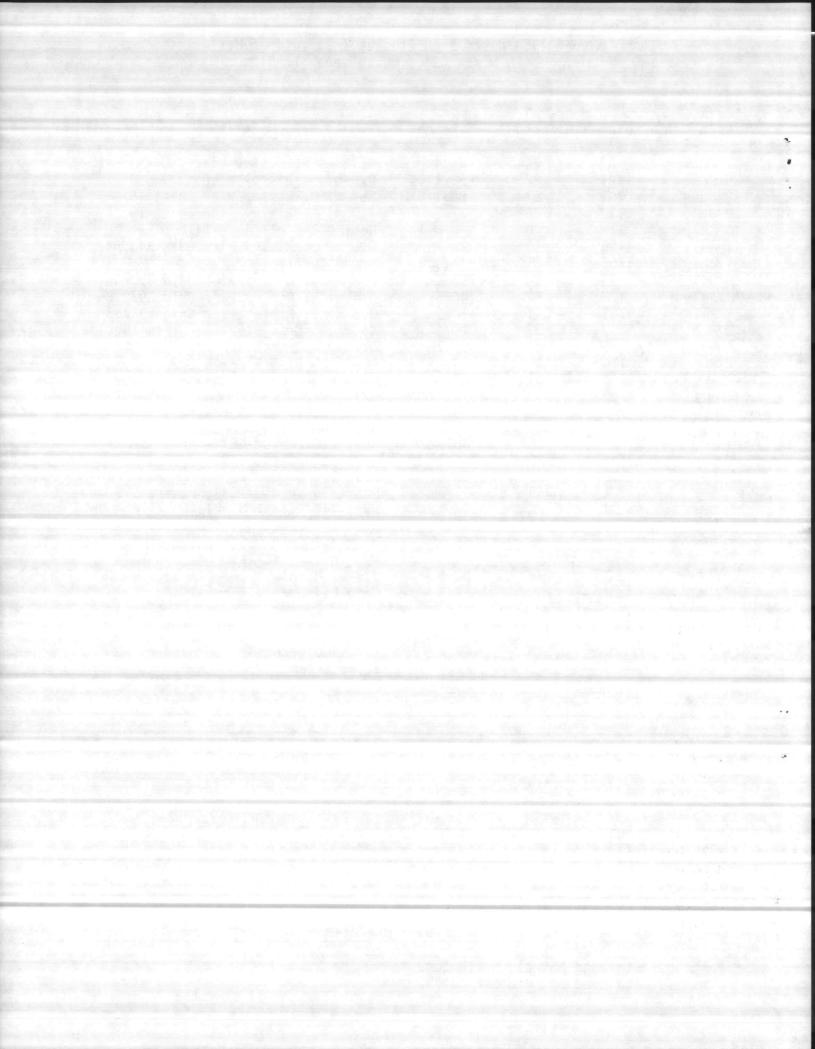


TABLE V
Ground Survey Numbers

Date	Crawls No Nest	Crawls/Nest	Total Crawls	
5-30-80		1		
6-2-80		1	1	
6-4-80	1	1		
6-9-80	1		2	
6-11-80	į	2	1	
6-13-80	ī		3	
6-14-80	2		1	
6-17-80			2	
6-19-80	1	2	2	
6-20-80	1	1	2	
6-21-80	1	1	2	
6-22-80	•	1.	2	
6-25-80		2	2	
6-26-80	•	1	1	
6-27-80	2		2	
6-29-80	1	1	2	
6-30-80	•	2	2	
7–1–80	1	1	2	
7-2-80	1		1	
7-3-80	2		1	
7-4-80		1 3	3	
7-5-80		집 그 이 이 있는 일이 느면하면 없다면 하시다. 그리다.	3	
7–6–80	1	1	1	
7-7-80		2	3	
7-8-80	2	1	1 2	
7-9-80		1		
7-10-80	1	1	2	
7-11-80	5		5	
7-12-80		1		
-14-80	5	2	1	
-15-80	3	<b>.</b>		
-16-80		1	4	
-17-80	. 3	3	3	
-18 <b>-</b> 80	. 3		4	
		1	2	
-19-80		1	2	
-20-80	3	1	4	
-21-80		1	1	
-23-80		2	2	
-24-80		2	2	
-25-80		1	1	
-26-80	2		2	
-27-80	5		5	
-28-80		2	2	
-30-80		1	1	

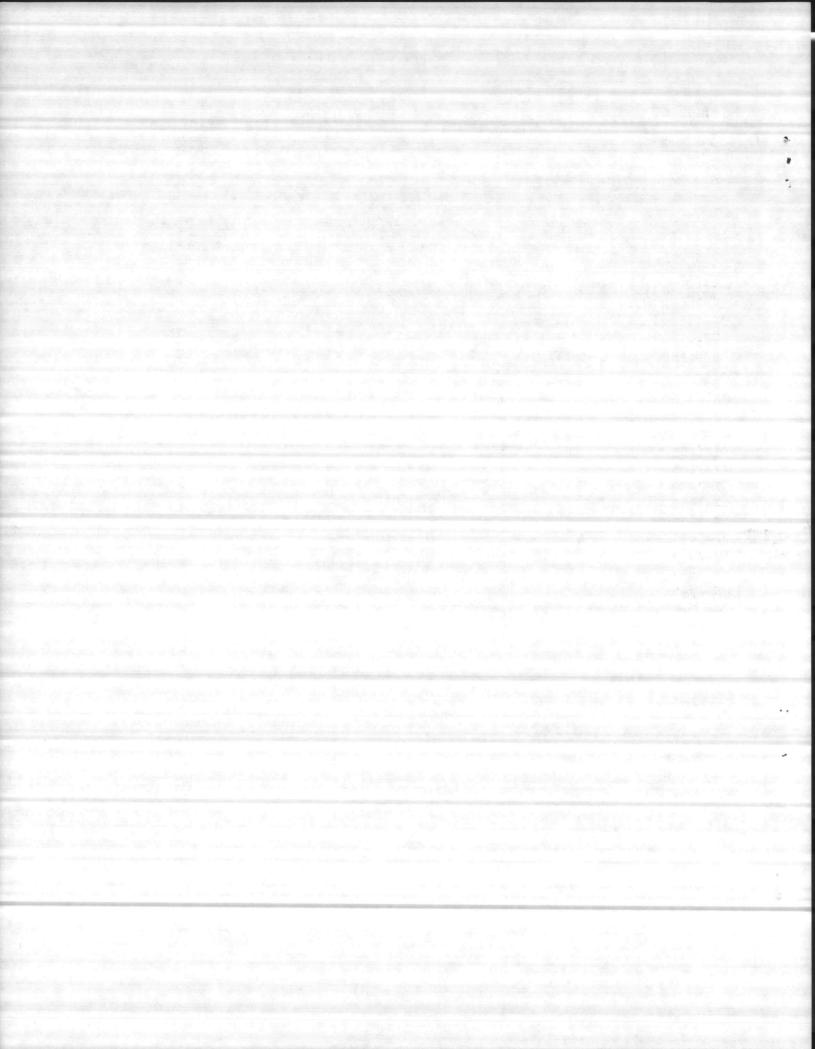
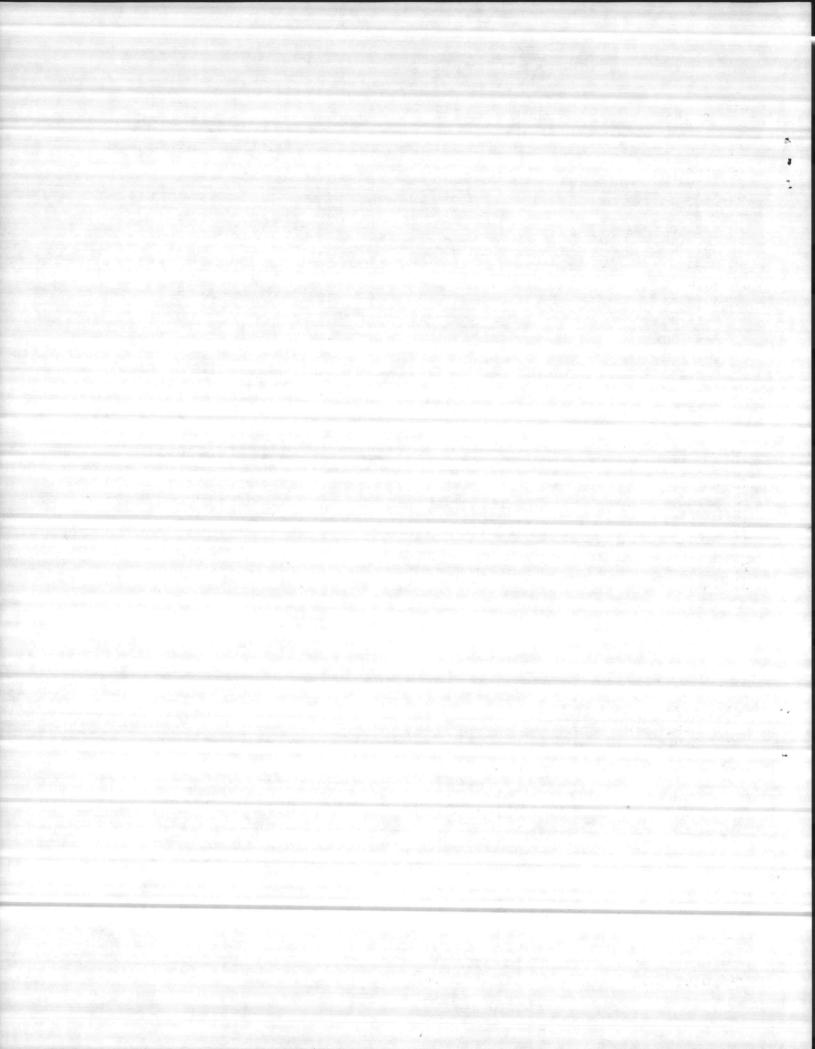


TABLE V.

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
3-27-80			0
3-28-80			0
3-29-80			0
3-30-80			0



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

Da	ite	Num	rber		
	in_	Lain	Hatched	% Hatch	<u>Locality</u>
11	June	54	24	44.4	0.15 mi S. Risley Pier
20	June	77121	82	68.1	0.6 mi S. Risley Pier
22	June	101	87	86.1	2.7 mi N. Risley Pier Sheet 16
1	June	117	26*	22.2	1.0 mi S. Risley Pier Sheet 16
	July	119	0	0.0	Nest 048 - all infertile
	July	120	43**	26.7	0.8 mi S. Risley Pier Grid 843254
	July	166	1	.006	green turtles
	July	96	94	98.0	0.8 mi S. Risley Pier Grid 892255
	July	128	52	40.6	0.4 mi S. Risley Pier Grid 897258
	July	101	11	10.9	0.8 mi S. Risley Pier Grid 892255
	Aug	157	32	20.4	Nest 100 Grid 916275 - green turtles
	Aug	75	68	90.7	Nest 099 Grid 894257
	Aug	114	39	34.2	Nest 098 Grid 917275
	Aug	114	61	53.5	Grid 933276
	Aug	68	12	17.7	Grid 897258
	Aug	179	63	35.2	Grid 952298 - Tag 634
4.2	Aug	132	1	0.75	Nest 108 - Tag 637
	Aug	82	50	60.9	Nest 110 renest 661 - Grid 932286
	Aug	103	99	96.1	Nest 112 renest 640 - Grid 882245
10		118	56	46.6	Nest 114 Grid 922279, 1.7 mi N. Risley Pier
10	-	71	65	91.4	Nest 115 Grid 871238, renest 645
12 /	-	82	76	92.7	Nest 116 2.1 mi N. Risley Pier - Grid 928284
14 /		110	54	49.1	Nest 118 retag 639 1.53
17 /	_	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 /		98	56	57.2	Camp Lejeune
~~ .	109			CHARLESTON	
		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

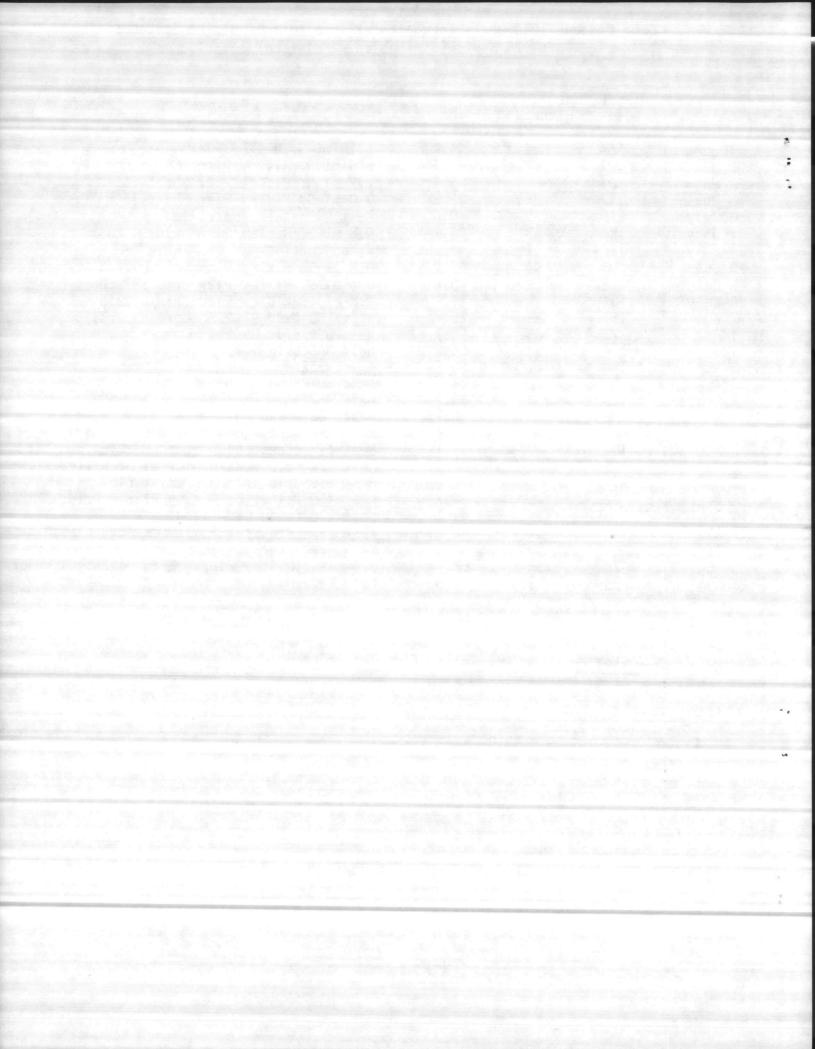
" Loggerhead - 1,329 84.1%

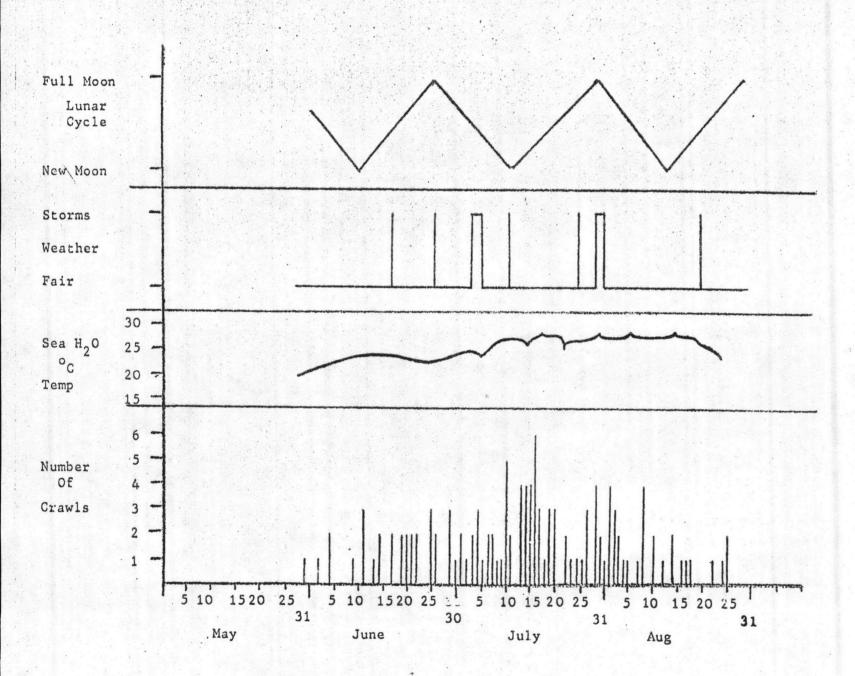
" Green - 89 93.8%

#### 1979 Camp Lejeune Data - 21 Nests (all loggerheads)

Total Eggs Lain	Hatched	2	Released	ey 20
2,572	1,378	53.6	1,357	98.5
% Hatch Ranged:	0.8-99.2			on a set the section

<sup>\*67</sup> others developed but did not hatch. \*\*44 others developed but did not hatch.

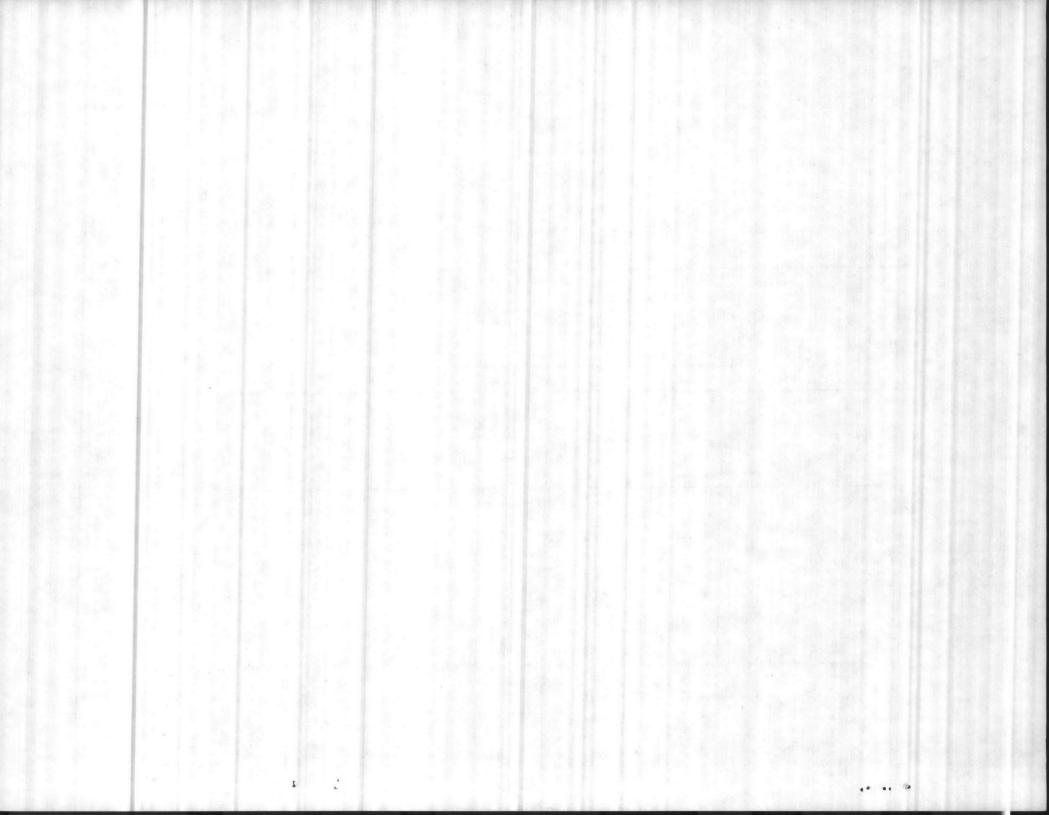


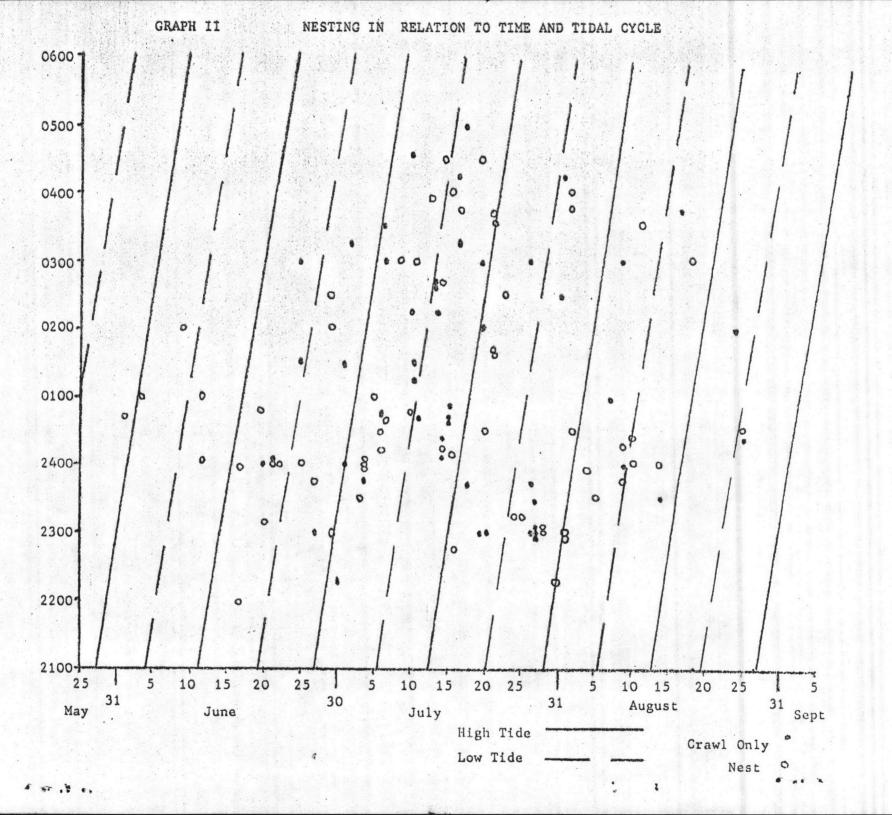


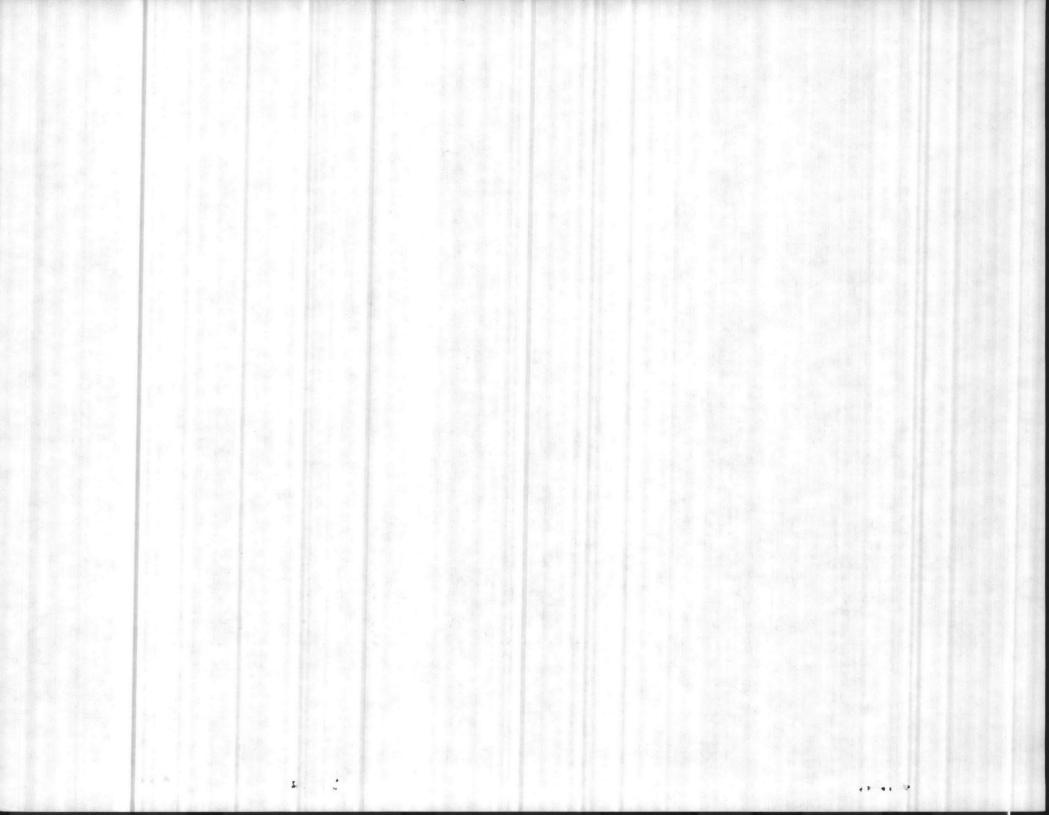
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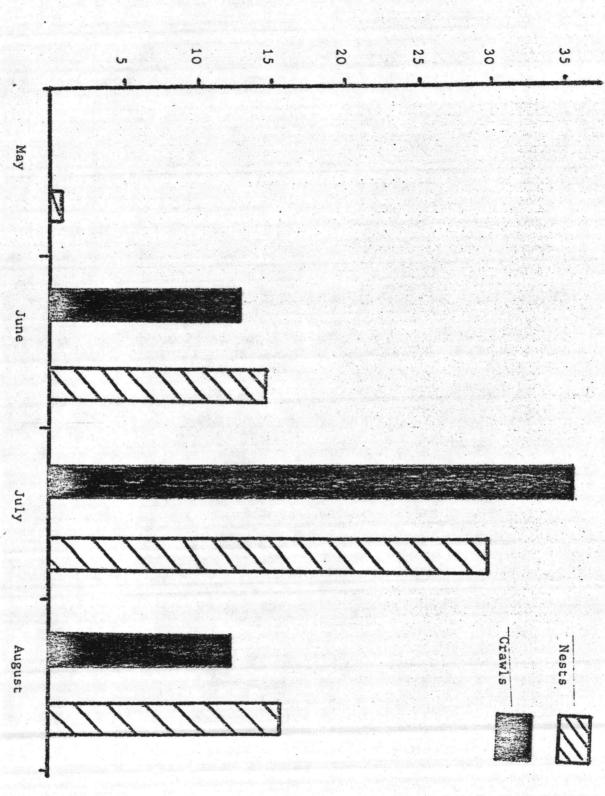
. 44

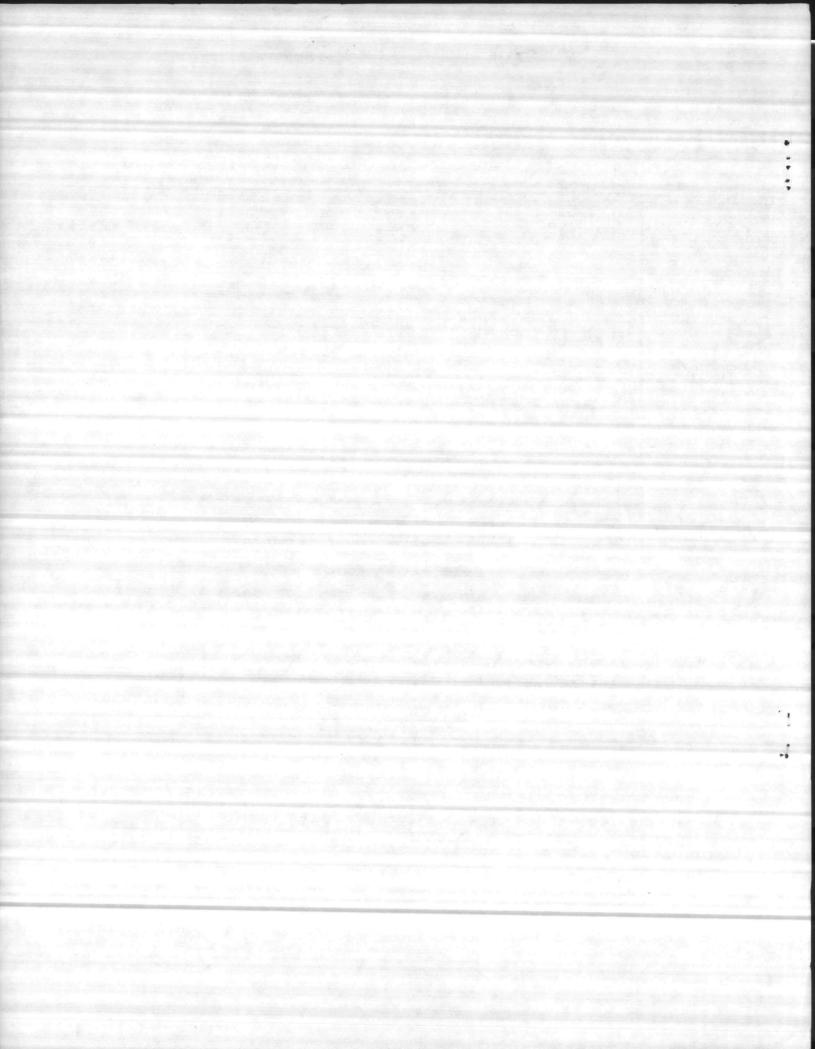






TOTAL CRAWLS AND NEST BY MONTH 1980 NEST SEASON





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

Date	Number ·					
Lain	Lain	Hatched	% Hatch	<u>Locality</u>		
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	2 101	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

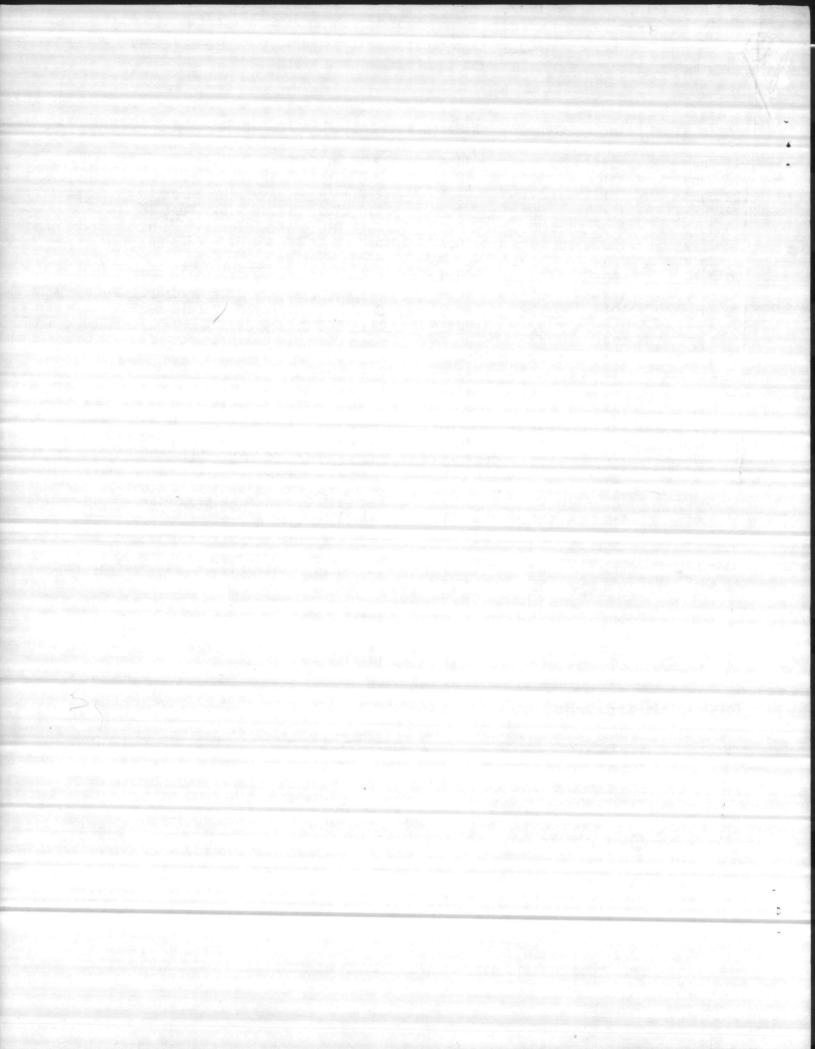
Loggerhead - 1,329 84.1%

93.8% Green

### 1979 Camp Lejeune Data - 21 Nests (all loggerheads)

Total Eggs Lain	<u>Hatched</u>	%	Released	<u>%</u>
2,572	1,378	53.6	1,357	98.5
% Hatch Ranged:	0.8-99.2			

<sup>\*67</sup> others developed but did not hatch. \*\*44 others developed but did not hatch.



## TABLE II RETURN RECORD OF TAGGED TURTLES

#### 1980 SEA TURTLE INVENTORY

DATES 4/17/80 - 8/9/80

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

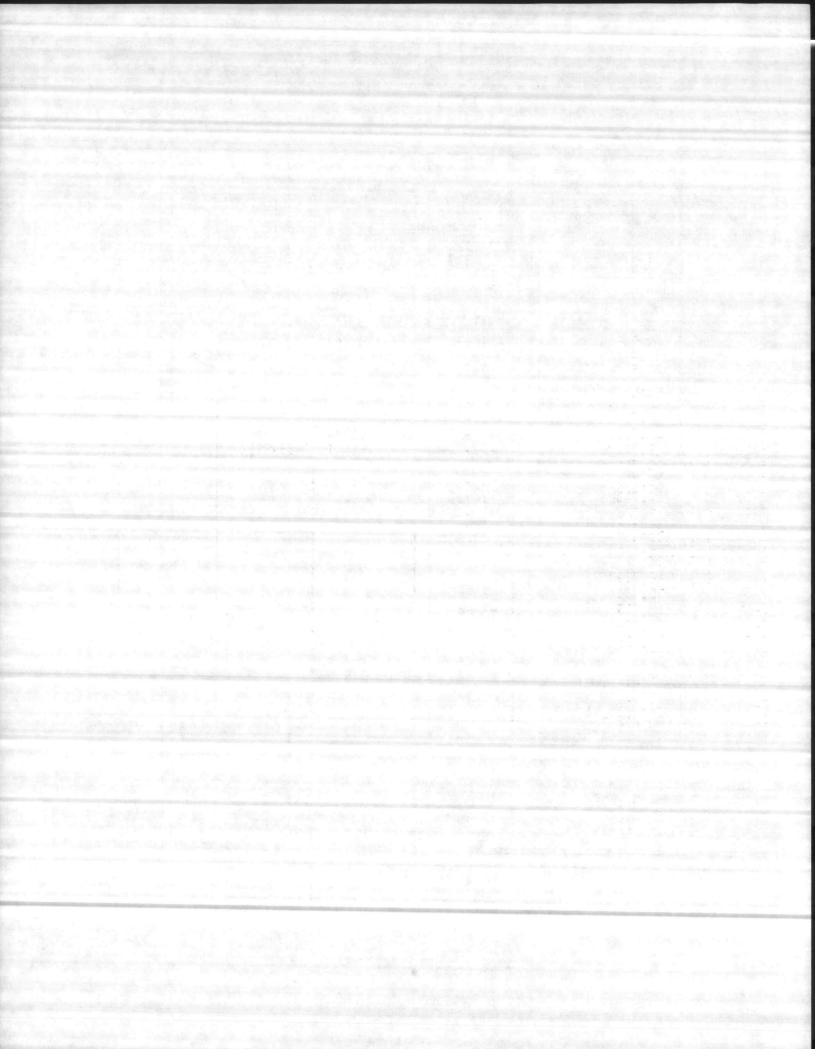
2 - Crawl body pit and eggs indicative of Green Turtle but turtle not observed

#### Tagged or

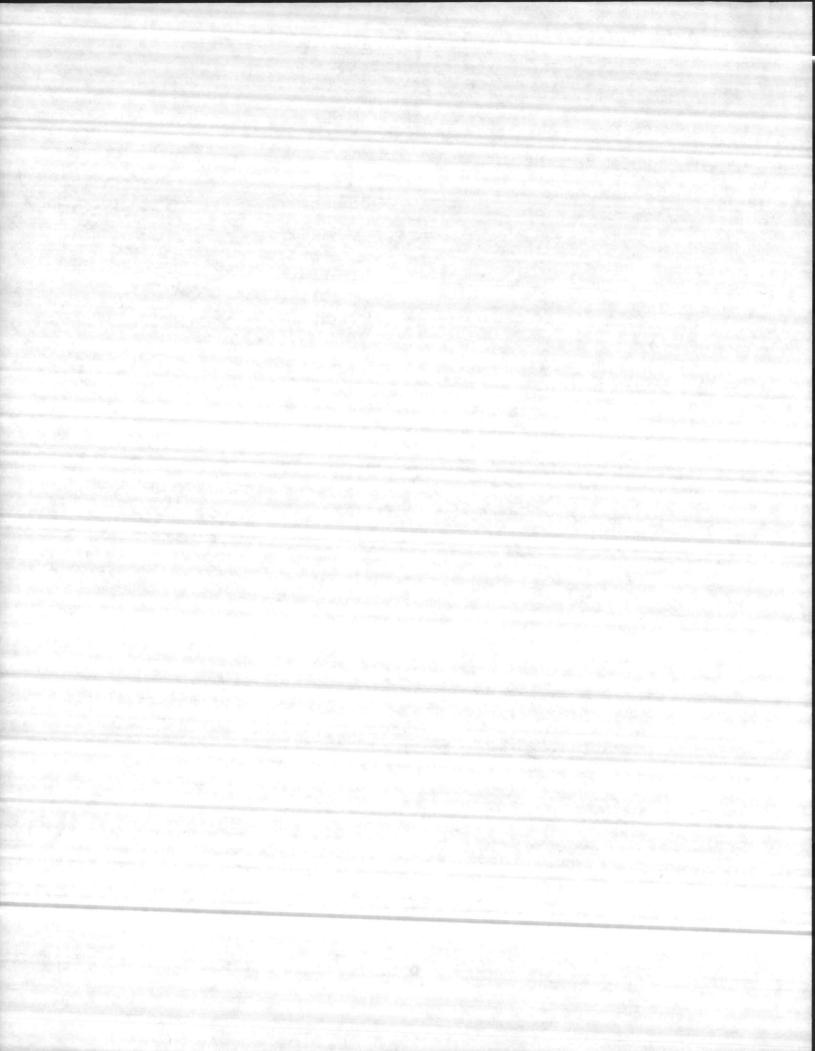
<sup>1) -</sup> Turtle previously tagged but tag missing - tag hole present

<sup>1</sup> Turtle observed 5 times; 4 turtles observed 4 times; 3 turtle observed 3 times; 6 turtles observed 2 times; 23 turtles observed 1 time

<sup>61</sup> sightings of tagged turtles



New River Inlet



Draw Bridge

South Tower

Riseley's Pier

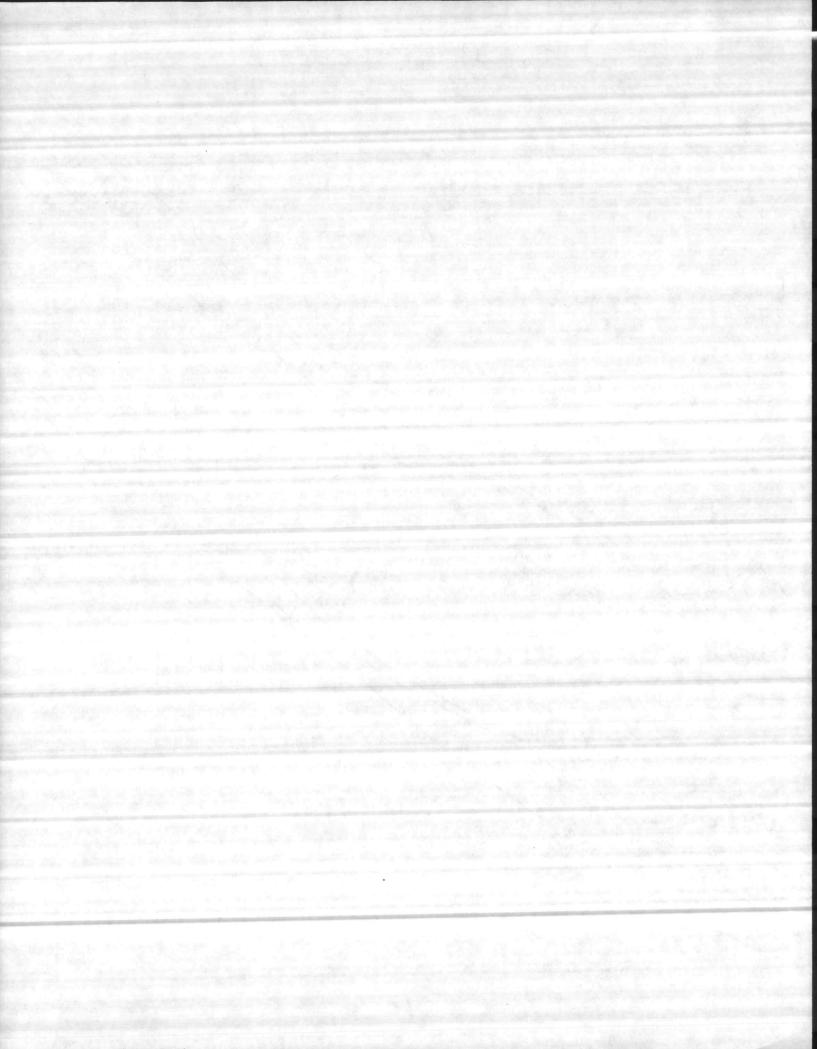
Onslow Beach

Brown's Inlet

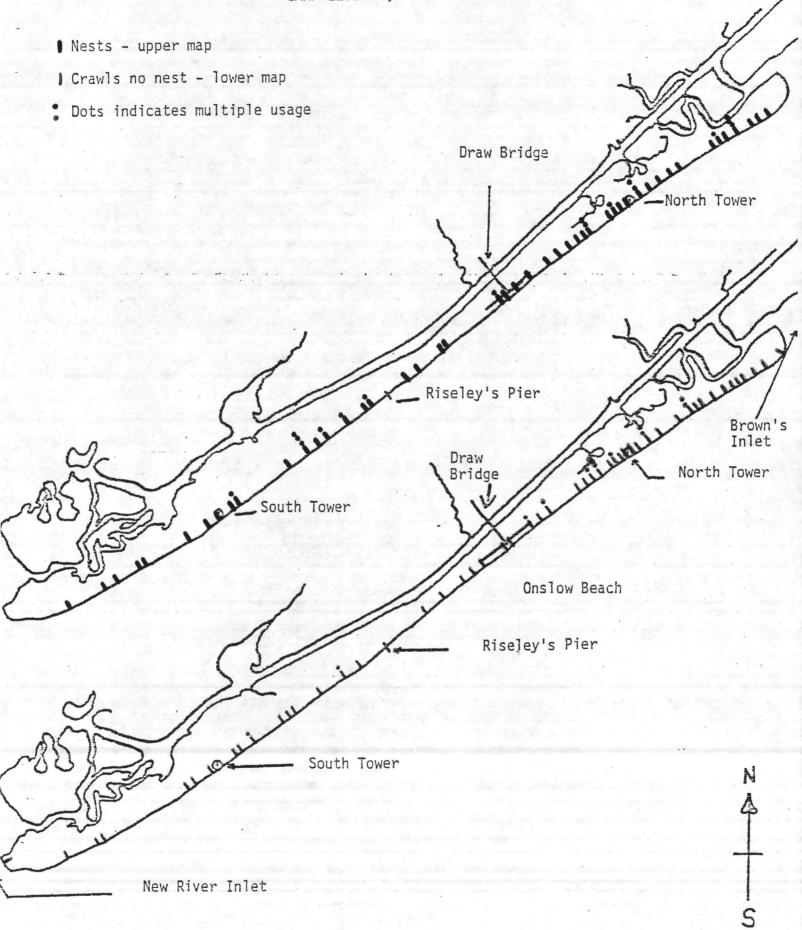
North Tower

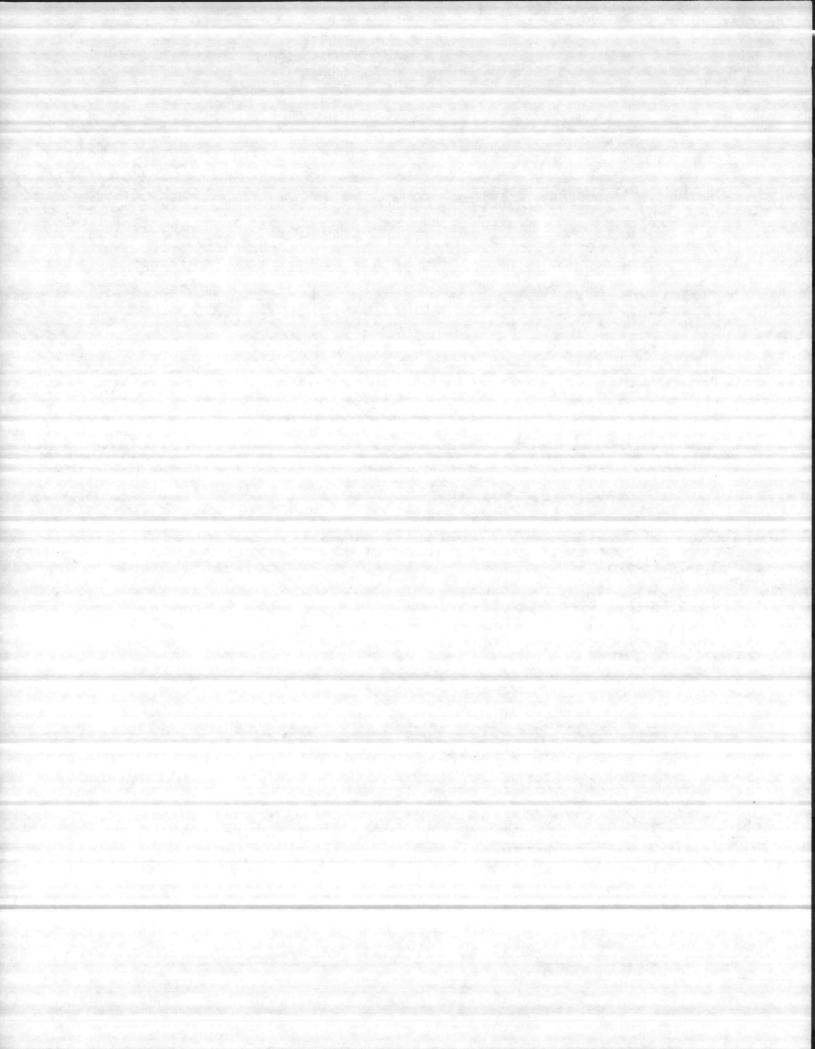
New River Inlet

● Nests - upper map



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





## ATLANTIC LOGGERHEAD SEA TURTLE PROGRAM 1979.

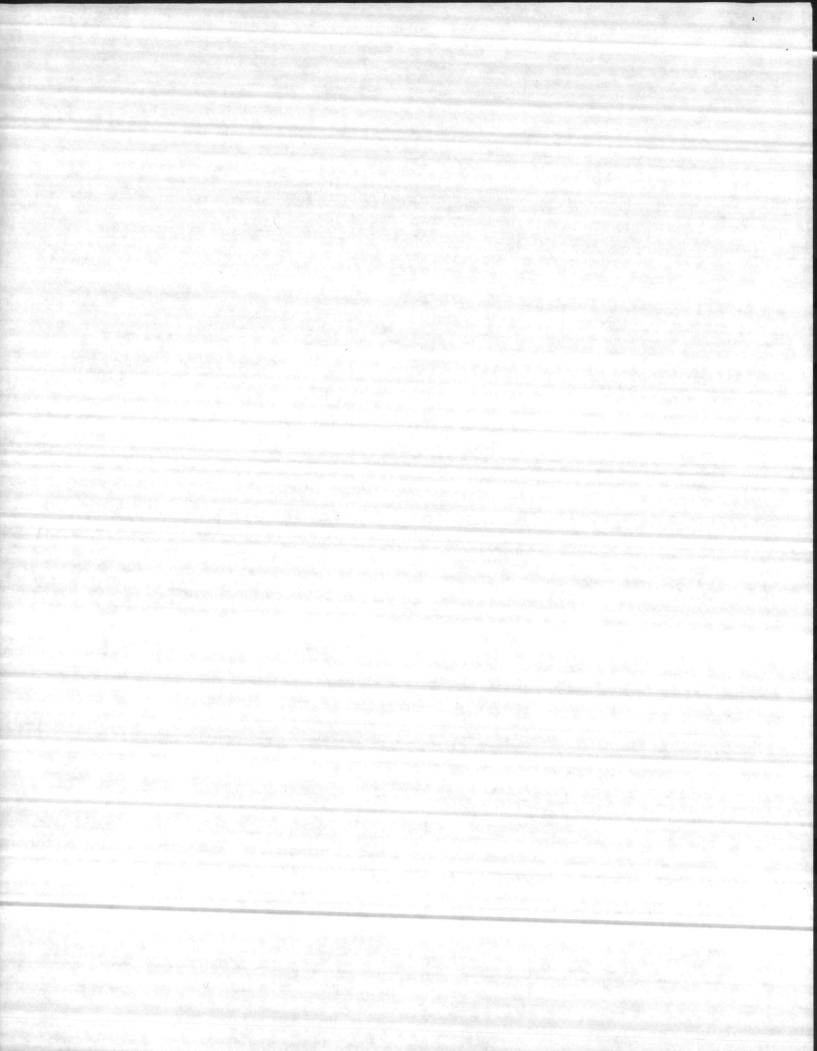
Natural Resources and Environmental Affairs Division

Base Maintenance Department

Marine Corps Base

Camp Lejeune, North Carolina 28542

Submitted by
Hugh R. Passingham
November 1979

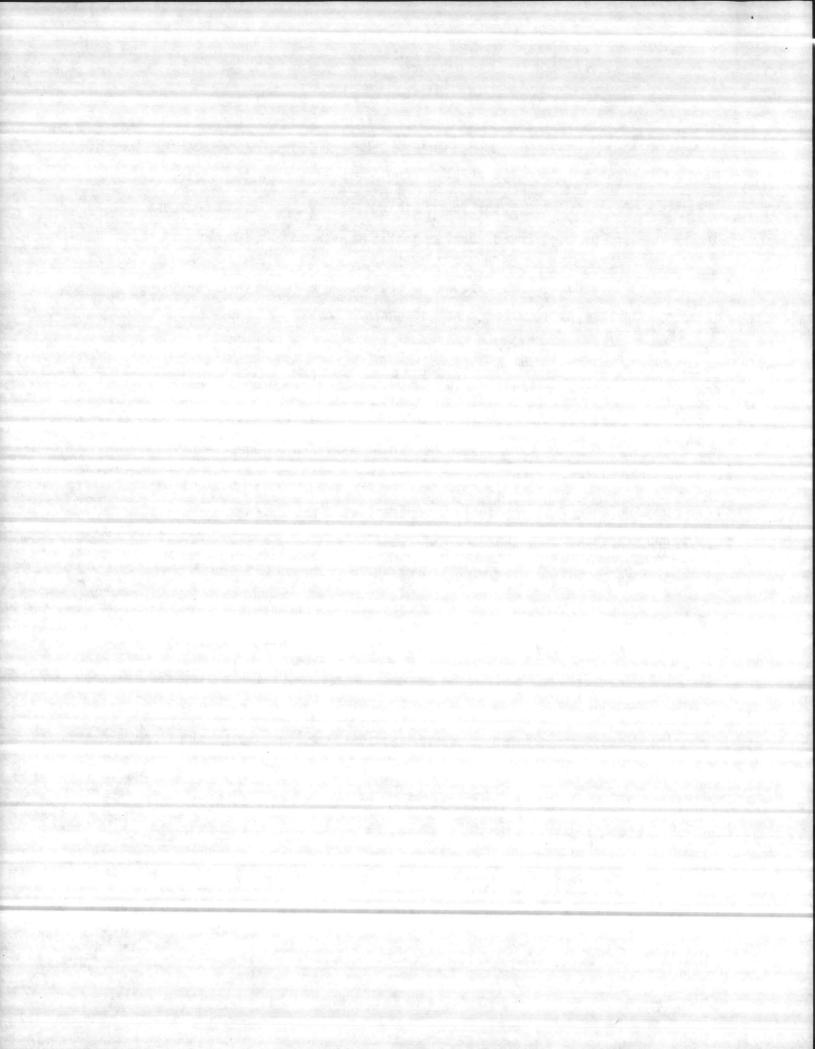


#### BACKGROUND

The Atlantic Loggerhead Sea Turtle (Caretta caretta caretta) (Photo 1, page 2) has nested along the coast of the Southeastern United States for thousands of years. In recent years biologists have noticed a decrease in the numbers of Loggerhead turtles nesting on these shores.

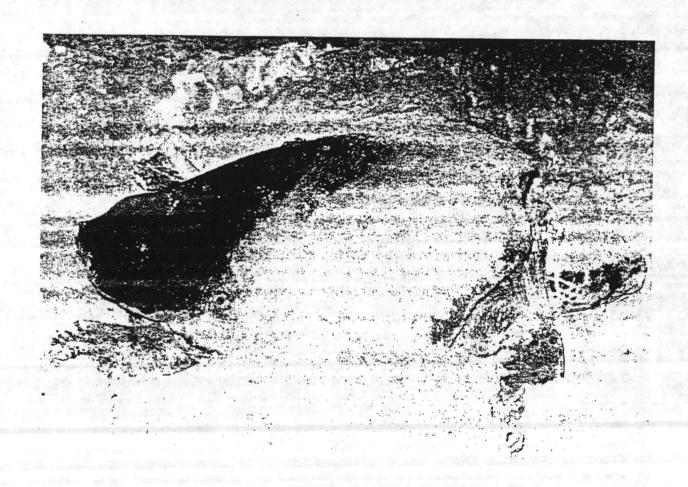
Marine Corps Base, Camp Lejeune, a 170 square mile infantry training installation located in Onslow County, North Carolina, includes approximately 12 miles of barrier islands which are used by the Atlantic Loggerhead Sea Turtle. The primary mission of Camp Lejeune is to provide housing, training facilities, logistic support and certain administrative support for Fleet Marine Force Units and other units assigned. The base has a Long Range Management Plan which provides for management of all natural resources including the sea turtle. Protective measures for the turtle were begun in 1974. The short range goal for the program was to stop animal predation on the nest sites. The chief predators were the Raccoon (Procyon lotor) and the Fox (Urocyon cineroargenteus). This has been accomplished by placing a predator-proof wire cage (Photo 2, page 3) over each nest immediately after the turtle has left the nest. This method of protection has proven highly successful, since the only damage due to predators now, is that done prior to installation of the cages. The long range goal of the program is two-fold, one to increase the dwindling population of the Atlantic Loggerhead Sea Turtle and two, to study the nesting habits of the turtles.

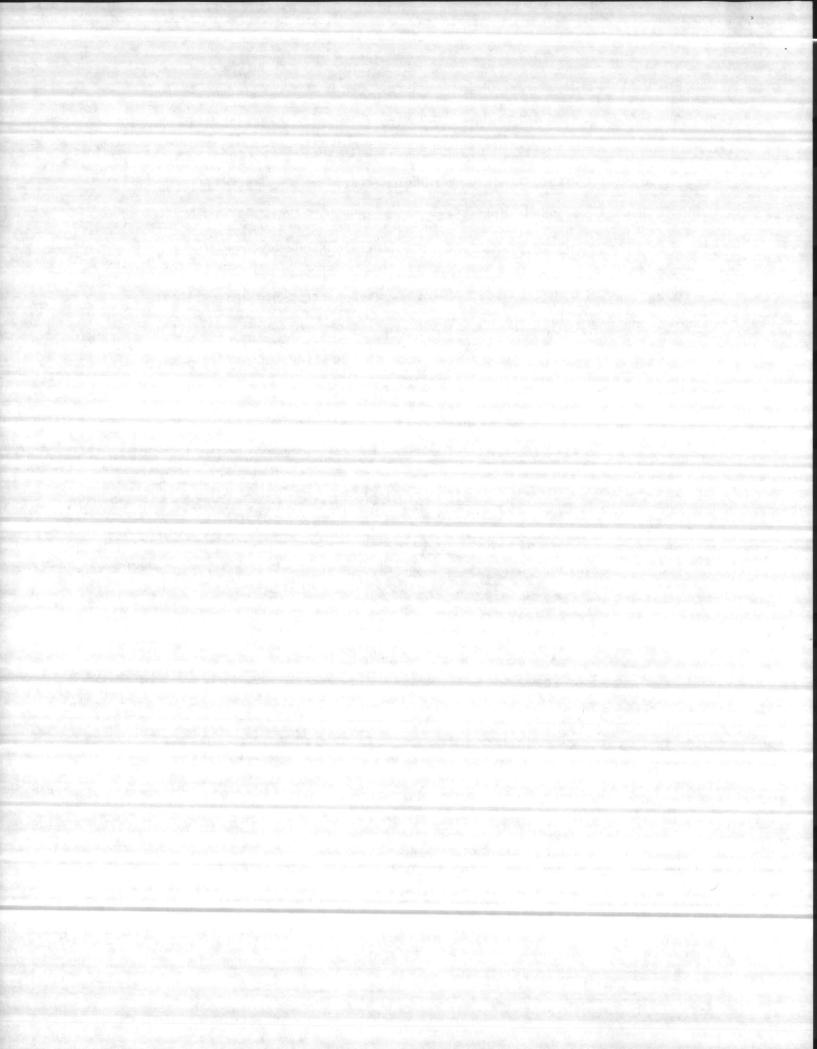
Since implementation of this program just prior to the nesting season of 1974, the Atlantic Loggerhead was placed on the National Endangered



Species List as threatened in August 1978. After the turtle was listed as threatened, Marine Corps Base requested formal consultation with the United States Fish and Wildlife Service to determine if a conflict existed as a result of military training on Onslow Beach and Browns Island. The United States Fish and Wildlife Service rendered a non-jeopardy opinion and recommended continuation of the sea turtle management program.

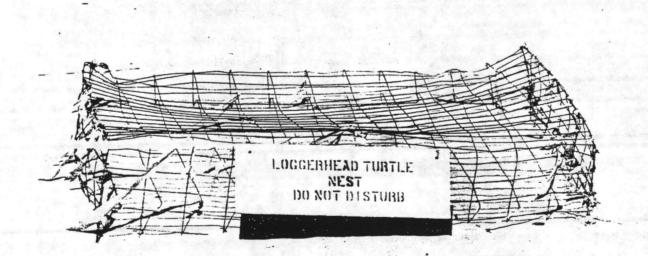
Also since its conception, this management program has increased its scope to include aerial surveys of the nesting grounds, tagging adult female turtles and follow-up work to determine nesting success on a seasonal basis.

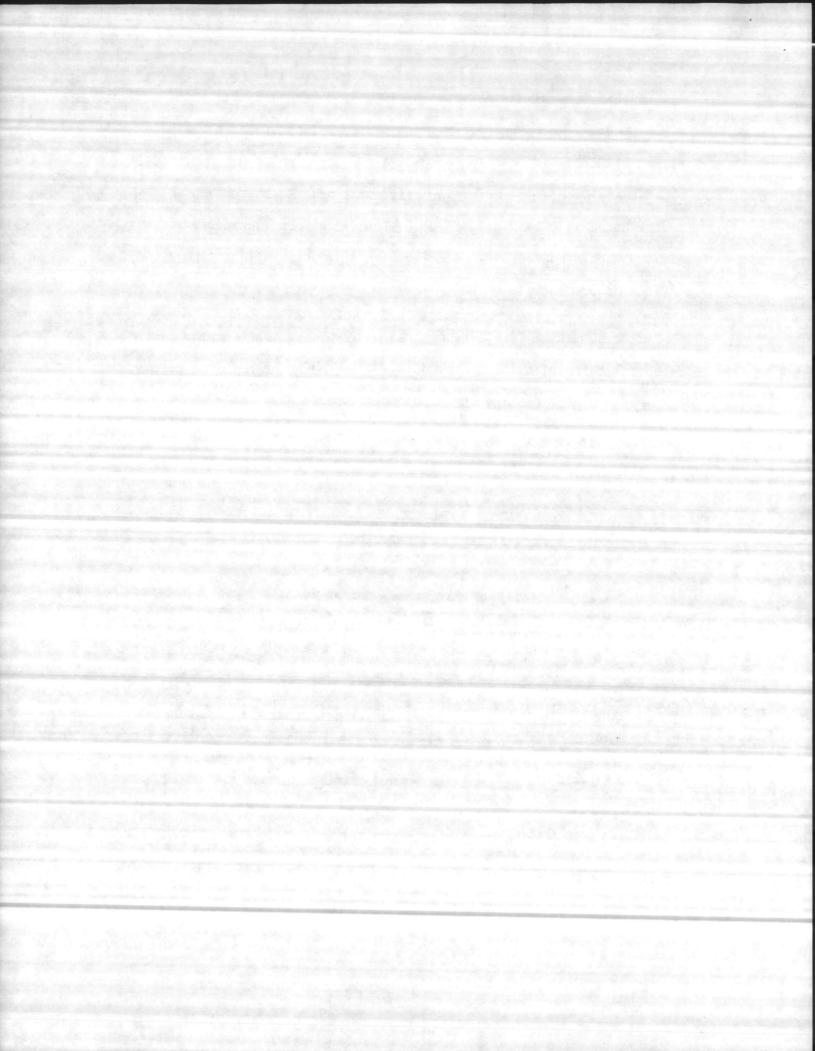




The Institute of Marine Science (IMS) at Morehead City, North Carolina headed by Dr. Frank Schwartz, has shown a keen interest in the management program. IMS has implemented a headstart program which has provided valuable assistance in caring for nests that have to be removed from the amphibious vehicle landing site on Onslow Beach. Dr. Schwartz has also been a valuable source of information concerning the Atlantic Loggerhead and it's management.

By the summer of 1979, the program had expanded to the point that a biological technician was employed to assume the sea turtle management program during the nesting and hatching season.





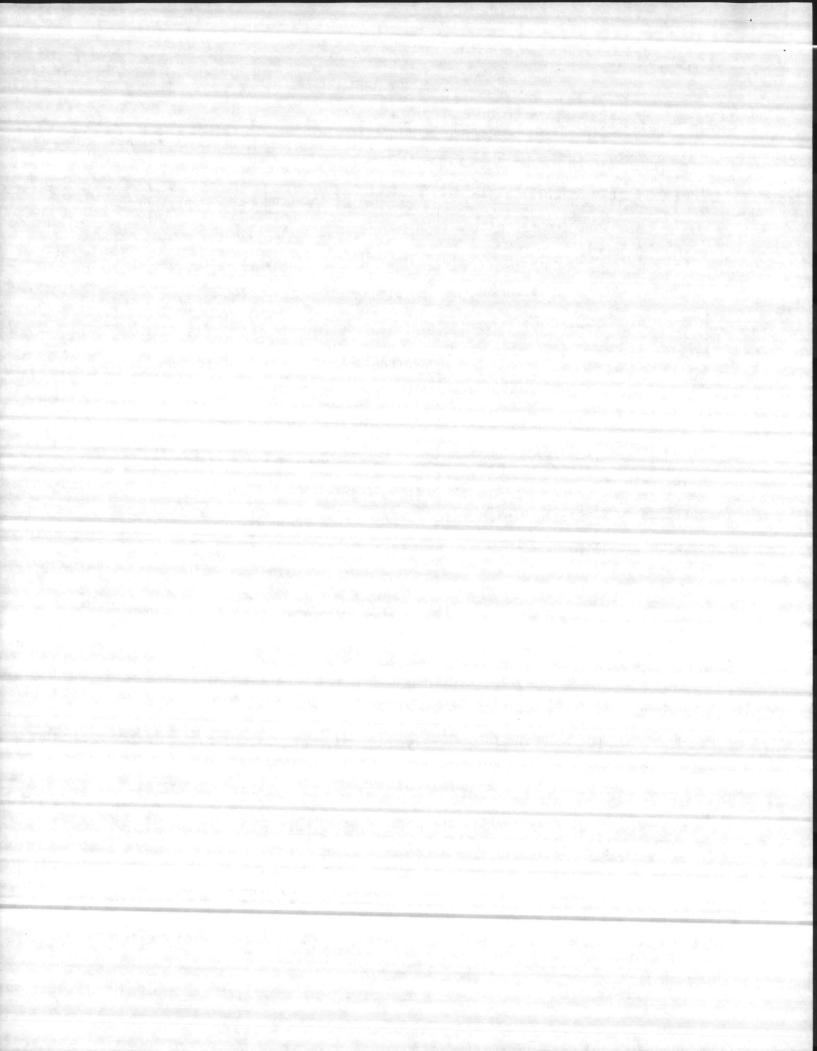
### STUDY AREA

The study area for the management program includes the barrier islands from New River Inlet north to Bear Inlet. Aerial observation includes that area from Smith's Island, at the mouth of the Cape Fear River, northward to the southern tip of the Cape Lookout National Seashore, on the North Carolina coast. This overall area was studied by aerial survey to determine actual nests versus nesting attempts (Table I). An area midway between Cape Lookout and Smith's Island is the primary study site. This barrier island is Onslow Beach, and is part of Marine Corps Base, Camp Lejeune. Onslow Beach is a seven mile stretch of beach lying just north of New River Inlet and separated from the Hammocks Beach State Park by the Marine Corps Bombing Range on Brown's Island. The beach strand on Onslow Beach was divided into two areas. A north and a south area separated by Riseley's Pier, which was the reference point for locating nests on the beach.

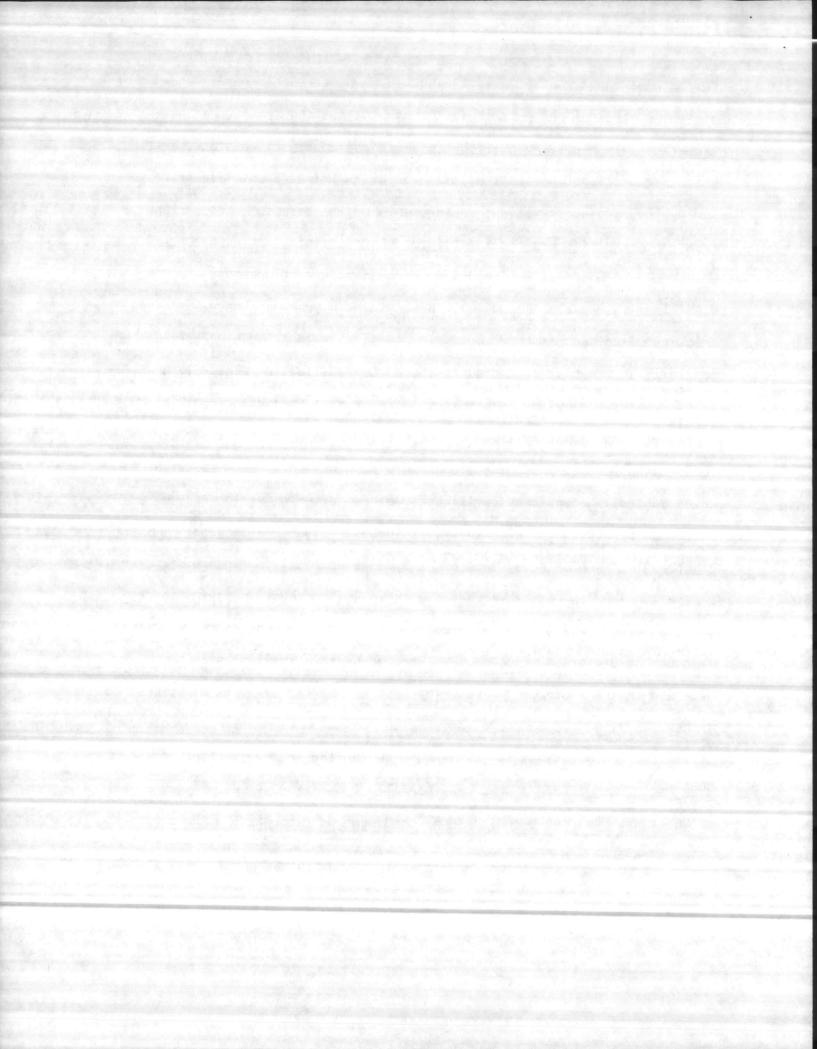
# METHODS

The first phase of the study was that of nightly patrols of the beach strand on Onslow Beach by a biological technician. These patrols, using a four-wheeldrive vehicle and beginning one hour before the high tide or not later than 2200 hours, generally began at the south end of the beach.

A search was made for turtle tracks or turtles just leaving the surf. If no turtles were located during a patrol, there would be a one-half hour wait before beginning the next patrol. Upon location of turtles, all lights were extinguished until it could be ascertained whether or not the



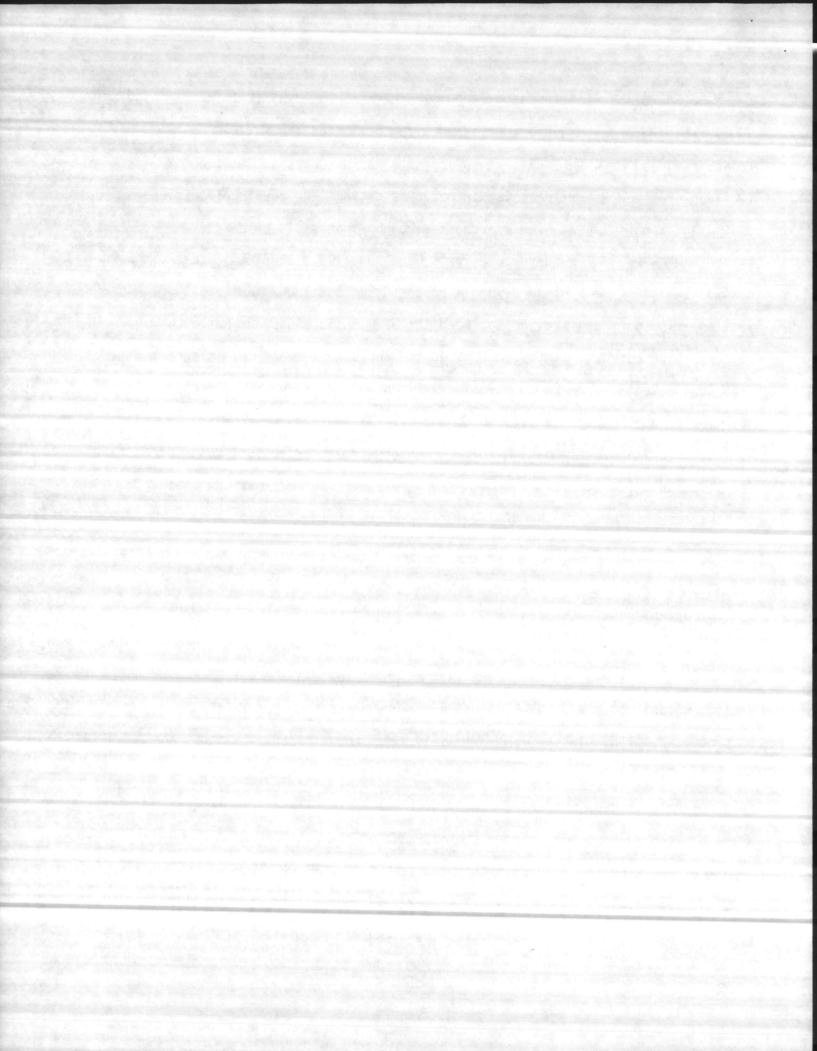
turtle would nest. After a turtle nested, a numbered tag was attached to a posterior marginal scute. Midway through the nesting season, carapace tags (actually a small disc fish tag) were replaced by live stock ear tags. which were attached on the trailing edge of the right front flipper. During the tagging operation, measurements of the carapace, head, right front and rear flippers and identifying characteristics of each turtle were noted. This data was recorded on the Sea Turtle Inventory (Nesting Data) form (See pages 15 and 16). Nests laid in areas of heavy human use, below the tideline or other seemingly undesirable locations, were relocated, generally at the base of the dunes above the tideline in relatively unused areas of the beach. Nests located in an area extending from Riseley's Pier south approximately two miles to a training observation tower were removed and sent to IMS. These eggs were counted and allowed to hatch under controlled conditions. All other nests, after being located, were protected by burying to a depth of six inches, a four foot square, eighteen inches high cage, made of 2" by 4" electrically welded wire, over the nest. The case was then marked with yellow surveyors plastic tape and a 8" by 20" white sign with red lettering stating "Endangered Wildlife Nest Do Not Disturb." Each nest was tagged using a small plastic tag attached to the protection cage. This tag was marked with the date, nest number, location and number of eggs in the nest. Once a nest was protected, it was checked occasionally until hatch-out of the young was observed. When hatch-out occurred, which was normally from fifty to seventy days, the nest was re-entered and the unhatched eggs were counted. The number of eggs that did not hatch were compared to the total number of eggs for each nest to determine hatching success.



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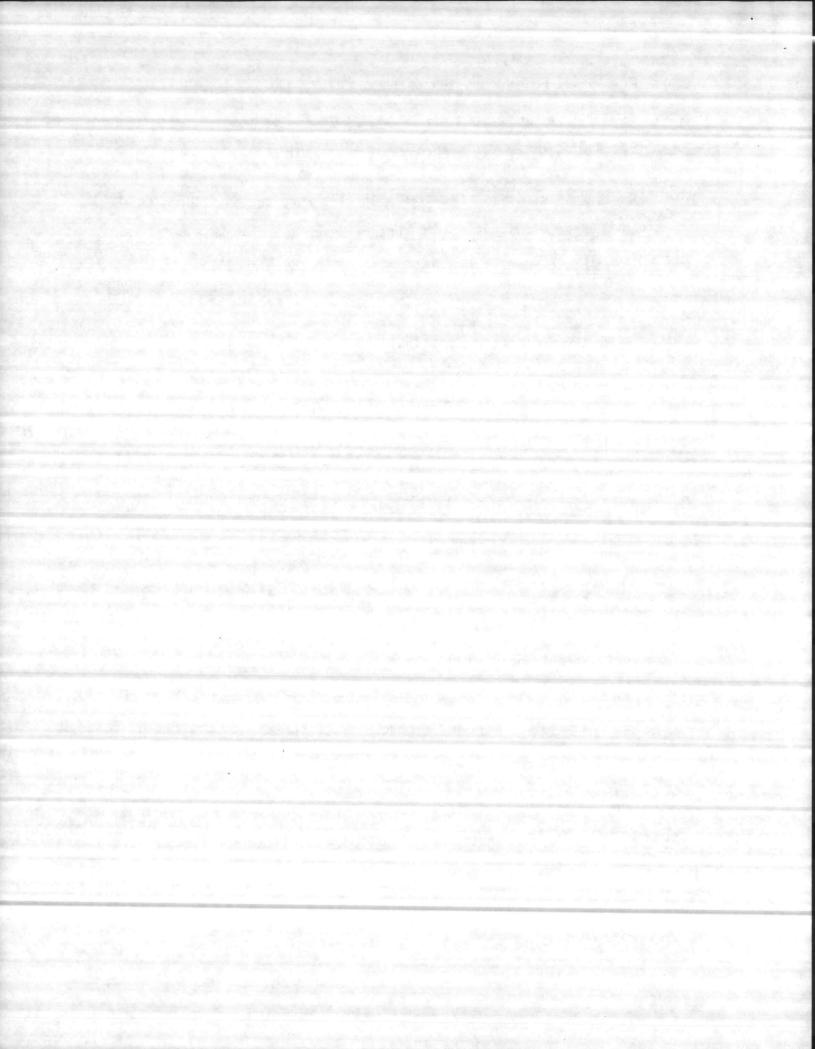
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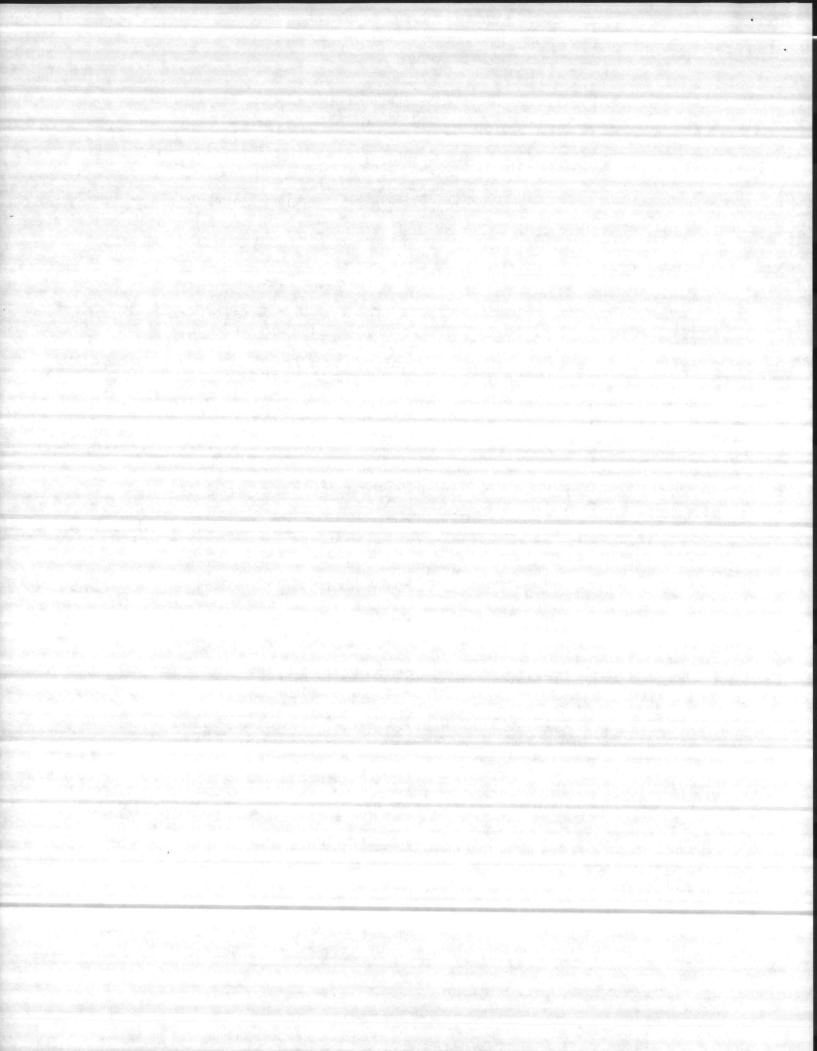


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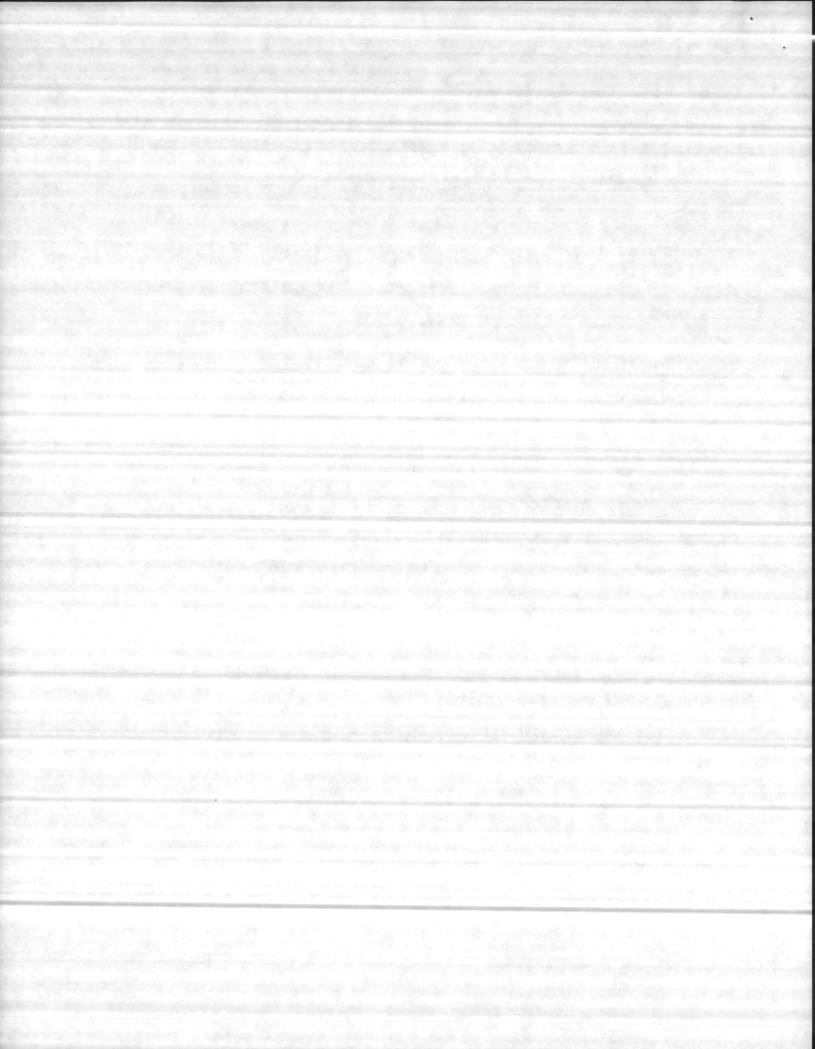


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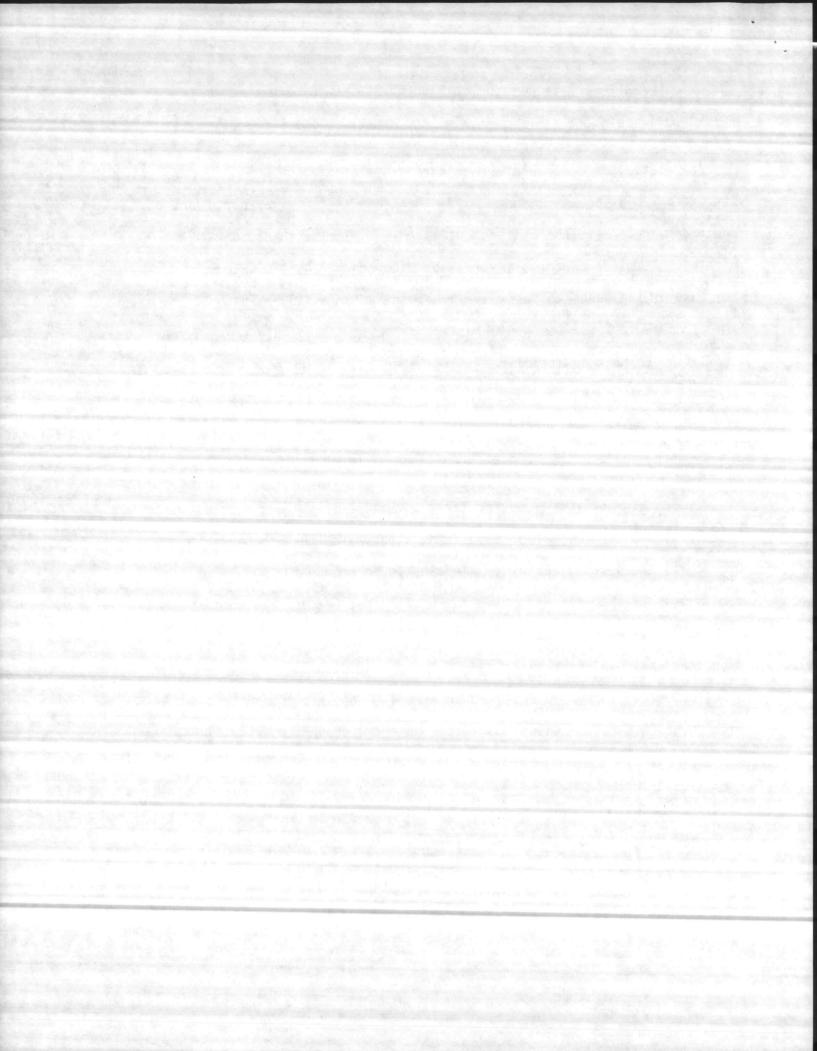


TABLE I
GROUND SURVEY ONSLOW BEACH

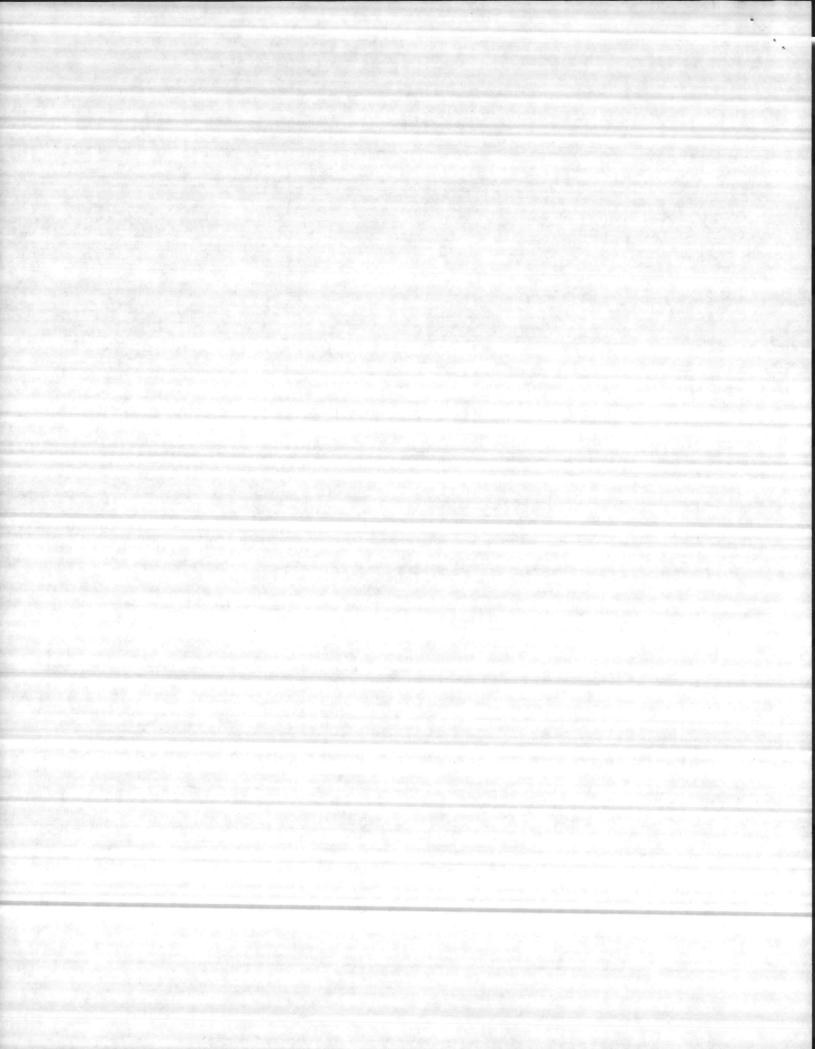
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# ATLANTIC LOGGERHEAD SEA TURTLE PROGRAM 1979.

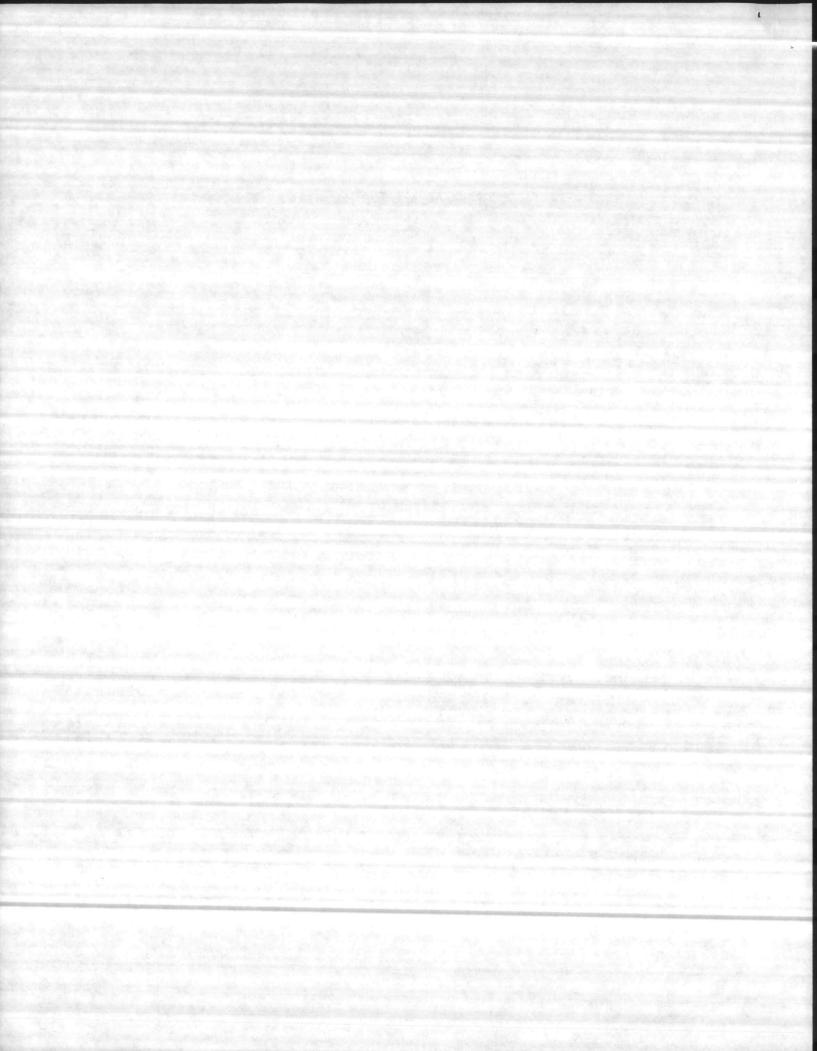
Natural Resources and Environmental Affairs Division

Base Maintenance Department

Marine Corps Base

Camp Lejeune, North Carolina 28542

Submitted by
Hugh R. Passingham
November 1979

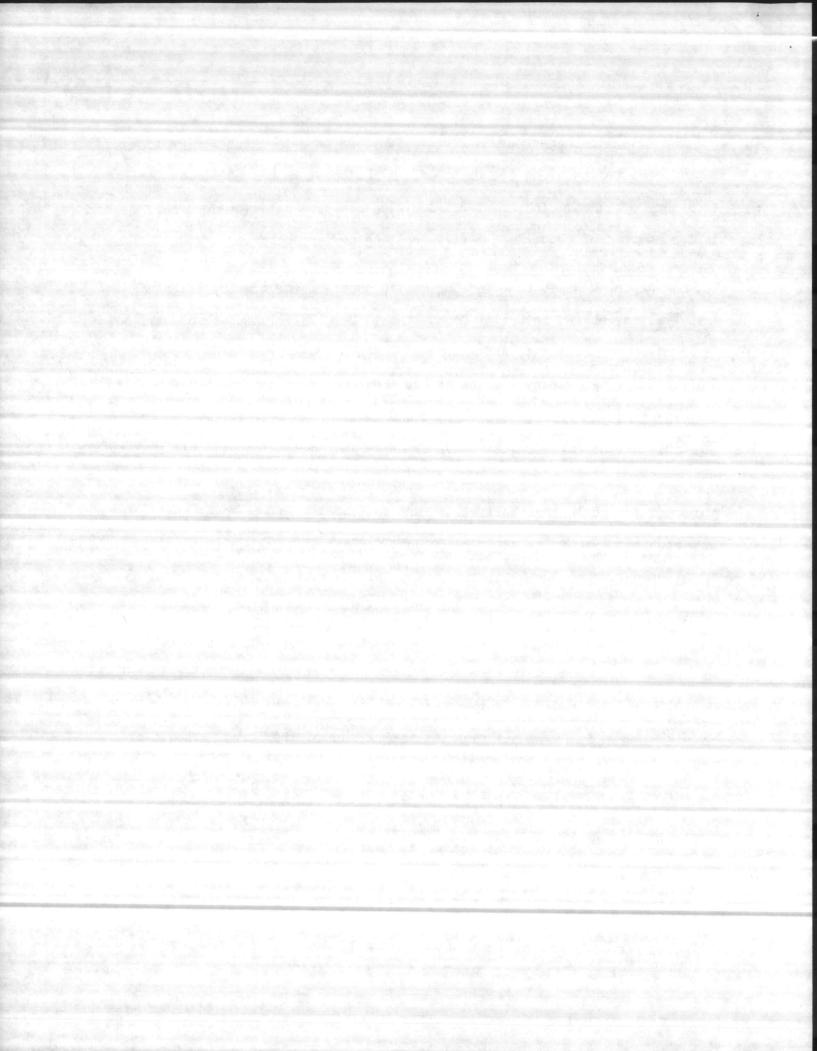


#### BACKGROUND

The Atlantic Loggerhead Sea Turtle (Caretta caretta caretta) (Photo 1, page 2) has nested along the coast of the Southeastern United States for thousands of years. In recent years biologists have noticed a decrease in the numbers of Loggerhead turtles nesting on these shores.

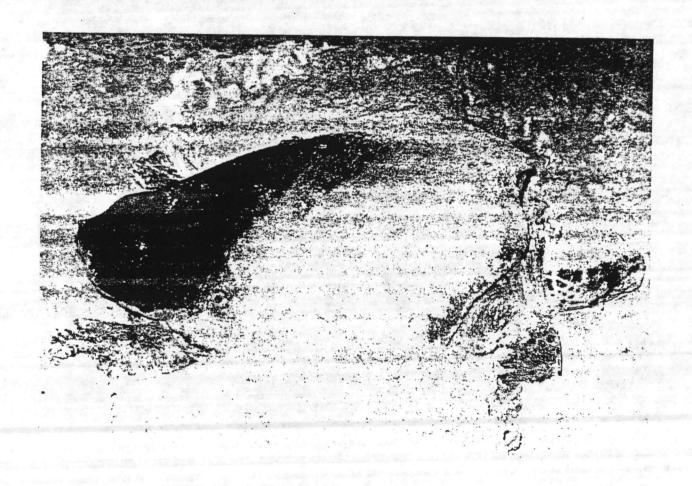
Marine Corps Base, Camp Lejeune, a 170 square mile infantry training installation located in Onslow County, North Carolina, includes approximately 12 miles of barrier islands which are used by the Atlantic Loggerhead Sea Turtle. The primary mission of Camp Lejeune is to provide housing, training facilities, logistic support and certain administrative support for Fleet Marine Force Units and other units assigned. The base has a Long Range Management Plan which provides for management of all natural resources including the sea turtle. Protective measures for the turtle were begun in 1974. The short range goal for the program was to stop animal predation on the nest sites. The chief predators were the Raccoon (Procyon lotor) and the Fox (Urocyon cineroargenteus). This has been accomplished by placing a predator-proof wire cage (Photo 2, page 3) over each nest immediately after the turtle has left the nest. This method of protection has proven highly successful, since the only damage due to predators now, is that done prior to installation of the cages. The long range goal of the program is two-fold, one to increase the dwindling population of the Atlantic Loggerhead Sea Turtle and two, to study the nesting habits of the turtles.

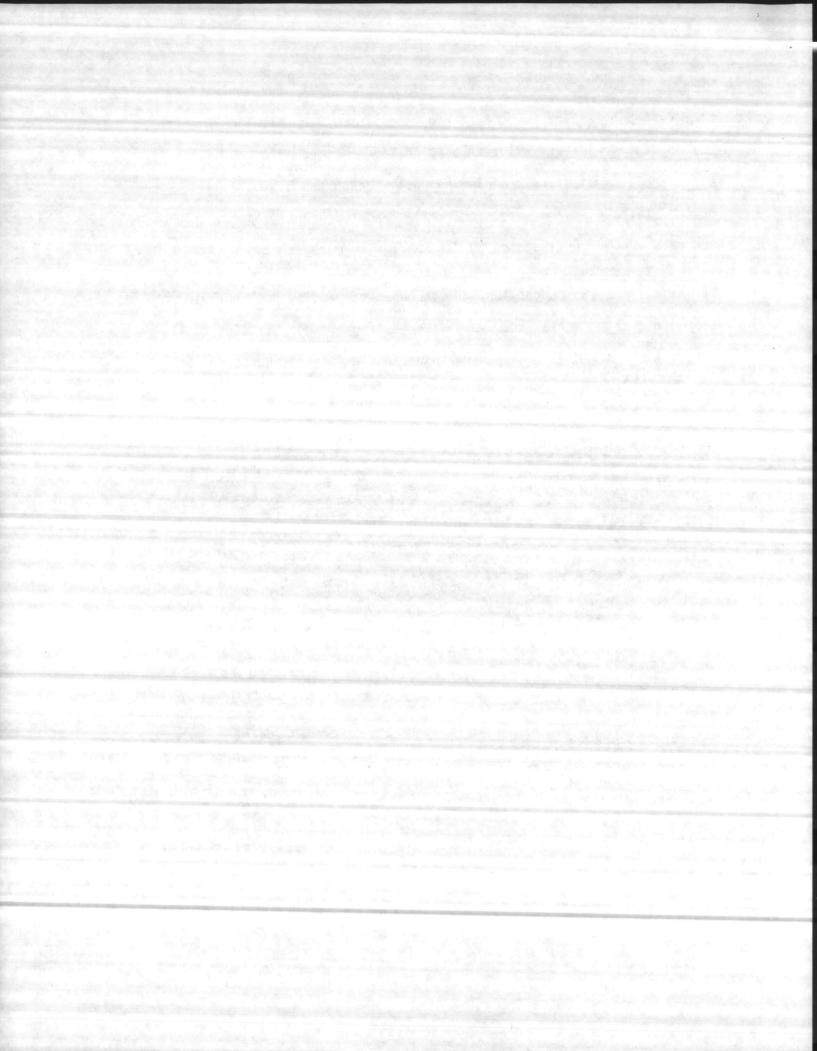
Since implementation of this program just prior to the nesting season of 1974, the Atlantic Loggerhead was placed on the National Endangered



Species List as threatened in August 1978. After the turtle was listed as threatened, Marine Corps Base requested formal consultation with the United States Fish and Wildlife Service to determine if a conflict existed as a result of military training on Onslow Beach and Browns Island. The United States Fish and Wildlife Service rendered a non-jeopardy opinion and recommended continuation of the sea turtle management program.

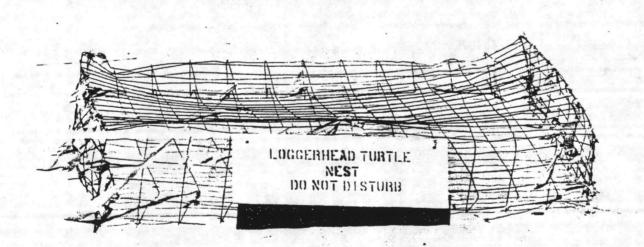
Also since its conception, this management program has increased its scope to include aerial surveys of the nesting grounds, tagging adult female turtles and follow-up work to determine nesting success on a seasonal basis.

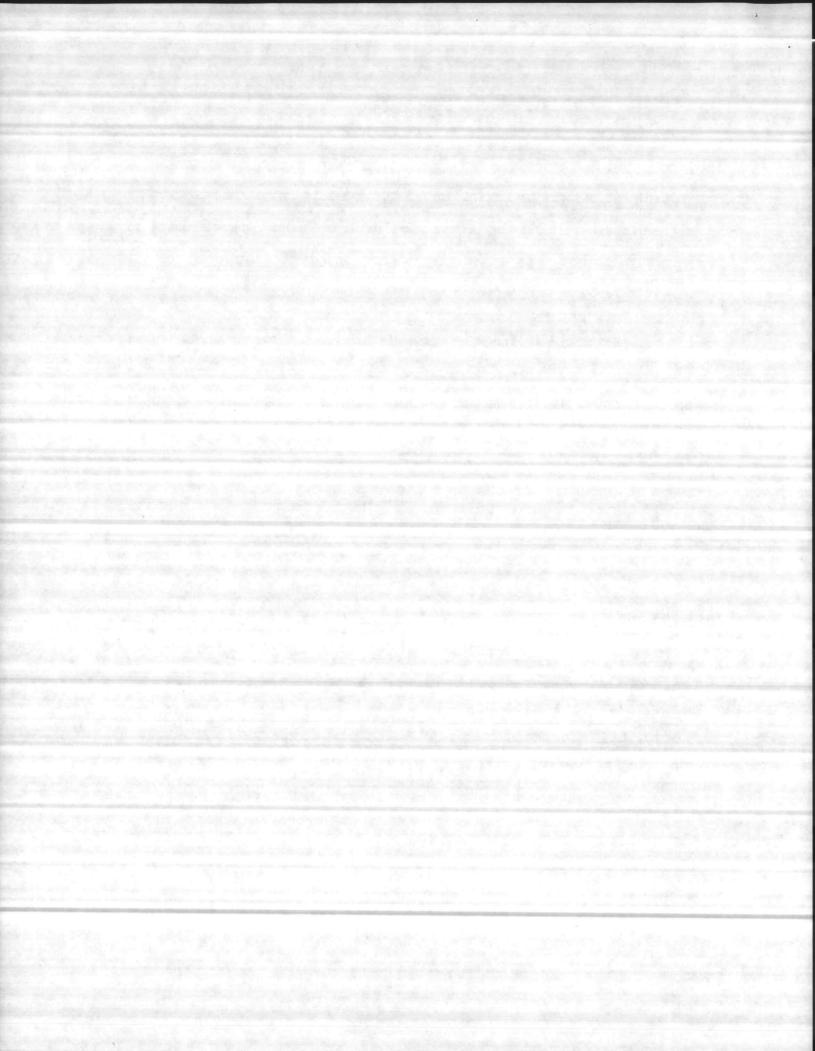




The Institute of Marine Science (IMS) at Morehead City, North Carolina headed by Dr. Frank Schwartz, has shown a keen interest in the management program. IMS has implemented a headstart program which has provided valuable assistance in caring for nests that have to be removed from the amphibious vehicle landing site on Onslow Beach. Dr. Schwartz has also been a valuable source of information concerning the Atlantic Loggerhead and it's management.

By the summer of 1979, the program had expanded to the point that a biological technician was employed to assume the sea turtle management program during the nesting and hatching season.





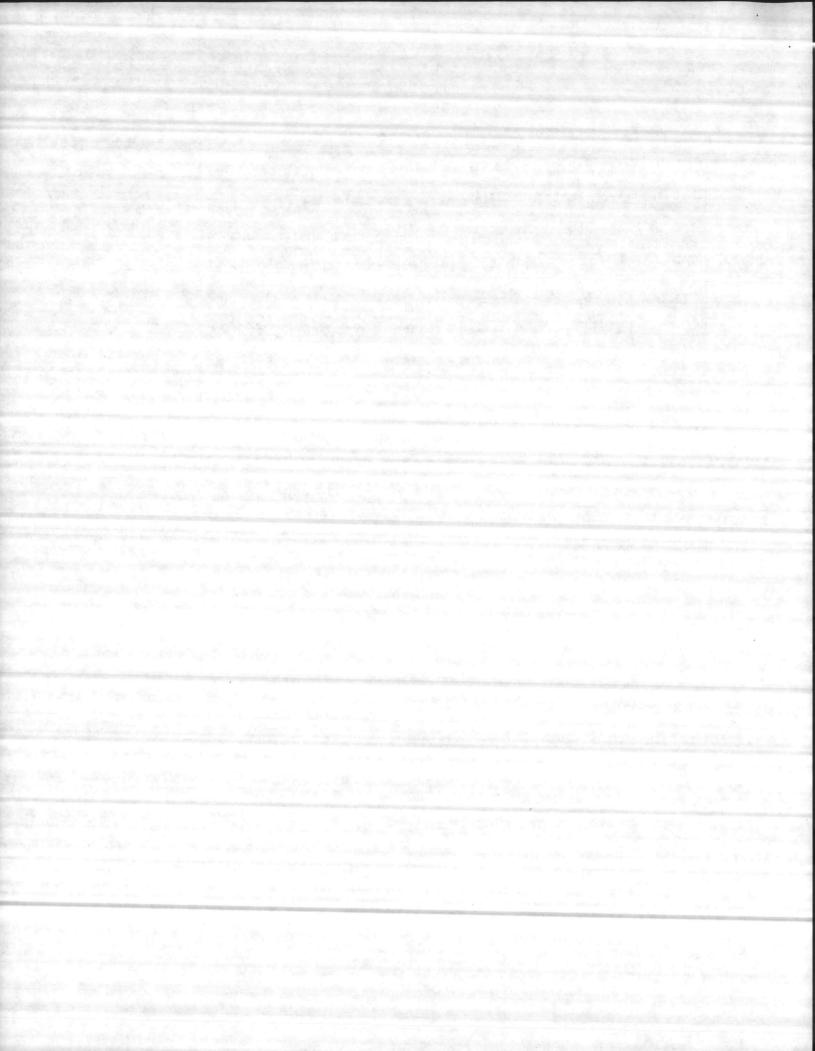
## STUDY AREA

The study area for the management program includes the barrier islands from New River Inlet north to Bear Inlet. Aerial observation includes that area from Smith's Island, at the mouth of the Cape Fear River, northward to the southern tip of the Cape Lookout National Seashore, on the North Carolina coast. This overall area was studied by aerial survey to determine actual nests versus nesting attempts (Table I). An area midway between Cape Lookout and Smith's Island is the primary study site. This barrier island is Onslow Beach, and is part of Marine Corps Base, Camp Lejeune. Onslow Beach is a seven mile stretch of beach lying just north of New River Inlet and separated from the Hammocks Beach State Park by the Marine Corps Bombing Range on Brown's Island. The beach strand on Onslow Beach was divided into two areas. A north and a south area separated by Riseley's Pier, which was the reference point for locating nests on the beach.

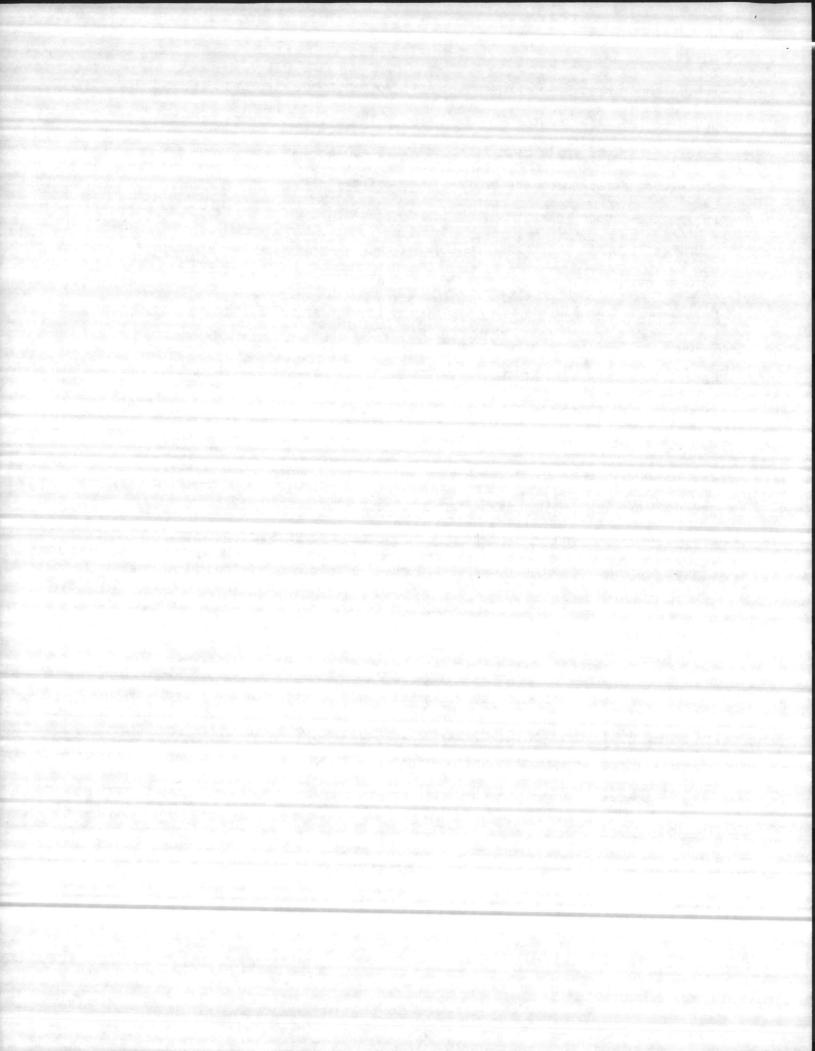
## METHODS

The first phase of the study was that of nightly patrols of the beach strand on Onslow Beach by a biological technician. These patrols, using a four-wheeldrive vehicle and beginning one hour before the high tide or not later than 2200 hours, generally began at the south end of the beach.

A search was made for turtle tracks or turtles just leaving the surf. If no turtles were located during a patrol, there would be a one-half hour wait before beginning the next patrol. Upon location of turtles, all lights were extinguished until it could be ascertained whether or not the



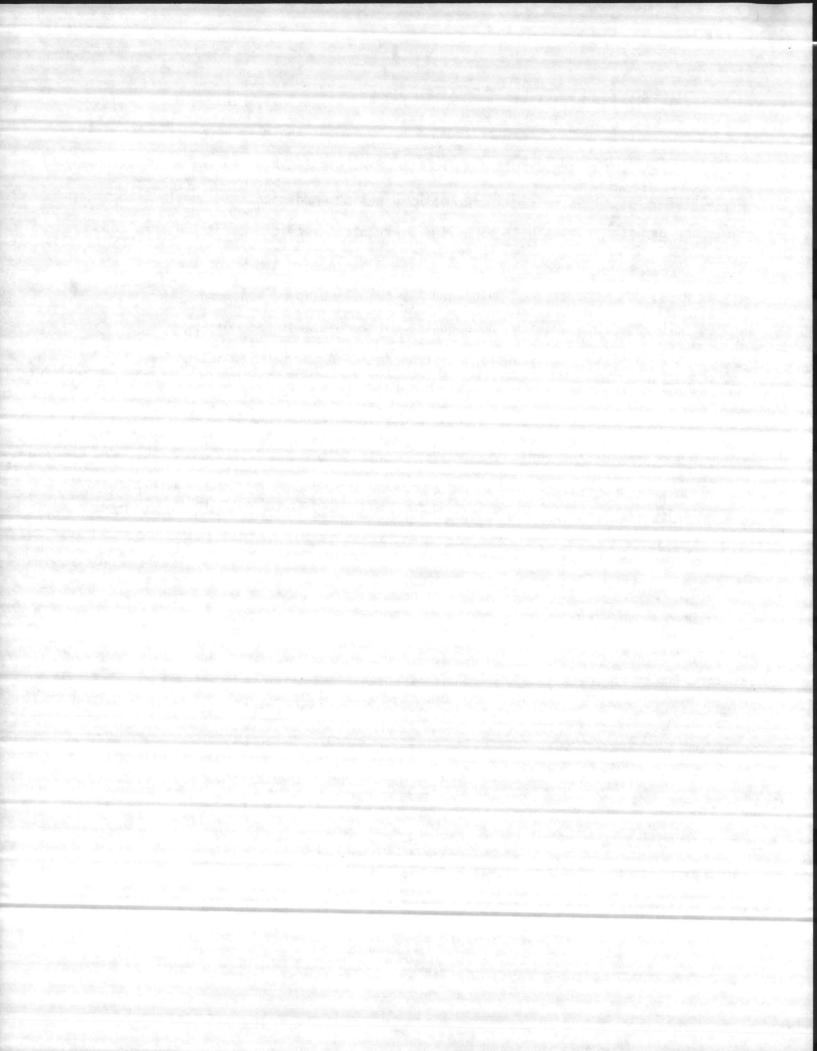
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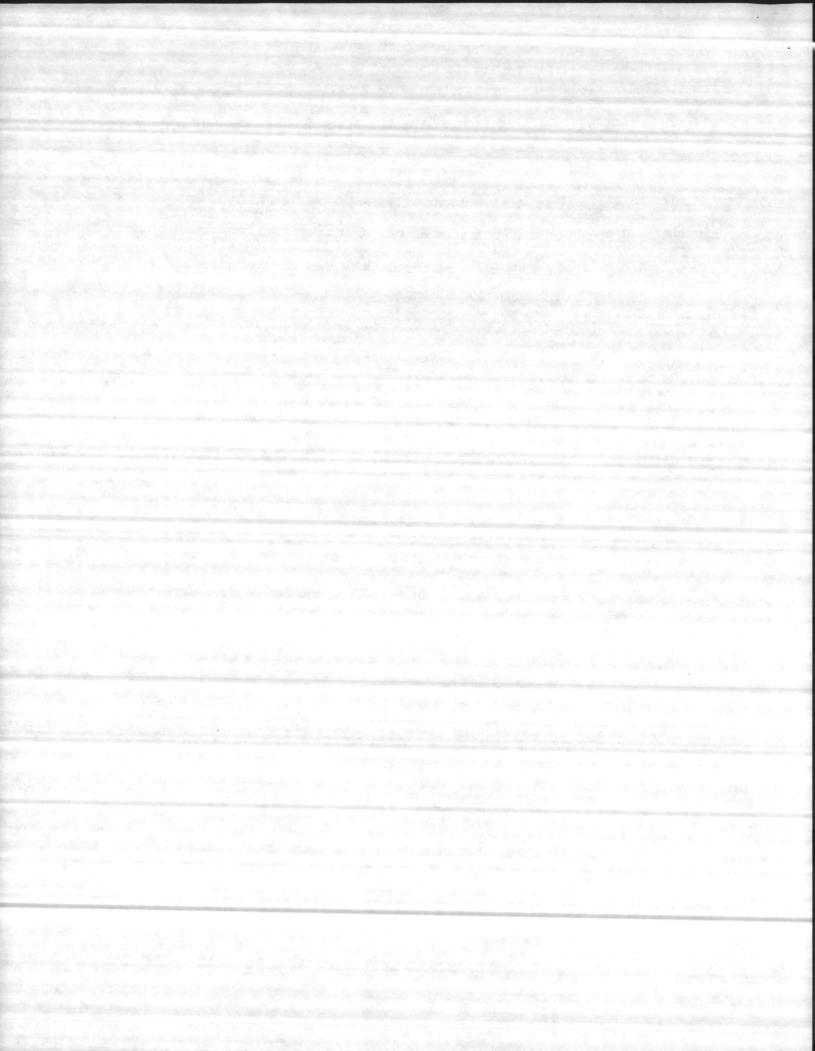
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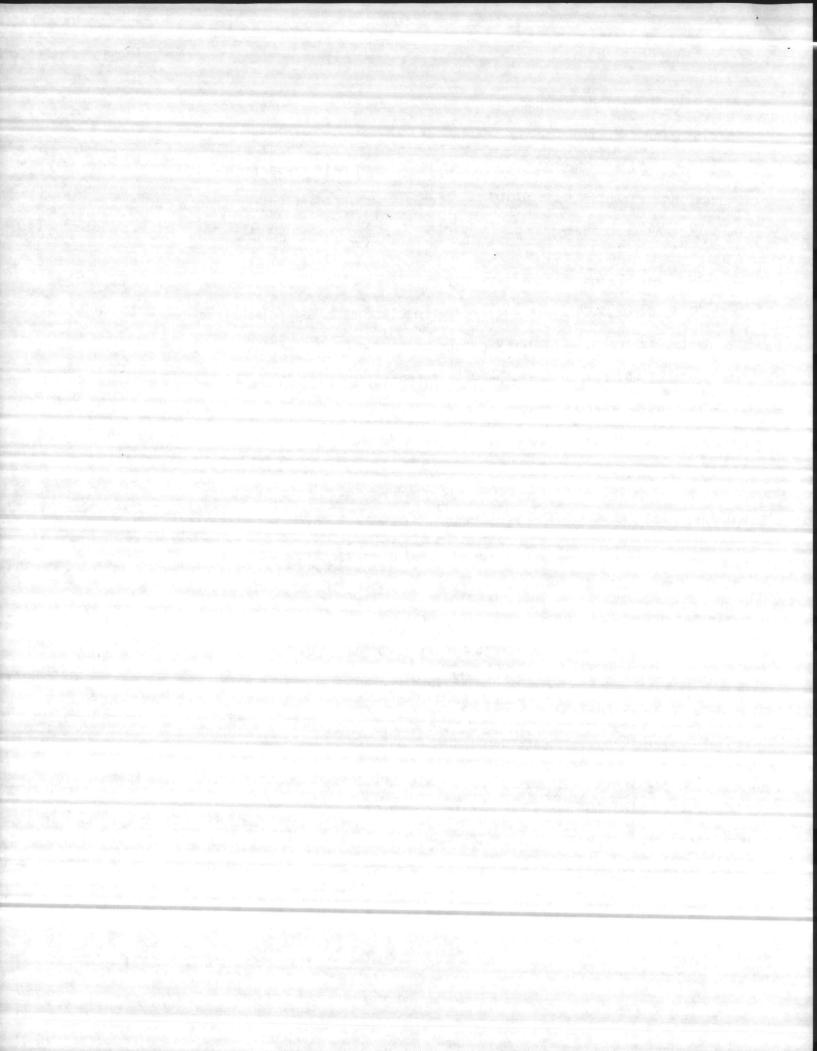


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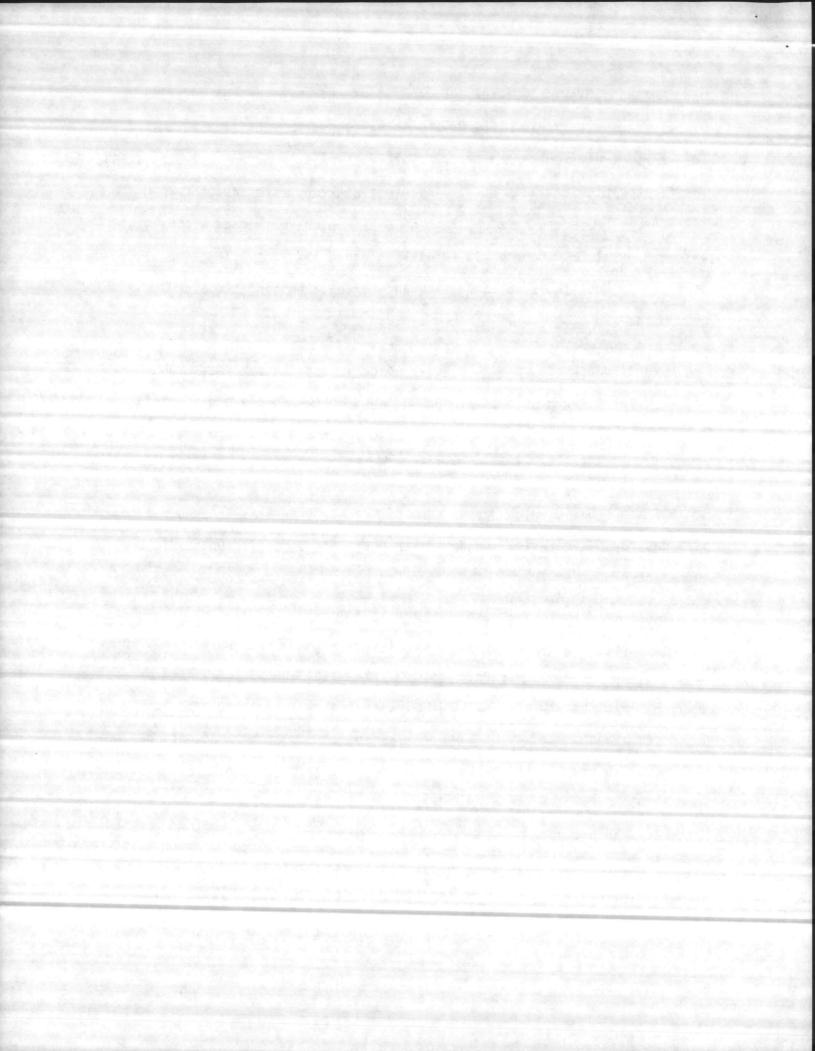


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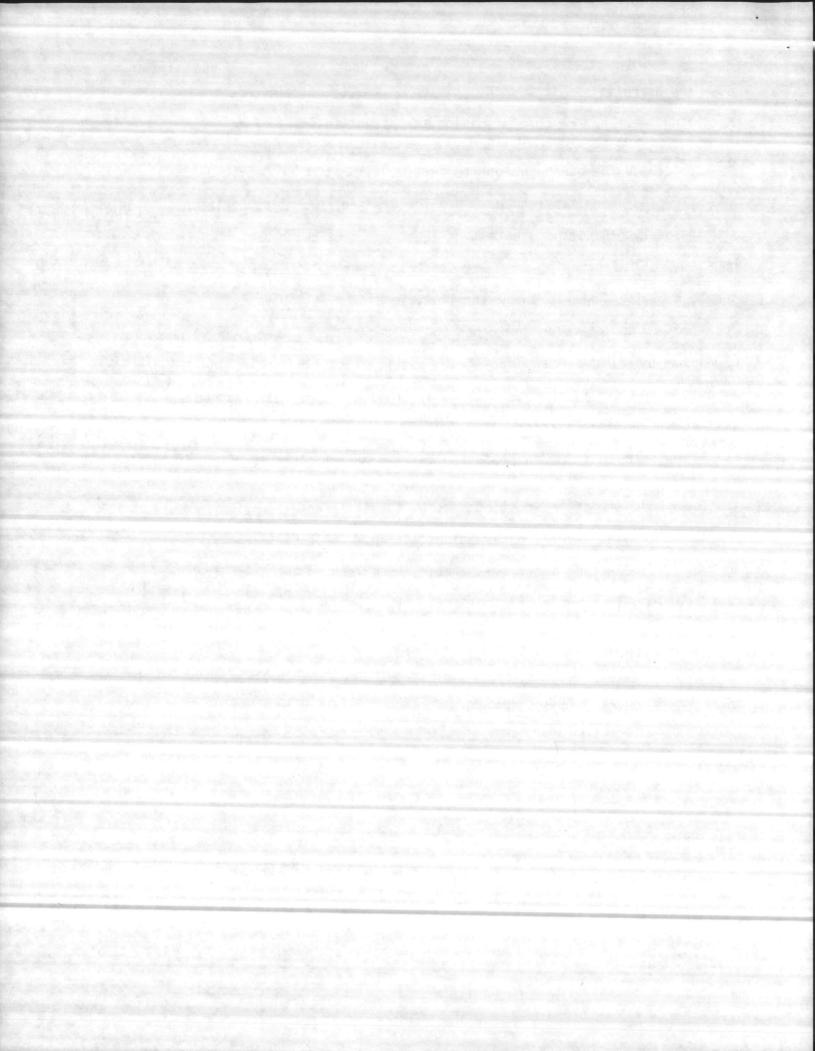


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