

SEA TURTLE INVENTORY

for

SUMMER AND FALL 1984

NATURAL RESOURCES AND ENVIRONMENTAL AFFAIRS DIVISION

ASSISTANT CHIEF OF STAFF, FACILITIES

MARINE CORPS BASE

CAMP LEJEUNE, NORTH CAROLINA 28542

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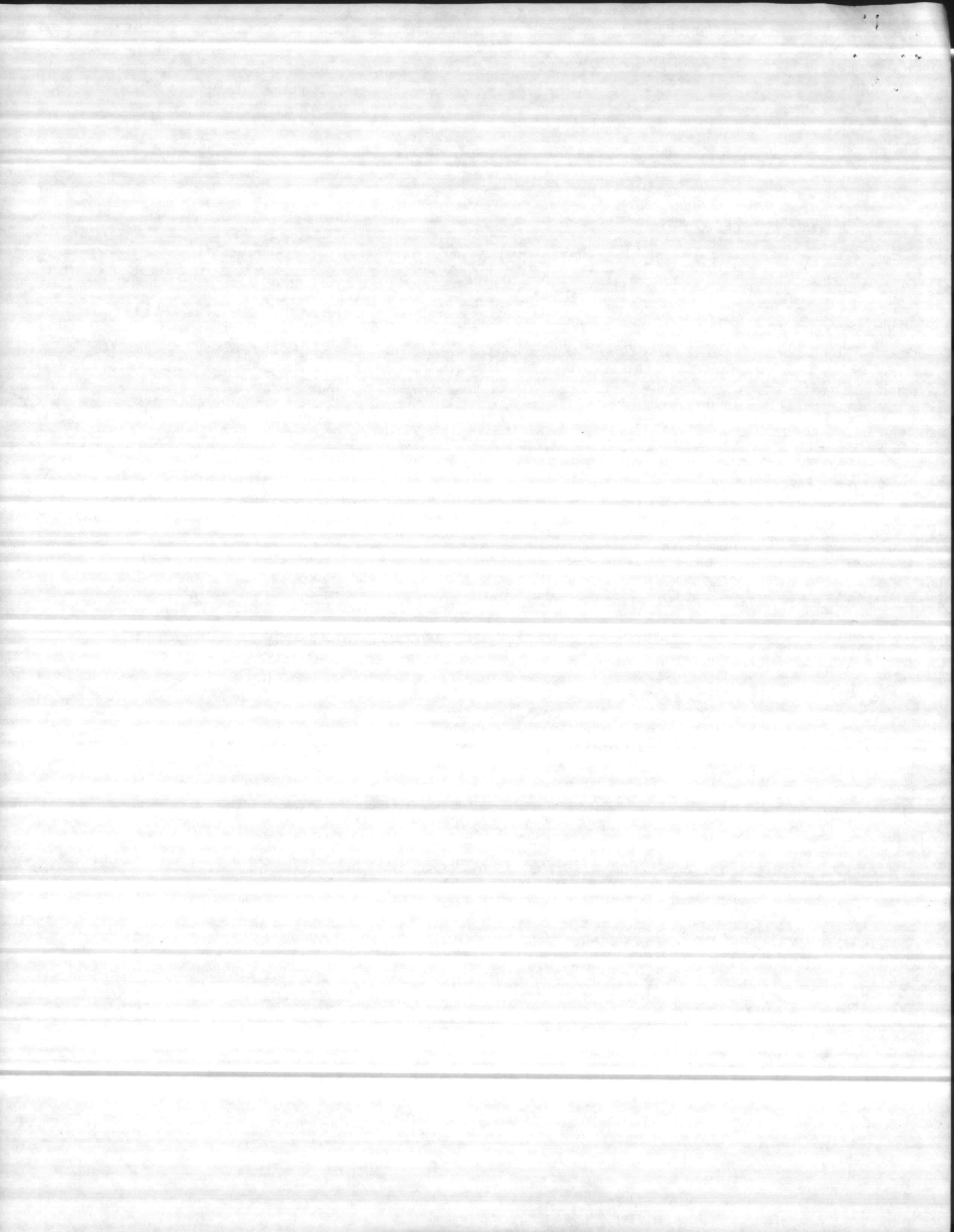


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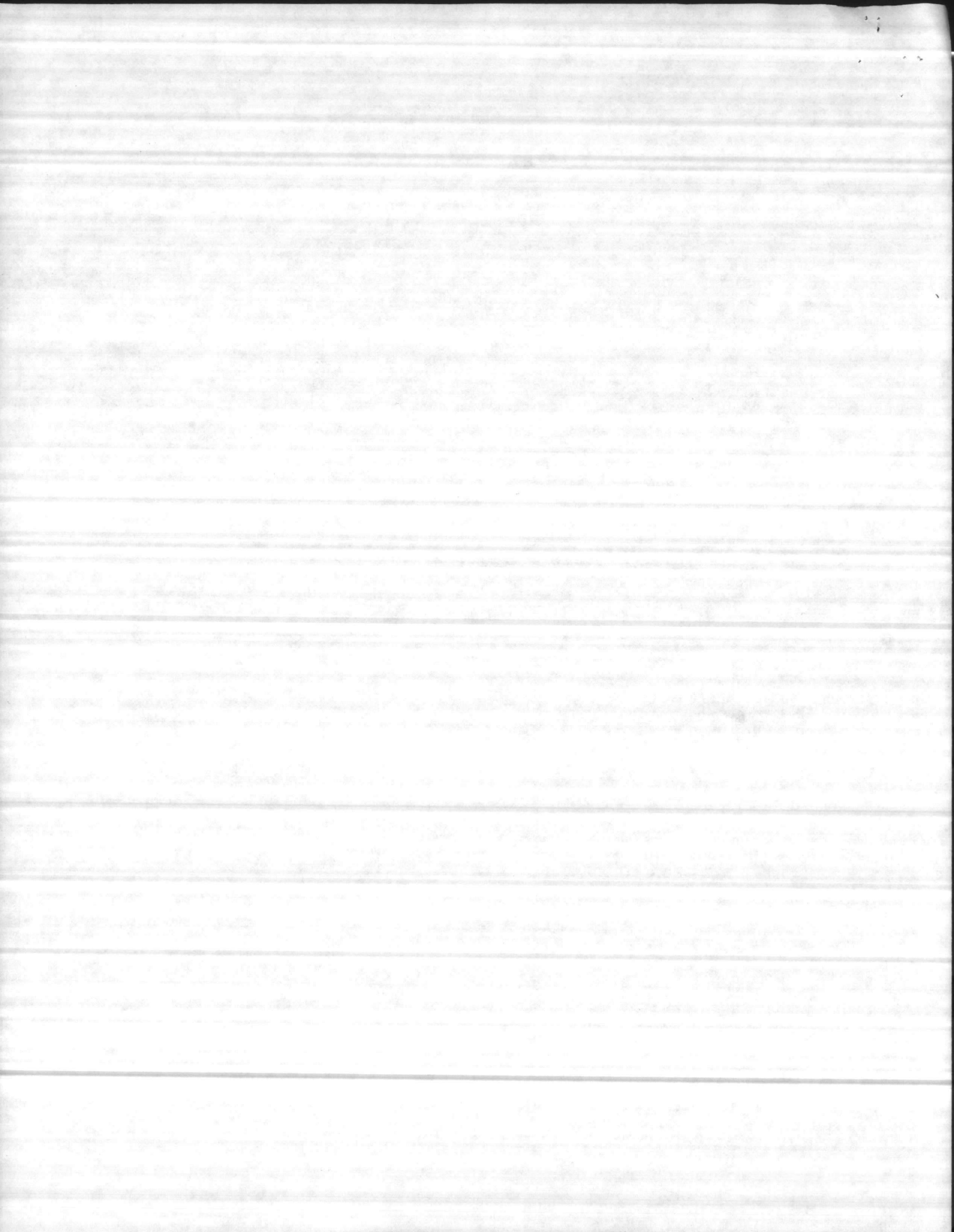
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INTRODUCTION

The sea turtle inventory for 1984 is a continuation of past efforts by Natural Resources and Environmental Affairs Division, Assistant Chief of Staff, Facilities, Marine Corps Base, Camp Lejeune, North Carolina, to protect sea turtle nesting activities at Onslow Beach. The sea turtle inventory consists of several programs including: nest protection, tagging of adult turtles, collecting nesting data, determining hatchling success and aerial surveys.

Management personnel began operating under a Federal Fish and Wildlife Permit during 1981, issued for working with threatened Loggerhead and Green Turtles. The permit authorizes the tagging and measurement of adults and the relocation of nests threatened by erosion, tides, extreme predation or military training activities. Nests may be moved only within 24 hours of egg laying to a safe beach location and not to a laboratory. Relocated nests are required to be monitored and hatchling success documented.

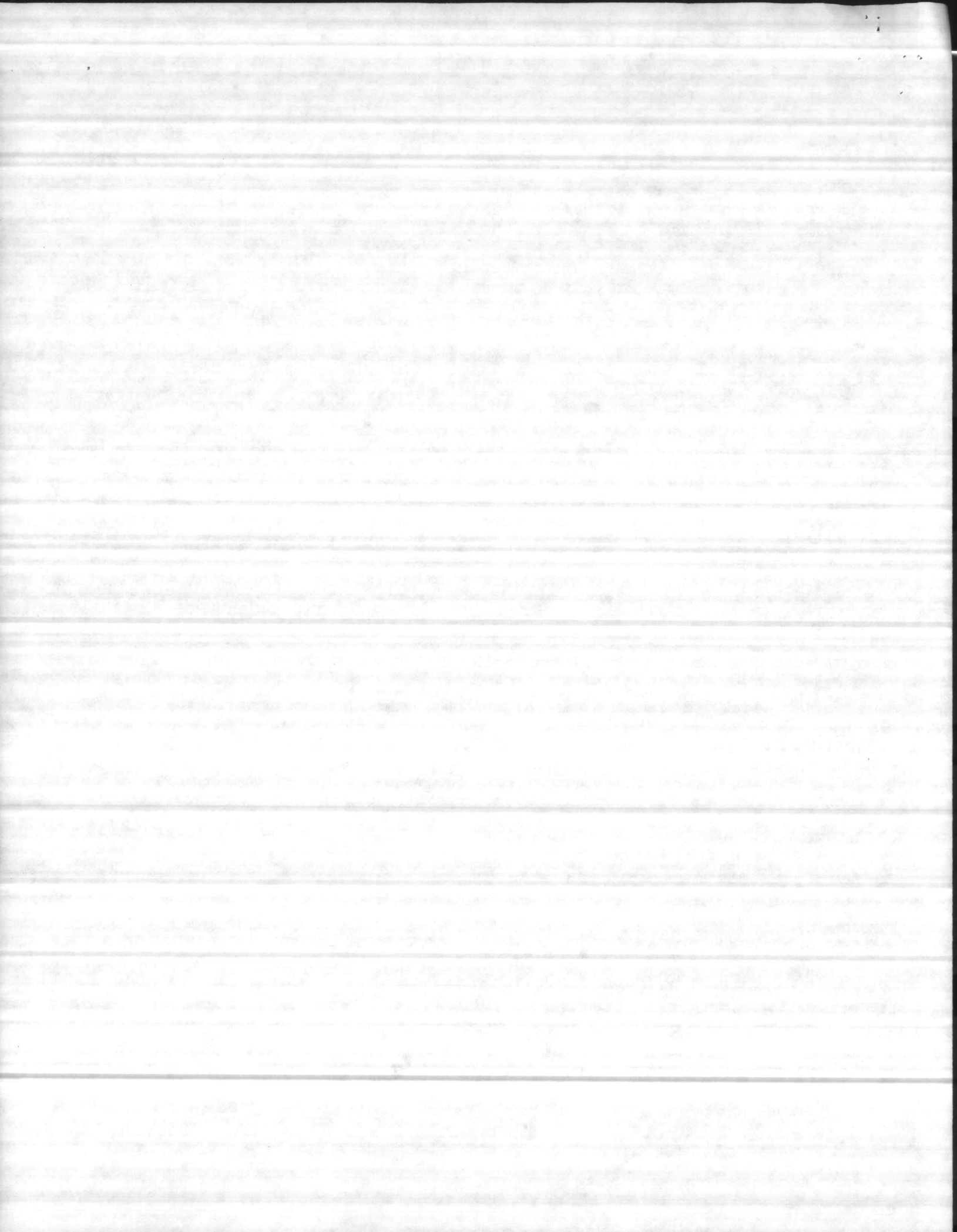
The results of the aforementioned program are as follows:

- a. Nest protection from predators, 63.
- b. Tagging of adults - number of turtles tagged 26.

Tag return data may be reviewed in Table II, page 9.

- c. Nesting data - Number of nests - 63.
- d. Total number of crawls - 121.
- e. Total number of eggs - 7,788.

- f. Total number of hatchlings - 4,484.



- g. Number of tag returns - 30.
- h. Number of stranded turtles - 4.
- i. Number of nests lost during Hurricane Diana - 2.
- j. Number of nests lost during abnormal high tides associated with northeast winds - 6.
- k. Number unhatched nests from unknown causes 5.

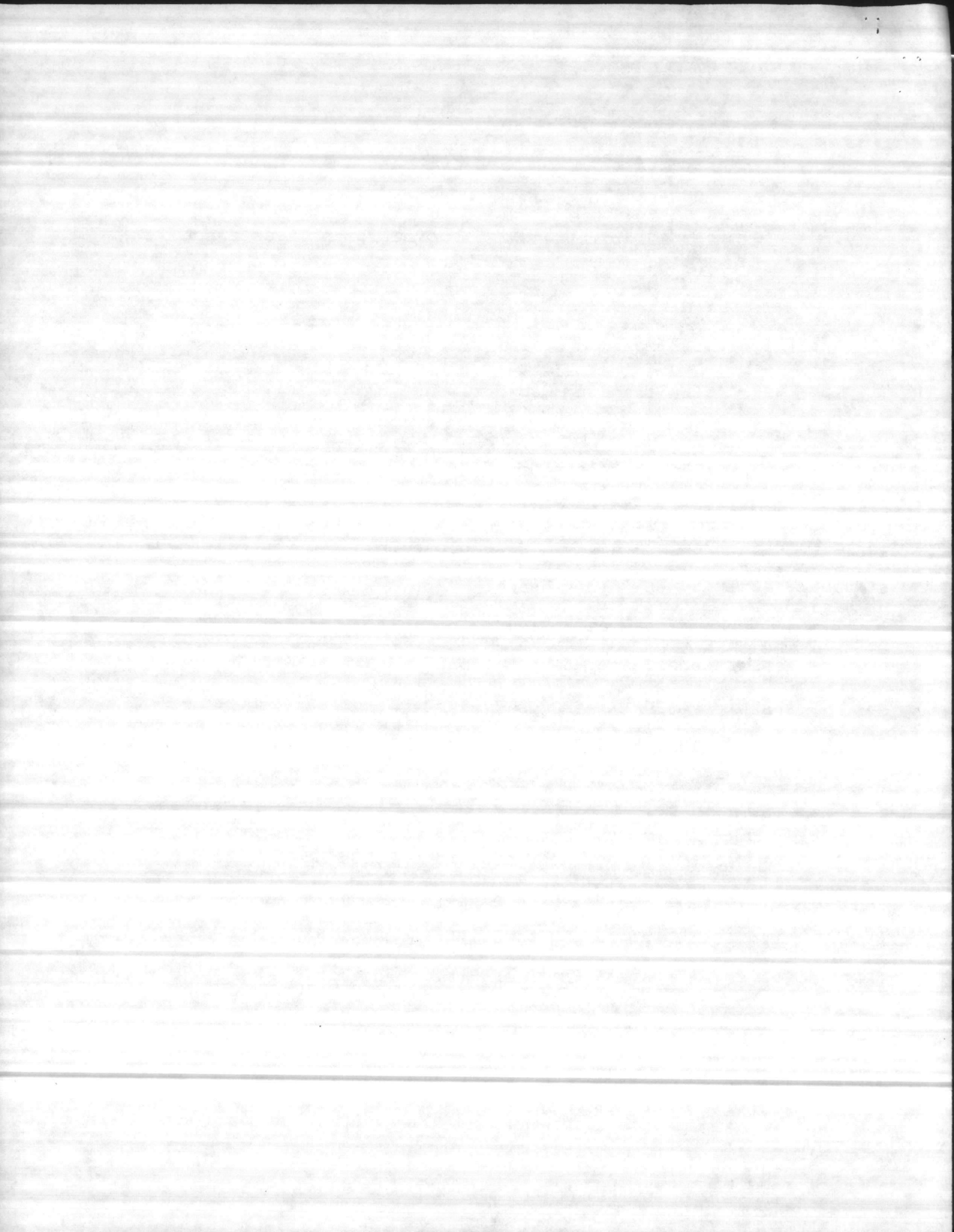
Stranding reports were submitted to the North Carolina Wildlife Resources Stranding Network Coordinator. Carcasses were buried on the beach.

Percent hatchling success is 57%; nesting and crawl data is compiled in Tables I, II, III, IV, and V, and Graphs I and II on pages 5 through 19. The enclosed maps indicate locations of turtle activity on Onslow Beach.

Aerial survey data may be found in Table IV, page 20.

The Marine Corps Base, Camp Lejeune and Natural Resources and Environmental Affairs Division give special thanks to Doctor F. J. Schwartz at the Institute of Marine Science, Morehead City for his advice and services.

For copies of this report or other information concerning the sea turtle management program conducted by this agency, contact: Commanding General, Marine Corps Base, Camp Lejeune, North Carolina 28542 Attention: Director, Natural Resources and Environmental Affairs Division, Assistant Chief of Staff, Facilities.

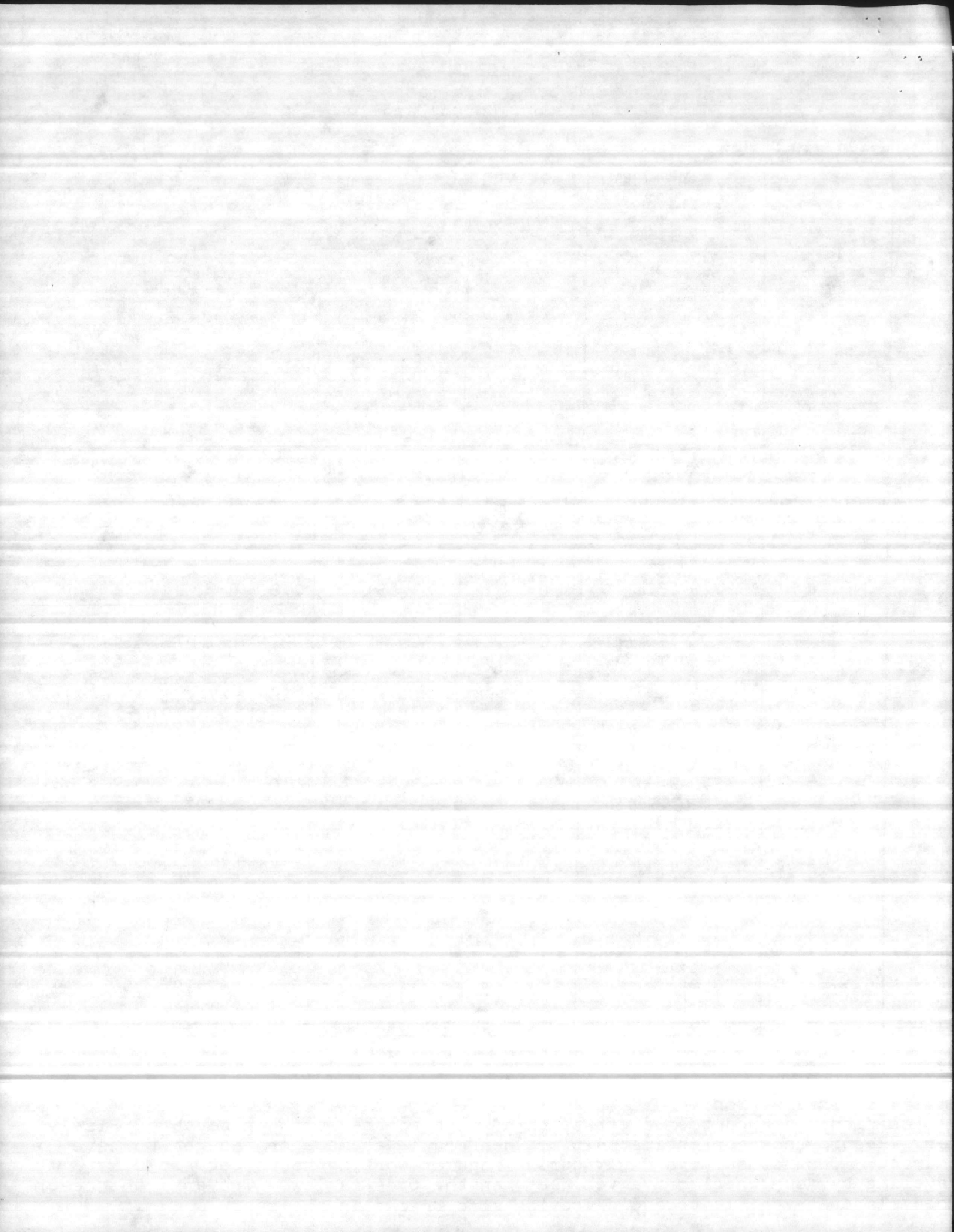


SEA TURTLE INVENTORY
(Crawl Data)
TABLE I
Marine Corps Base
Camp Lejeune, North Carolina

W1	Date	Time Crawl Occurred	Active Nest	Location*	Comments
1	5-23-84	0800-1130		-7N	C.O. (indicates Crawl Only)
2	5-23-84	0200	X	2.4S	Relocated to dunes 4 yds up. 143 eggs.
3	6-4-84	0900-1030	X	2.4S	Relocated to dunes 4 yds up. 13 yds.S. 133 eggs.
4	6-4-84	2100-0500		3.1N	C.O.
5	6-7-84	0300	X	2.5S	Relocated from .5S up 3 yds. 148 eggs.
6	6-8-84	2100-0500		3.4N	C.O.
7	6-9-84	2300	X	2.8S	Eggs 71 Tags AAR087, 088
8	6-9-84	0218	X	2.9N	Tags AAR 089, 090 Eggs 61
9	6-9-84	2100-2300		6S	C.O.
10	6-11-84	2100-0500		2.9S	C.O.
11	6-11-84	2100-0500		2.0N	C.O.
12	6-12-84	2230	X	2.8S	Rel. from .6S. Tags AAR 091, 092. Eggs 115
13	6-12-84	0030	X	3.1N	Eggs 137 Tags AAR 093, 094
14	6-12-84	2100-0500		3.4S	Tags AAR 095, 096
15	6-13-84	1300-1530		3.1S	C.O.
16	6-13-84	2100-0500		3.3N	C.O.
17	6-13-84	2230	X	3.3N	Tags AAR 097, 098 Eggs 155
18	6-13-84	2400	X	2.6S	Rel. From 3.S. Return AAR 095, 096. Eggs 98
19	6-13-84	2100-0500		.8S	C.O.
20	6-15-84	0010		1.25S	Tag AAR 099, 100
21	6-15-84	0020		1.4S	C.O.
22	6-15-84	0040		1.8S	Tag S.M.I. 803

Summary of Instruction:

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

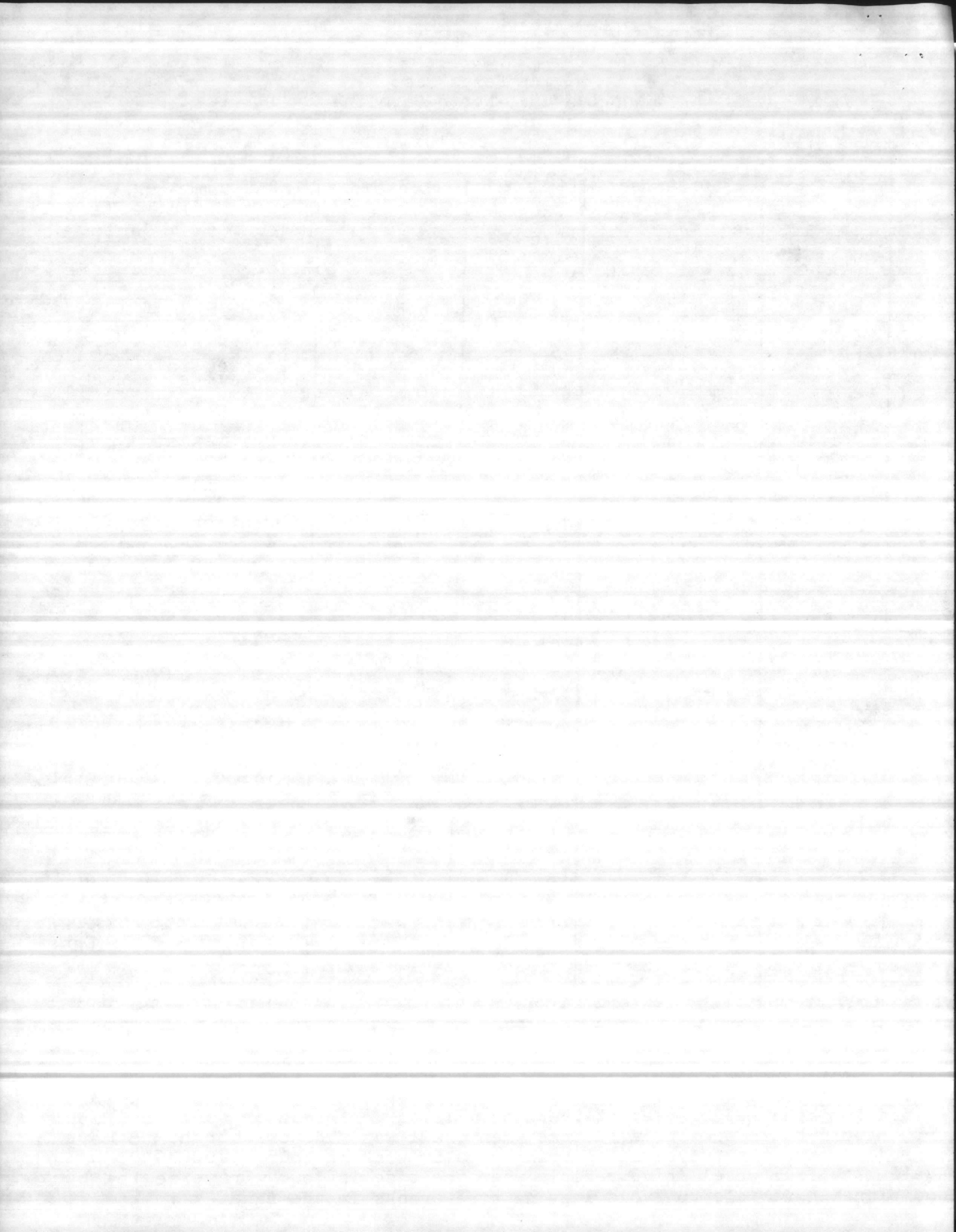


SEA TURTLE INVENTORY
(Crawl Data)
TABLE I
Marine Corps Base
Camp Lejeune, North Carolina

Crawl No.	Date	Time Crawl Occurred	Active Nest	Location*	Comments
33	6-26-84	2300	X	3.3N	Tag AAR 101, 102. Eggs 155 Relocated to dunes.
34	6-27-84	2300	X	2.3S	Tag AAR 103, 104. Eggs 53 Relocated to dunes.
35	6-27-84	0400		3.N	C.O.
36	6-27-84	0330	X	4.N	Relocated to dune. Eggs 138.
37	6-27-84	2200	X	2.9N	Relocated to dune. Eggs 16 Tag AAR 105, 106
38	6-27-84	2415		1.6S	Tag AAR 107, 108
39	6-28-84	2325	X	3.4S	Return Tag AAR 107, 108. Eggs 131.
40	6-28-84	0135	X	3.7N	Tags AAR 109, 110 Eggs 139
41	6-28-84	2330	X	3.4N	Return Tag 089, 090 Eggs 121
42	6-28-84	0020	X	2.0N	Return Tag AAR 097, 098. Eggs 152. Relocated f/1.2
43	6-28-84	0115		2.6S	Return Tag AAR 095, 096
44	6-28-84	0120		3.0S	C.O.
45	6-28-84	0355		1.8S	C.O.
46	6-27-84	2130	X	3.4N	Tag AAR 111, 112. Eggs 13 Relocated to dunes.
47	6-27-84	2330		1.8N	Return Tag AAR 093, 094 Relocated from 1.2S
48	6-27-84	2345	X	.2N	Ret. Tag 091, 092. Eggs 124
49	6-27-84	0100		2.9S	Return Tag AAR 095, 096
50	6-27-84	0340	X	3.75S	Relocated from 3.6S. Return Tag AAR 095, 096. Eggs 136.
51	6-28-84	2345	X	.6N	Relocated to dune. Return Tag AAR 093, 094. Eggs 132
52	6-28-84	2345	X	.6N	Relocated to dune. Tags AAR 113, 114. Eggs 91.
53	6-28-84	0100	X	2.1S	Tags AAR 115, 116. Eggs 144.

Summary of Instruction:

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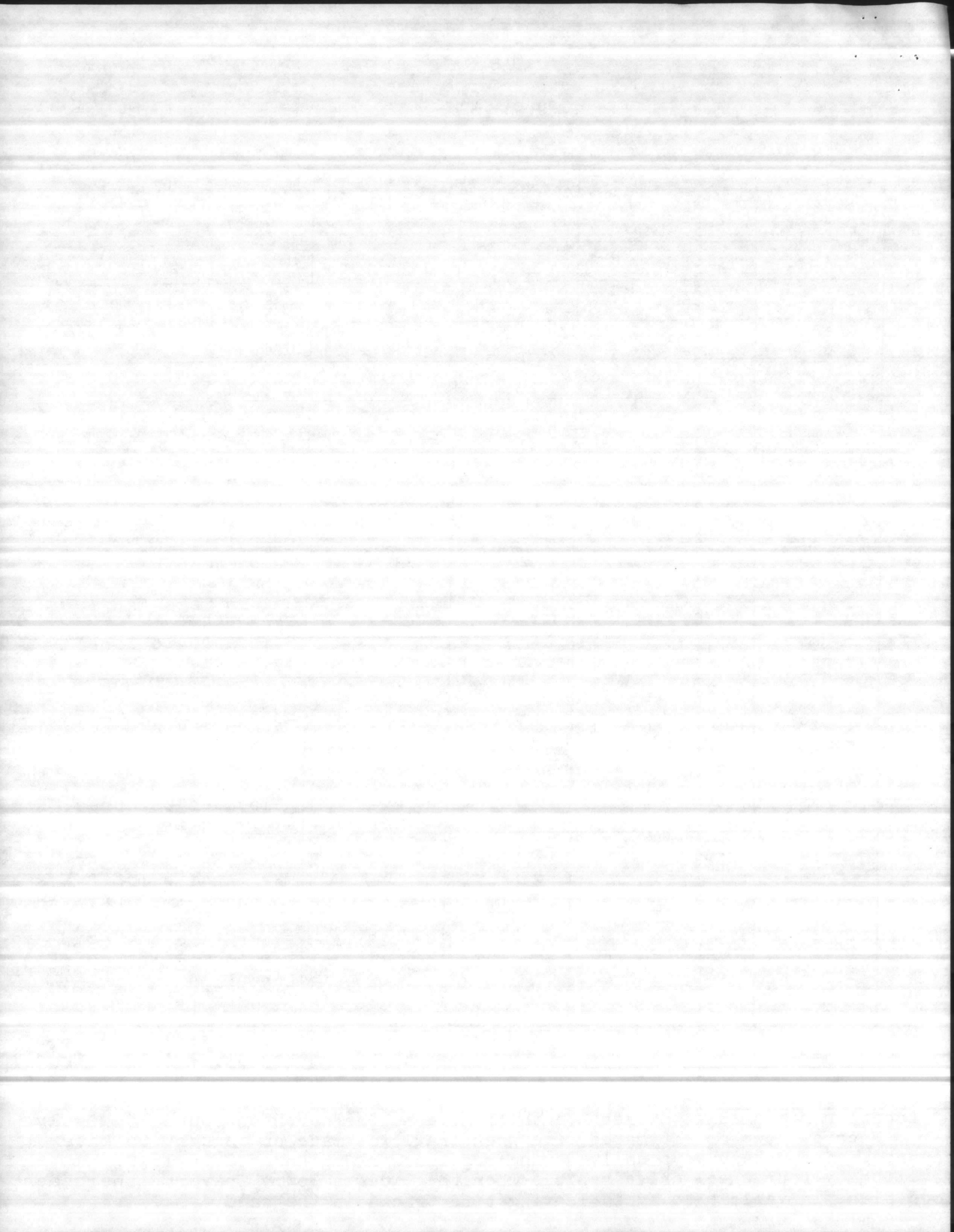


SEA TURTLE INVENTORY
(Crawl Data)
TABLE I
Marine Corps Base
Camp Lejeune, North Carolina

Crawl No.	Date	Time Crawl Occurred	Active Nest	Location*	Comments
44	6-28-84	0130		2.2S	C.O.
45	6-28-84	0130		2.3S	C.O.
46	6-28-84	0135		3.1S	C.O.
47	6-28-84	0225		.7S	C.O.
48	6-29-84	2330		3.6N	C.O.
49	6-29-84	2340		3.8N	C.O.
50	6-29-84	0040		1.6N	C.O.
51	6-29-84	2355		.3S	C.O.
52	6-30-84	0240	X	2.1N	Relocated from 2.4S Eggs 131
53	7-1-84	0030	X	2.1S	Relocated from 3.3S Eggs 159
54	7-4-84	2300	X	1.5S	return tags AAR 105, 106 Eggs 144
55	7-5-84	2230	X	2.3N	relocated to dune. Eggs 161
56	7-9-84	0100		1.1S	C.O.
57	7-9-84	0300	X	1.0N	Return Tag AAR 107, 108. Eggs 122
58	7-10-84	2307		.9S	C.O.
59	7-10-84	0200	X	3.2N	Relocated to dunes. Eggs 126. Tag AAR 097, 098.
60	7-11-84	2230	X	.2N	Tag AAR 117, 118. Relocated from .6S. Eggs 157
61	7-11-84	0020	X	3.7S	Tag AAR 119, 120. Relocated to dune 25m.N10M. Eggs 1
62	7-11-84	0310		2.2S	Return Tag AAR 091, 092.
63	7-12-84	0043	X	2.0S	Return Tag AAR 091, 092. Eggs 131
64	7-12-84	0120		3.7S	C.O.
65	7-15-84	2130	X	1.9N	Relocated 10m(S) to dune Tag AAR 121, 122. Eggs 11

Summary of Instruction:

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



SEA TURTLE INVENTORY
(Crawl Data)

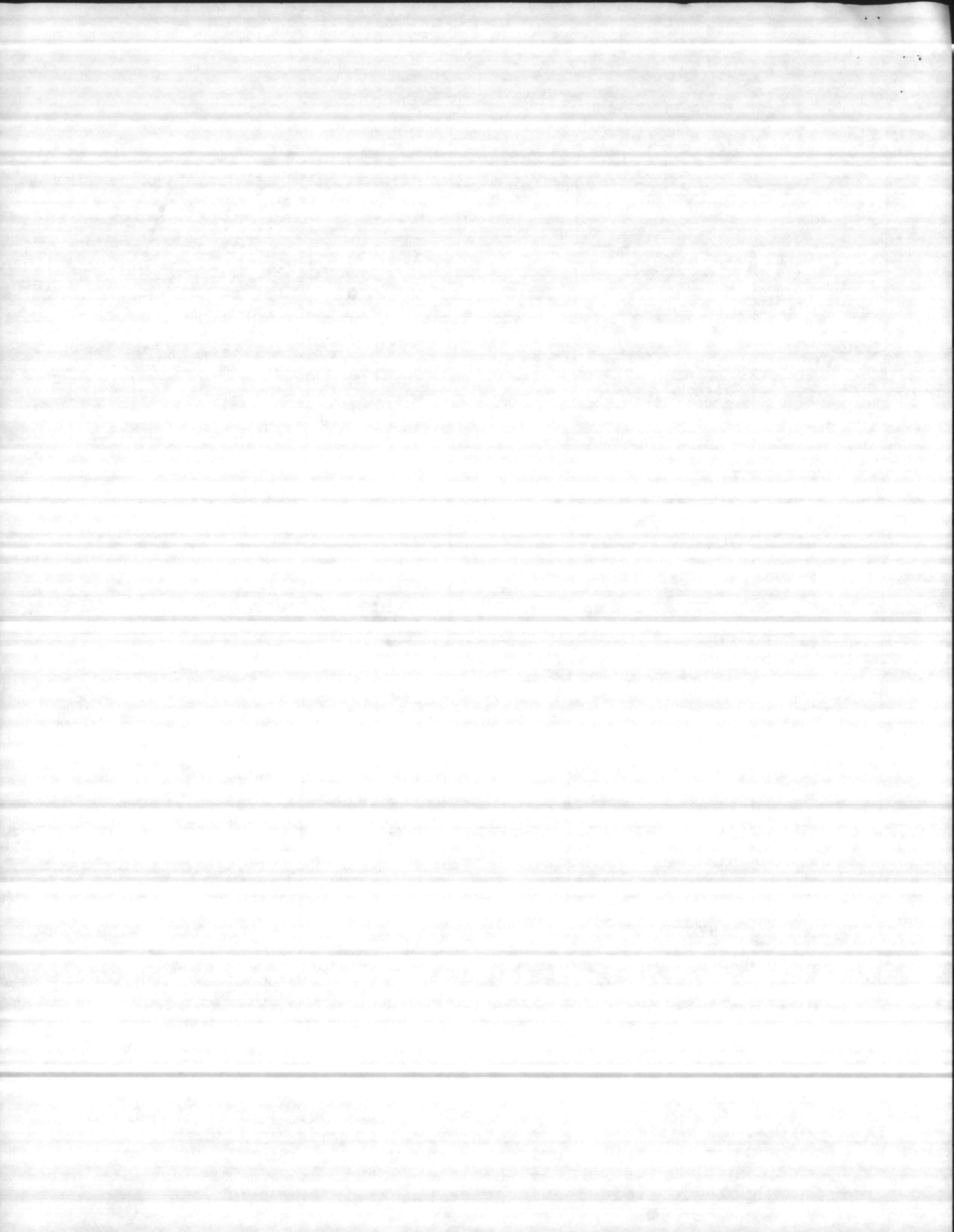
TABLE I

Marine Corps Base
Camp Lejeune, North Carolina

Crawl No.	Date	Time Crawl Occurred	Active Nest	Location*	Comments
66	7-16-84	2350		1.8N	Return Tag AAR 105,106.
67	7-16-84	0310		3.4N	Return Tag AAR 105, 106.
68	7-17-84	2215	X	2.9N	rel. to Dune. Return Tag AAR 105,106. Eggs 142.
69	7-22-84	0312	X	.8N	Rel. to Ocean side of Dune Tag AAR 123,124. Eggs 111
70					
71	7-23-84	2130	X	2.4N	Eggs - 140.
72	7-23-84	2330	X	3.2N	Return Tag AAR 097, 098. Eggs 130.
73	7-23-84	0030		.1N	Return Tag AAR 107, 108.
74	7-23-84	0050		3.1S	Return Tag AAR 119,120.
75	7-23-84	0228		2.9S	C.O.
76	7-23-84	0335	X	3.1S	Relocated to Dune. Return Tag AAR 119,120. Eggs 125
77	7-24-84	2320		3.3N	C.O. Tag AAR 125, 126.
78	7-24-84	0022	X	67M.N	Rel. from under Risely Pie Tag AAR 127,128. Eggs 129.
79	7-24-84	0120	X	.8N	Relocated from .4S. Eggs 130.
80	7-25-84	0057	X	3.6S	Return Tag AAR 125,126. Rel to dune. Eggs 118.
81	7-26-84	2200	X	.1N	Relocated from .6S. Return Tag AAR 099,100. Eggs 93
82	7-26-84	2255		3.2N	C.O.
83	7-26-84	0130	X	3.5N	Tag S.M.I. 803. Relocated to Dune. Eggs 89.
84	7-26-84	0230		2.6S	C.O.
85	7-27-84	0110		2.3N	C.O.
86	7-27-84	0126	X	.7N	Relocated to dune. Return Tag AAR 093,094. Eggs 12

Summary of Instruction:

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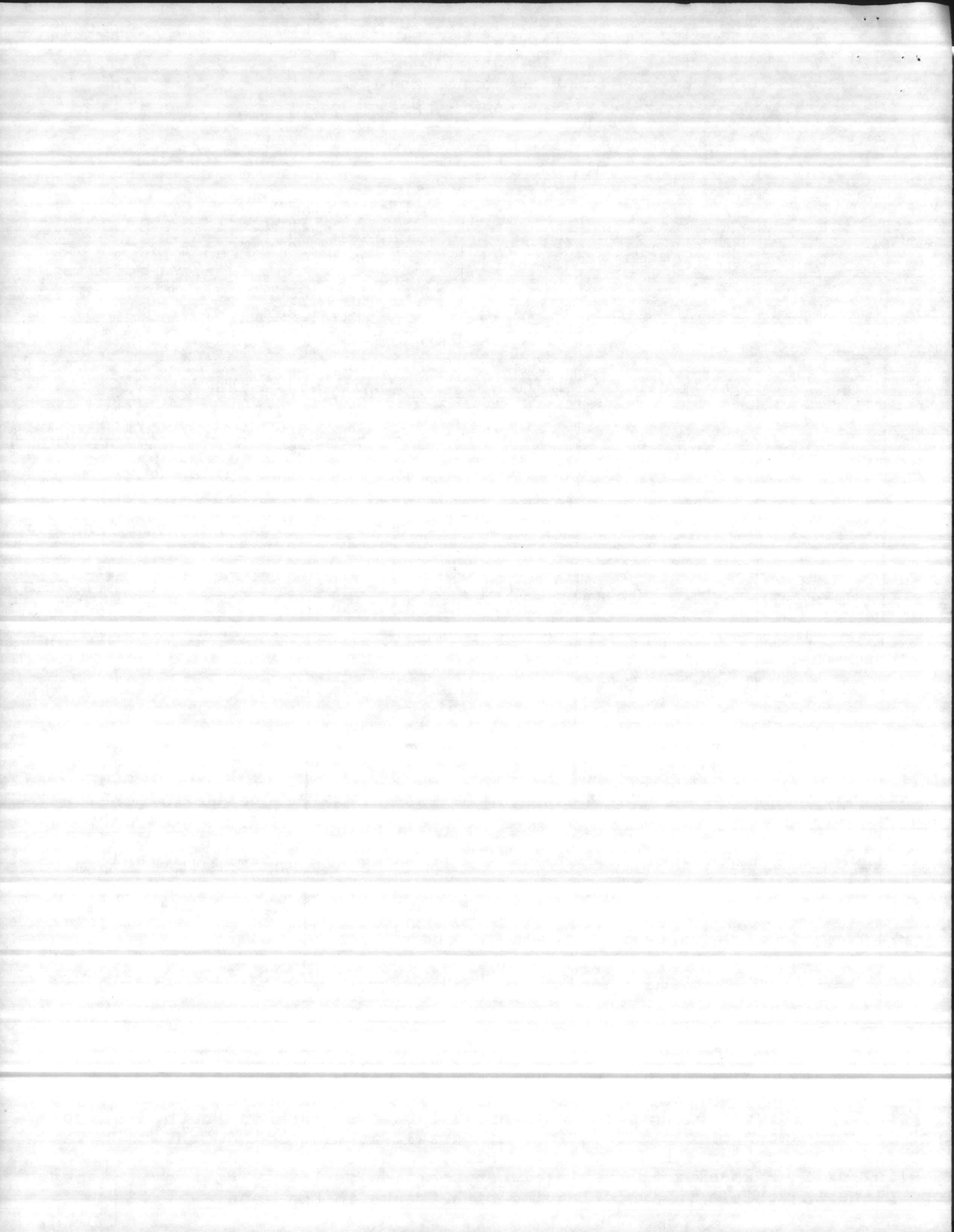


SEA TURTLE INVENTORY
(Crawl Data)
TABLE I
Marine Corps Base
Camp Lejeune, North Carolina

AWI No.	Date	Time Crawl Occurred	Active Nest	Location*	Comments
87	7-18-84	1134		1.0S	Return Tag AAR 129, 130.
88	7-28-84	1145	X	3.3S	Relocated 5MN to Dunes. Ret. Tag AAR 113, 114. Eggs 113.
89	7-28-84	0258	X	1.5N	Ret. Tag AAR 121, 122. Eggs 109.
90	7-28-84	2150	X	2.2N	Relocated to Dune. Eggs 115.
91	7-28-84	2230	X	2.1S	Eggs 144. C.O.
92	7-28-84	2330		2.9N	C.O.
93	7-28-84	0010	X	1.6N	Relocated to Dunes. Return Tag AAR 105, 106. Eggs 151.
94	7-28-84	0230	X	1.95N	Relocated from 1.1S. Eggs 114.
95	8-5-84	2151	X	1.2N	Relocated to Dune. Tag AAR 131, 132. Eggs 63.
96	8-5-84	0200		2.8S	Return Tag AAR 119, 120.
97	8-5-84	0330		2.7S	C.O.
98	8-6-84	2300		1.7N	Return Tag AAR 123, 124.
99	8-6-84	2341		3.3N	C.O.
00	8-6-84	0115	X	3.2N	Return Tag AAR 097, 098. Eggs 114.
01	8-6-84	0230	X	3.2N	Relocated from 2.9S. Return Tag AAR 119, 120. Eggs 129.
02	8-7-84	0320	X	3.5N	Relocated to Dune. Tag AAR 133, 134. Eggs 117.
03	8-12-84	2110	X	2.0N	C.O. found from prev. night 8-11-84. Eggs 134. Rel. to dunes.
04	8-12-84	2145		3.1N	C.O.
05	8-12-84	2300		2.0S	C.O.
06	8-12-84	0047		3.0S	C.O.
07	8-12-84	0055		3.1S	C.O.

Summary of Instruction:

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SEA TURTLE INVENTORY
(Crawl Data)
TABLE I
Marine Corps Base
Camp Lejeune, North Carolina

Crawl No.	Date	Time Crawl Occurred	Active Nest	Location*	Comments
1	8-11-84	0123		1.0N	C.O.
2	8-12-84	0220		1.6N	C.O. (Eggs 125)
3	8-13-84	2127	X	2.0N	Relocated from 1.7N. Return Tag AAR 093,094.
4	8-13-84	0115	X	1.8N	C.O. Relocated from 1.7S. Eggs 114.
5	8-17-84	2305	X	3.9N	Relocated to Dune. Tag AAR 135,136. Eggs 122.
6	8-17-84	0126		3.5S	C.O.
7	8-22-84	2140		1.9S	C.O.
8	8-22-84	0050		2.3N	C.O.
9	8-22-84	0140		2.4S	C.O.
10	8-22-84	0150	X	2.0N	Relocated to Dune. Tag AAR 137,138. Eggs 76.
11	8-23-84	2150		3.1N	C.O.
12	8-23-84	2310	X	.2N	Relocated from .4S. Return Tag AAR 107,108. Eggs 114.
13	8-24-84	2300	X	3.7S	C.O. Eggs 98.
14	8-24-84	2100/0500	X	3.2N	C.O. Eggs 133.

Summary of Instruction:

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

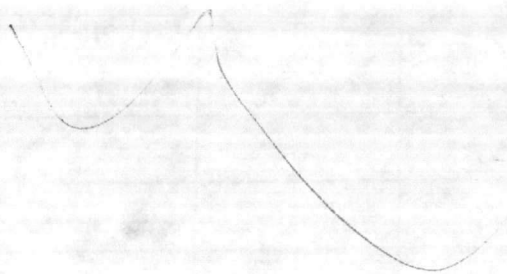


TABLE II

RETURN RECORD OF TAGGED TURTLES
1984 SEA TURTLE INVENTORY

<u>Date Tagged</u>	<u>Tag Number</u>	<u>Return</u>	<u>Return</u>	<u>Return</u>	<u>Return</u>
6-9-84 (2)	AAR 087, 088				
6-9-84 (2)	AAR 089, 090	6-26-84 (2)			
6-12-84 (2)	AAR 091, 092	6-27-84 (2)	7-12-84 (2)		
6-12-84 (2)	AAR 093, 094	6-28-84 (2)	7-27-84 (2)	8-13-84 (2)	
6-12-84 (2)	AAR 095, 096	6-13-84 (2)	6-27-84 (1)	7-27-84 (2)	
6-13-84 (2)	AAR 097, 098	6-26-84 (2)	7-10-84 (2)	7-23-84 (2)	8-6-84 (2)
6-15-84 (1)	AAR 099, 100	7-26-84 (2)			
6-16-84 (2)	AAR 101, 102				
6-17-84 (2)	AAR 103, 104				
6-22-84 (2)	AAR 105, 106	7-4-84 (2)	7-16-84 (1)	7-17-84 (2)	7-30-84 (2)
6-22-84 (1)	AAR 107, 108	6-23-84 (2)	7-9-84 (2)	7-23-84 (1)	8-23-84 (2)
6-23-84 (1)	AAR 109, 110				
6-27-84 (2)	AAR 111, 112				
6-28-84 (2)	AAR 113, 114	7-28-84 (2)			
6-28-84 (2)	AAR 115, 116				
7-11-84 (2)	AAR 117, 118				
7-11-84 (2)	AAR 119, 120	7-23-84 (1) (2)	8-5-84 (1)	8-6-84 (2)	
7-15-84 (2)	AAR 121, 122	7-28-84 (2)			
7-22-84 (2)	AAR 123, 124	8-6-84 (1)			
7-24-84 (1)	AAR 125, 126	7-25-84 (2)			
7-24-84 (2)	AAR 127, 128				
7-28-84 (1)	AAR 129, 130				
8-5-84 (2)	AAR 131, 132				
8-7-84 (2)	AAR 133, 134				

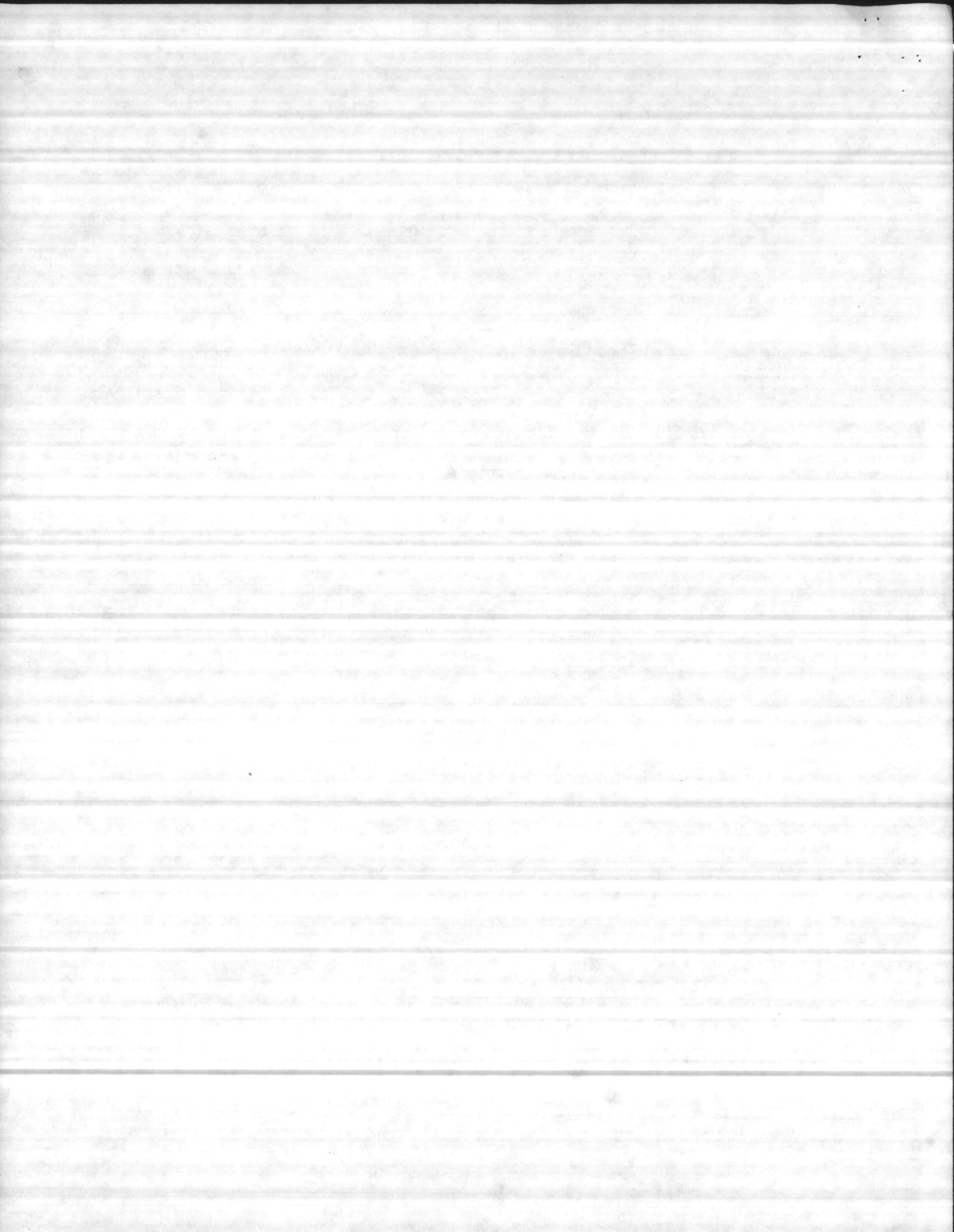


TABLE II (Cont'd)

Date Tagged	Tag Number	Return	Return	Return	Return
8-17-84 (2)	AAR 135, 136				
8-22-84 (2)	AAR 137, 138				
6-15-84 (1)	SMI 803 *	7-26-84 (2)			

(1) Did not nest

(2) Nested

* Scientific Marine Institute, Morehead City, North Carolina

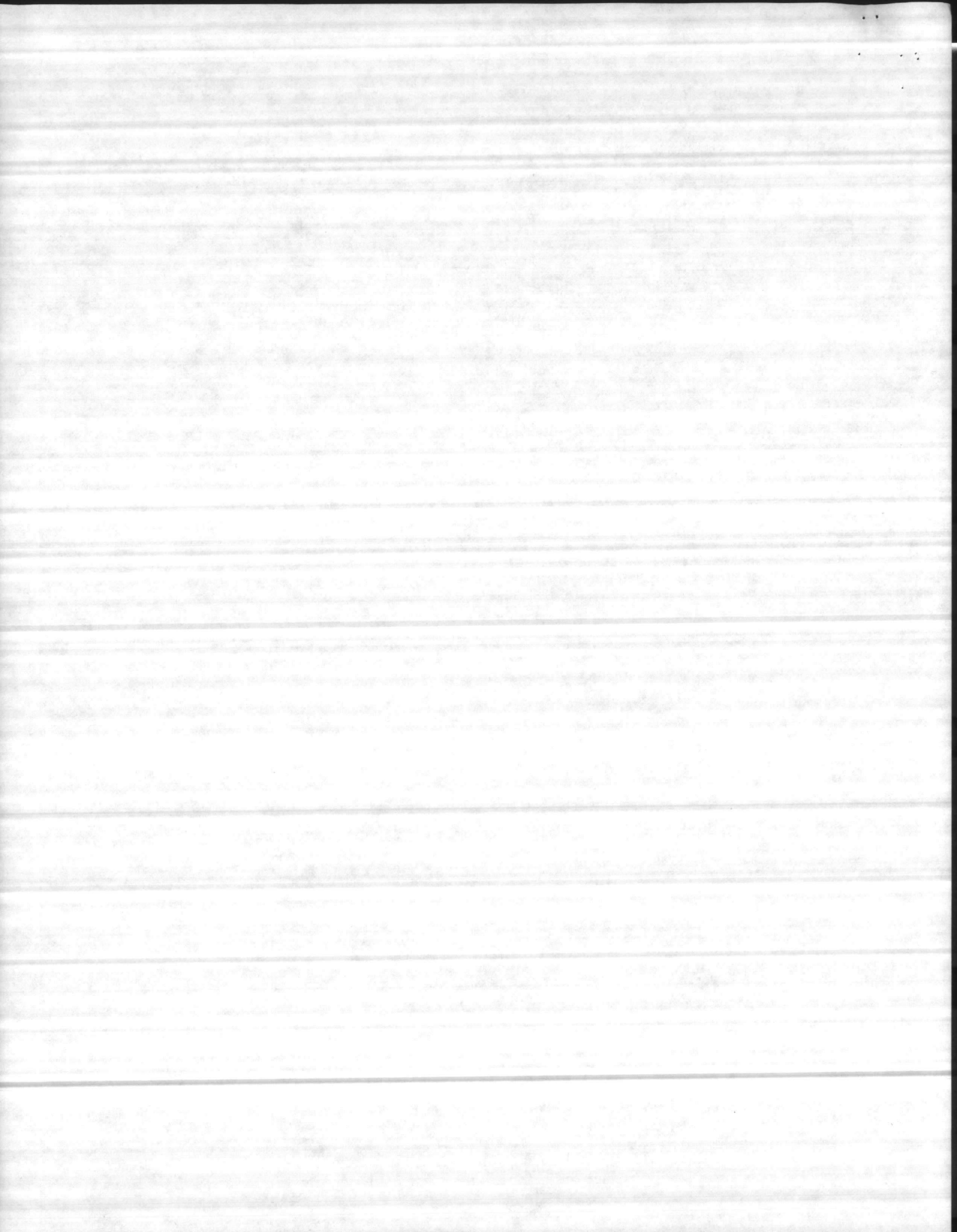


TABLE III

CRAWL INFORMATION IN RELATION TO MOON AND TIDAL CYCLES

Date	Moon Rise % Illumin.	Time of High Tide	Time Crawl W/O Nest	Time Crawl W/Nest	Total Crawls
6-23-84	0131 - 48%	0145	0800-1130		2
6-24-84	0158 - 38%	0139		0800-1200	1
6-24-84	1039 - 21%	2336	2100-0500		2
6-27-84	1406 - 54%	0236		0300	1
6-28-84	1513 - 65%	0341	2100-0500		1
6-29-84	1621 - 75%	0444	2100-0500	0300 2300	3
6-30-84	1838 - 92%	1905	2100-0500 2100-0500		2
7-1-84	1945 - 97%	1955	2100-0500	2230 0030	3
7-2-84	2049 - 100%	2042	1300-1530 2100-0500	2230 2400	5
7-3-84	2239 - 98%	2213	0010-0040 0020		3
7-4-84	2322 - 94%	2255		2300	2
7-5-84	2359 - 88%	2339	0400	2300	2
7-6-84	0125 - 54%	0247	0400	0330	2
7-7-84	0150 - 45%	1527	0005	2200	2
7-8-84	0215 - 36%	1617		2325 0145	2
7-9-84	0346 - 11%	1839	0115-0355 0120	2330 0030	5
7-10-84	0426 - 05%	1923	2330 0100	2130-0330 2345	5
7-11-84	0515 - 02%	2010	0130-0225 0130 0135	2345 0100 2345	7
7-12-84	0612 - 00%	2056	2330 2355 2340		3
7-13-84	0717 - 01%	2144		0245	1
7-14-84	0827 - 05%	2234		0030	1
7-15-84	1158 - 29%	0114		2300	1
7-16-84	1306 - 40%	2205		2230	1
7-17-84	1733 - 82%	0619	0100	0300	2

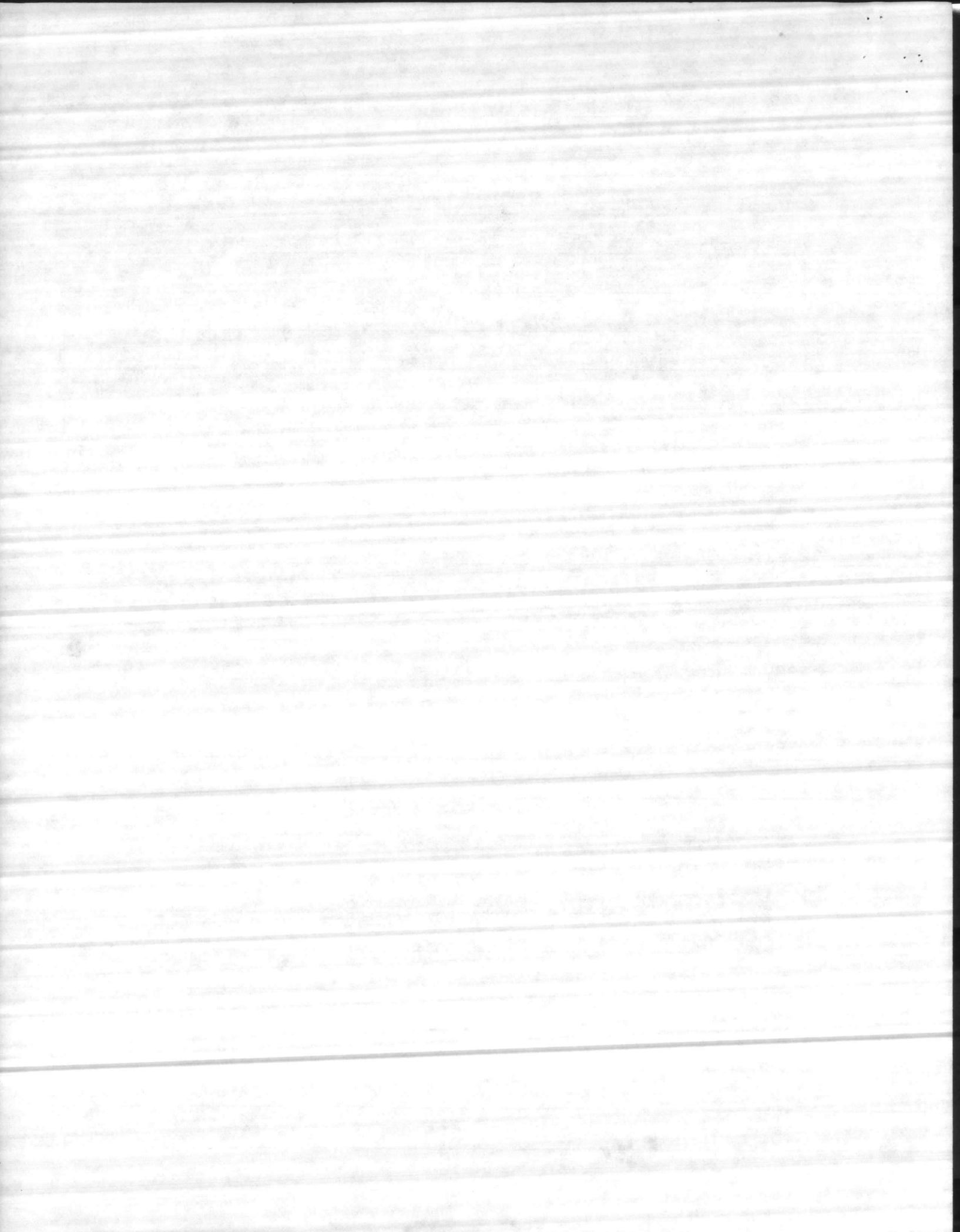


TABLE III

CRAWL INFORMATION IN RELATION TO MOON AND TIDAL CYCLES

Date	Moon Rise % Illumin.	Time of High Tide	Time Crawl W/O Nest	Time Crawl W/Nest	Total Crawls
-10-84	1838 - 90%	0114	2307	0200	2
-11-84	1938 - 95%	1940	0310	2230 0020	3
-12-84	2031 - 99%	2024	0120	0043	2
-15-84	2230 - 96%	2227		2130	1
-16-84	2300 - 92%	2306	2350 0310		2
-17-84	2326 - 86%	2344		2215	1
-22-84	0110 - 42%	0344		0312	1
-23-84	0141 - 32%	1622	0030 0227 0050	2130 0335 2330	6
-24-84	0218 - 23%	1716	2320	0022 0120	3
-25-84	0303 - 15%	0630		0057	1
-26-84	0356 - 08%	1759	2255 0230	2200 0130	4
-27-84	0458 - 03%	1949	0110	0126	2
-28-84	0507 - 00%	2038	1134	1145 0258	3
-29-84	0607 - 01%	2129	2330	2150 2330	3
-30-84	0834 - 03%	2117		0010	1
-31-84	0946 - 09%	2307		0230	1
3-5-84	1526 - 60%	0403	0200 0330	2151	3
3-6-84	1631 - 70%	0509	2300 2341	0115 0230	4
3-7-84	1732 - 79%	0607		0320	1
3-12-84	2101 - 100%	2122	2145 0047 0123 2300 0055 0220	2110	7
3-13-84	2129 - 98%	2159		2127 0115	2
3-17-84	2310 - 76%	2422		2305	1
3-21-84	- 38%	0405	0126		1
3-22-84	0141 - 28%	2311	2140 0140 0050 0150		4

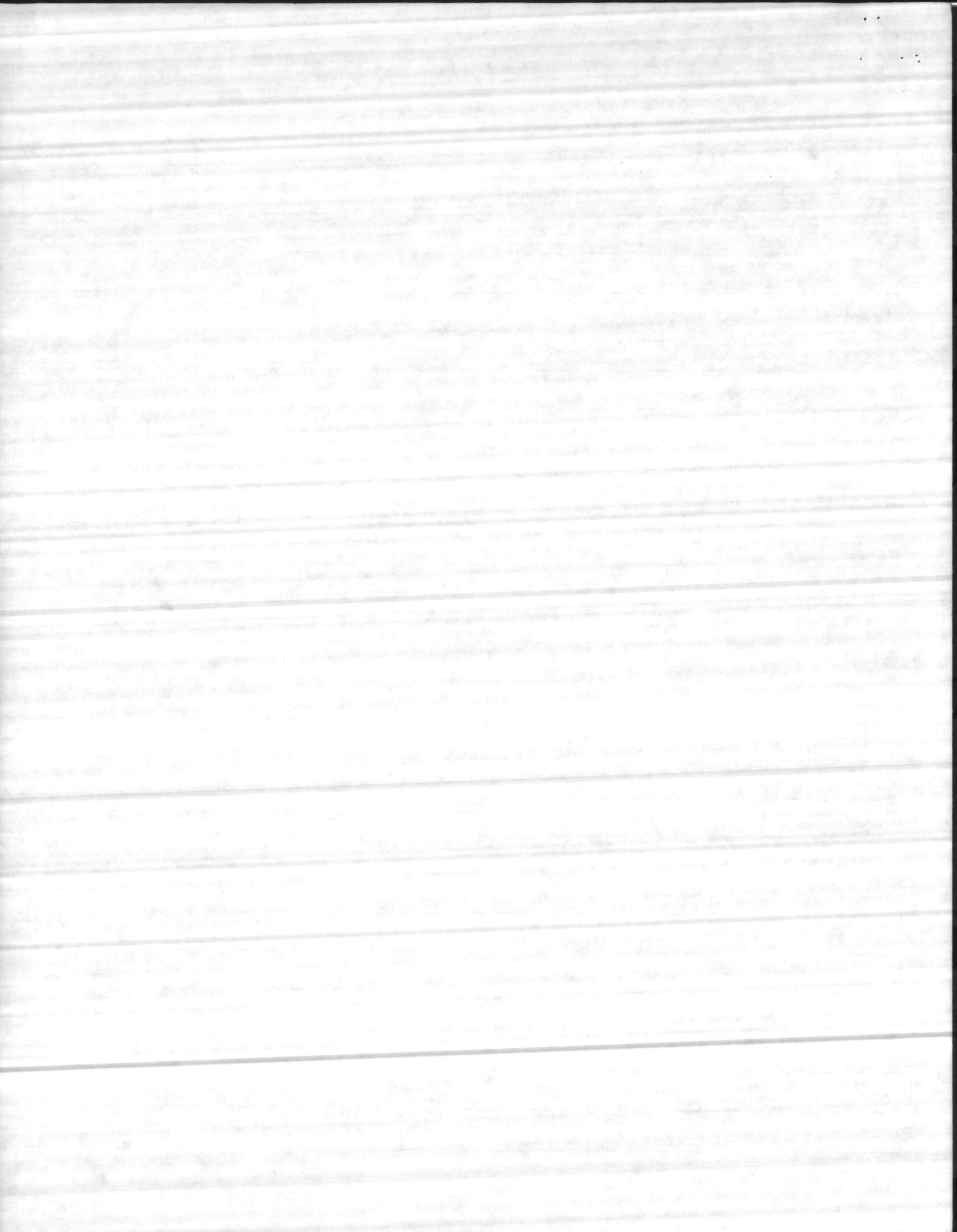


TABLE III

CRAWL INFORMATION IN RELATION TO MOON AND TIDAL CYCLES

Date	Moon Rise % Illumin.	Time of High Tide	Time Crawl W/O Nest	Time Crawl W/Nest	Total Crawls
8-23-84	0238 - 19%	1742	2120	2310	2
8-24-84	0343 - 11%	1839		2300	1
8-30-84	1000 - 15%	2342		2100/0500	1

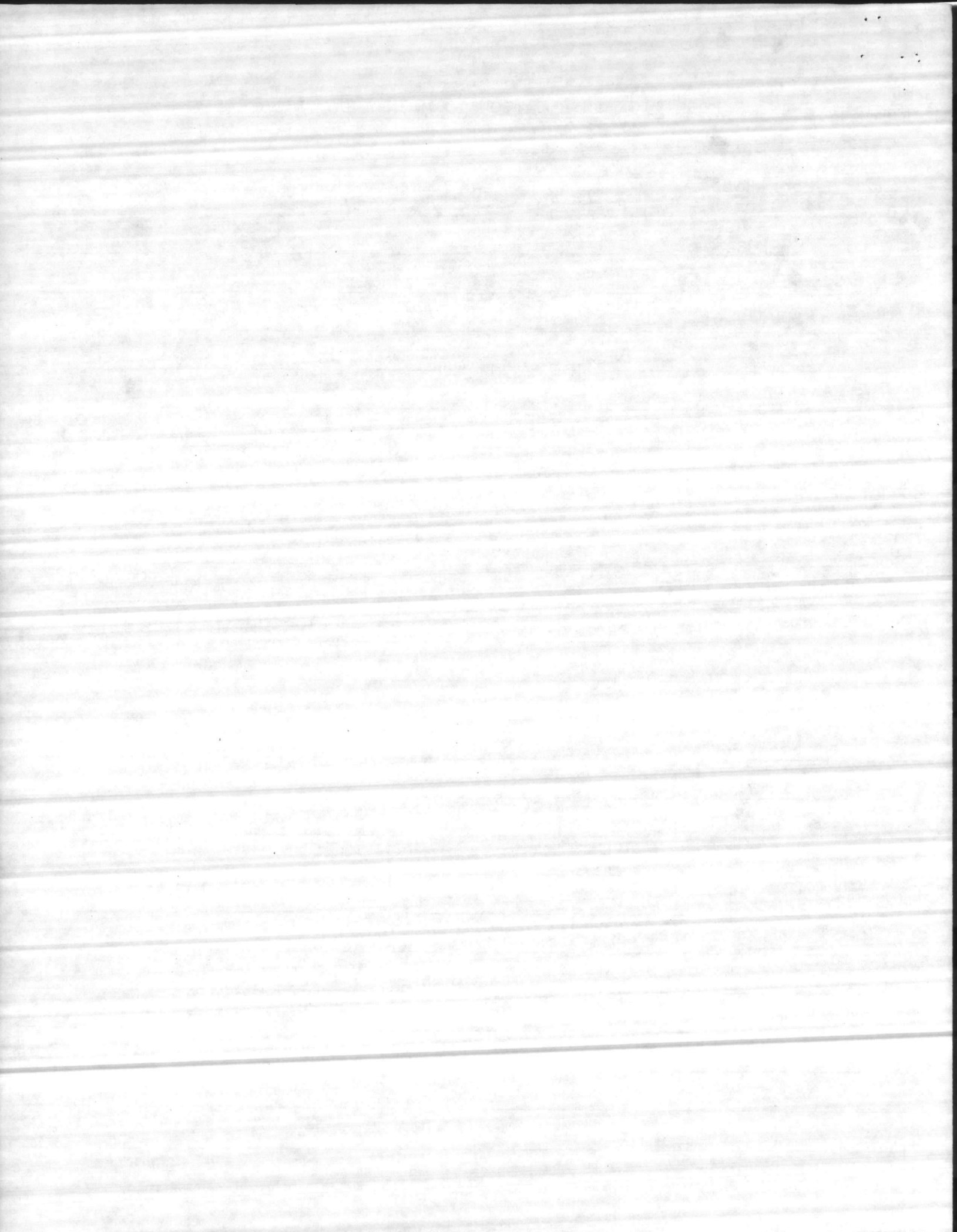


TABLE IV

GROUND SURVEY NUMBER

(Nights not separated at Midnight)

<u>Date</u>	<u>Crawls/No Nest</u>	<u>Crawls/Nest</u>	<u>Total</u>
6-4-84	1	1	2
6-5-84	0	0	0
6-6-84	0	0	0
6-7-84	0	1	1
6-8-84	1	0	1
6-9-84	1	2	3
6-10-84	0	0	0
6-11-84	2	0	2
6-12-84	1	2	3
6-13-84	3	2	5
6-14-84	0	0	0
6-15-84	3	0	3
6-16-84	0	1	1
6-17-84	1	1	2
6-18-84	0	0	0
6-19-84	0	0	0
6-20-84	0	0	0
6-21-84	1	1	2
6-22-84	1	1	2
6-23-84	0	2	2
6-24-84	0	0	0
6-25-84	0	0	0
6-26-84	3	2	5
6-27-84	2	3	5
6-28-84	4	3	7
6-29-84	3	0	3
6-30-84	0	1	1
7-1-84	0	1	1
7-2-84	0	0	0
7-3-84	0	0	0
7-4-84	0	1	1
7-5-84	0	1	1
7-6-84	0	0	0
7-7-84	0	0	0
7-8-84	0	0	0
7-9-84	1	1	2
7-10-84	1	1	2
7-11-84	1	2	3
7-12-84	1	1	2
7-13-84	0	0	0
7-14-84	0	0	0
7-15-84	0	1	1
7-16-84	2	0	2
7-17-84	0	1	1
7-18-84	0	0	0
7-19-84	0	0	0

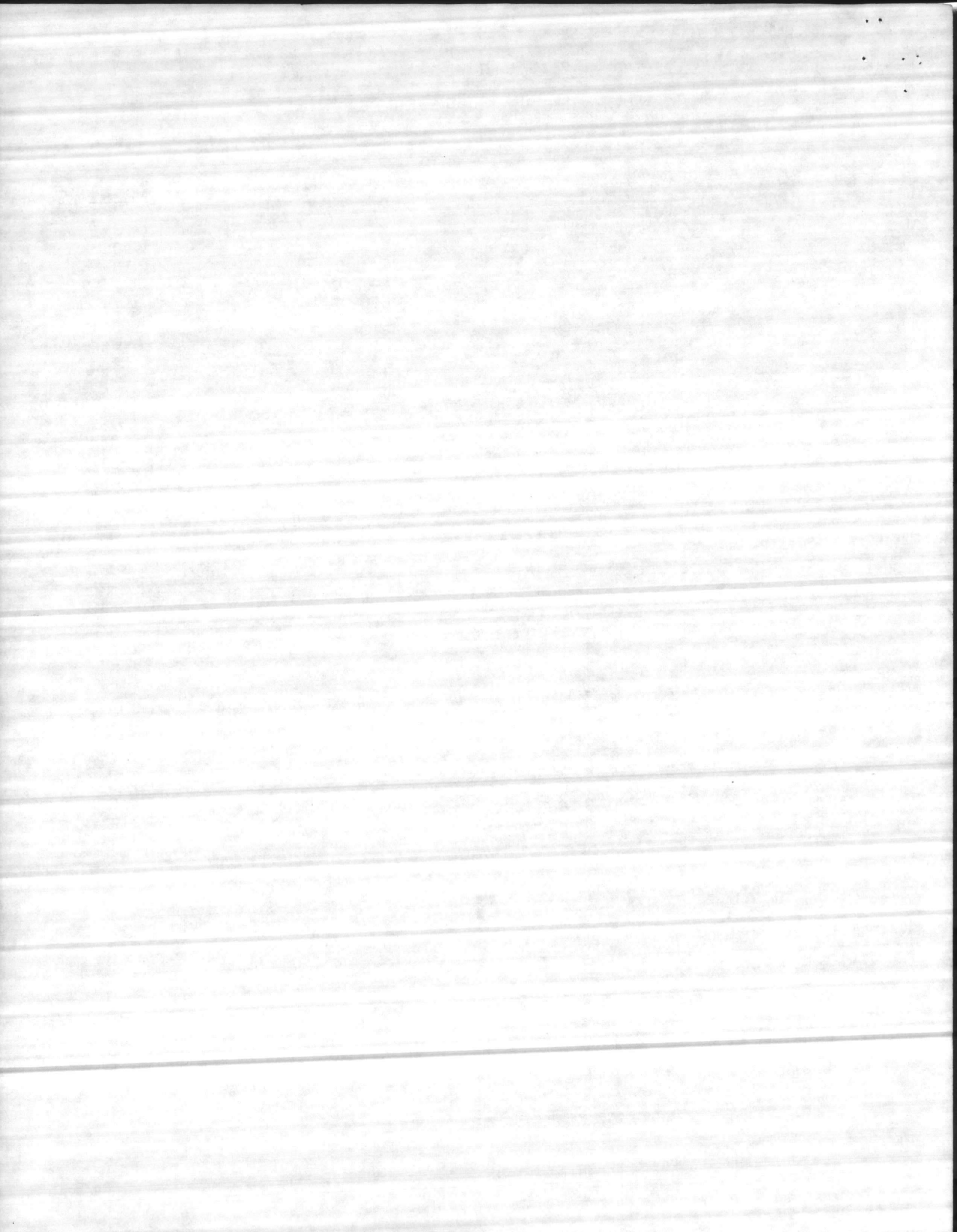
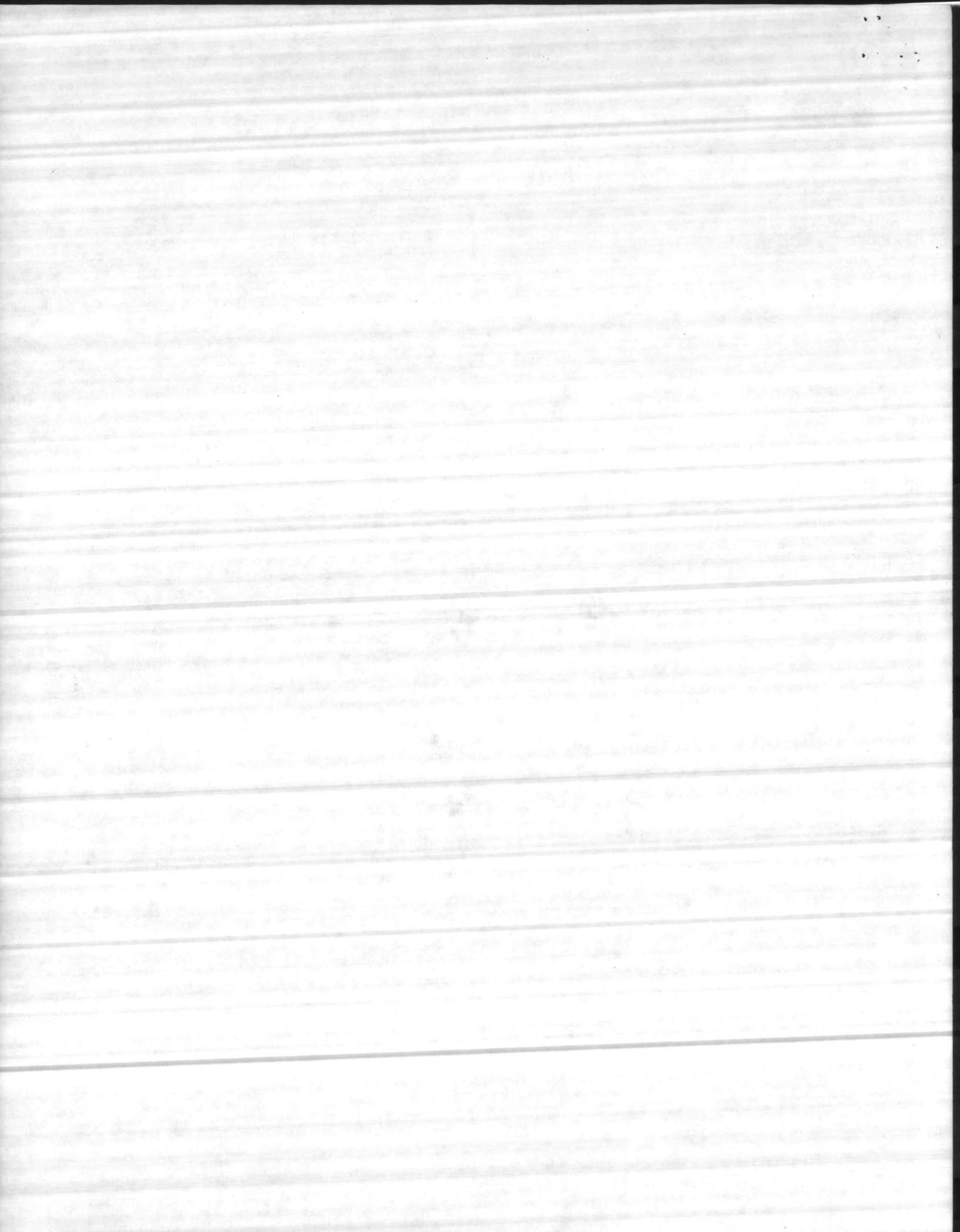


TABLE IV (cont'd)

<u>Date</u>	<u>Crawls/No Nest</u>	<u>Crawls/Nest</u>	<u>Total</u>
7-20-84	0	0	0
7-21-84	0	0	0
7-22-84	0	1	1
7-23-84	3	3	6
7-24-84	1	2	3
7-25-84	0	1	1
7-26-84	2	2	4
7-27-84	1	1	2
7-28-84	1	2	3
7-29-84	1	2	3
7-30-84	0	1	1
7-31-84	0	1	1
8-1-84	0	0	0
8-2-84	0	0	0
8-3-84	0	0	0
8-4-84	0	0	0
8-5-84	2	1	3
8-6-84	2	2	4
8-7-84	0	1	1
8-8-84	0	0	0
8-9-84	0	0	0
8-10-84	0	0	0
8-11-84	0	0	0
8-12-84	6	1	7
8-13-84	0	2	2
8-14-84	0	0	0
8-15-84	0	0	0
8-16-84	0	0	0
8-17-84	0	1	1
8-18-84	0	0	0
8-19-84	0	0	0
8-20-84	0	0	0
8-21-84	1	0	1
8-22-84	4	0	4
8-23-84	1	1	2
8-24-84	0	1	1
8-25-84	0	0	0
8-26-84	0	0	0
8-27-84	0	0	0
8-28-84	0	0	0
8-29-84	0	0	0
8-30-84	0	1	1
8-31-84	0	0	0



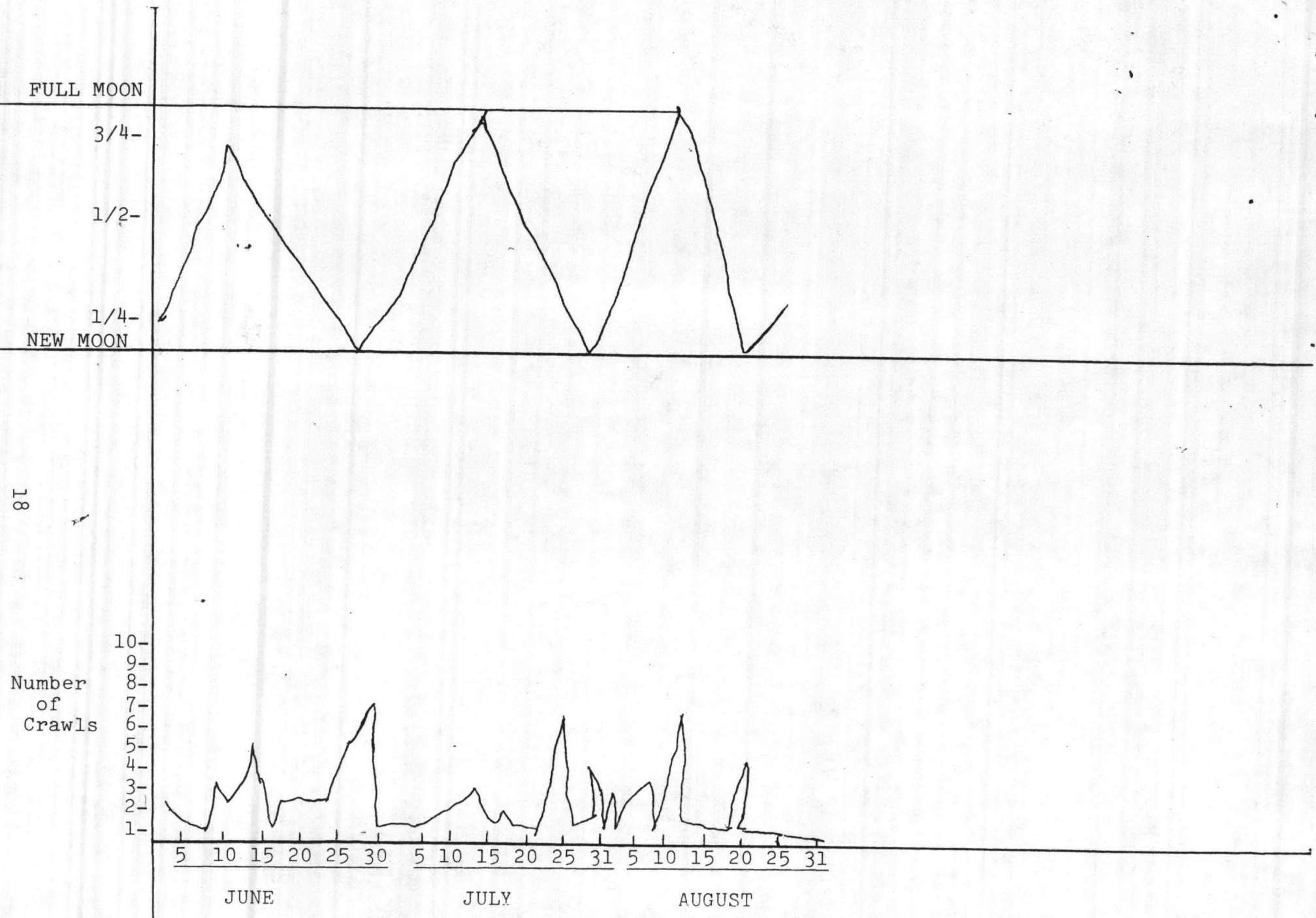


FIG. 1 - CRAWLS IN RELATION TO LUNAR CYCLE



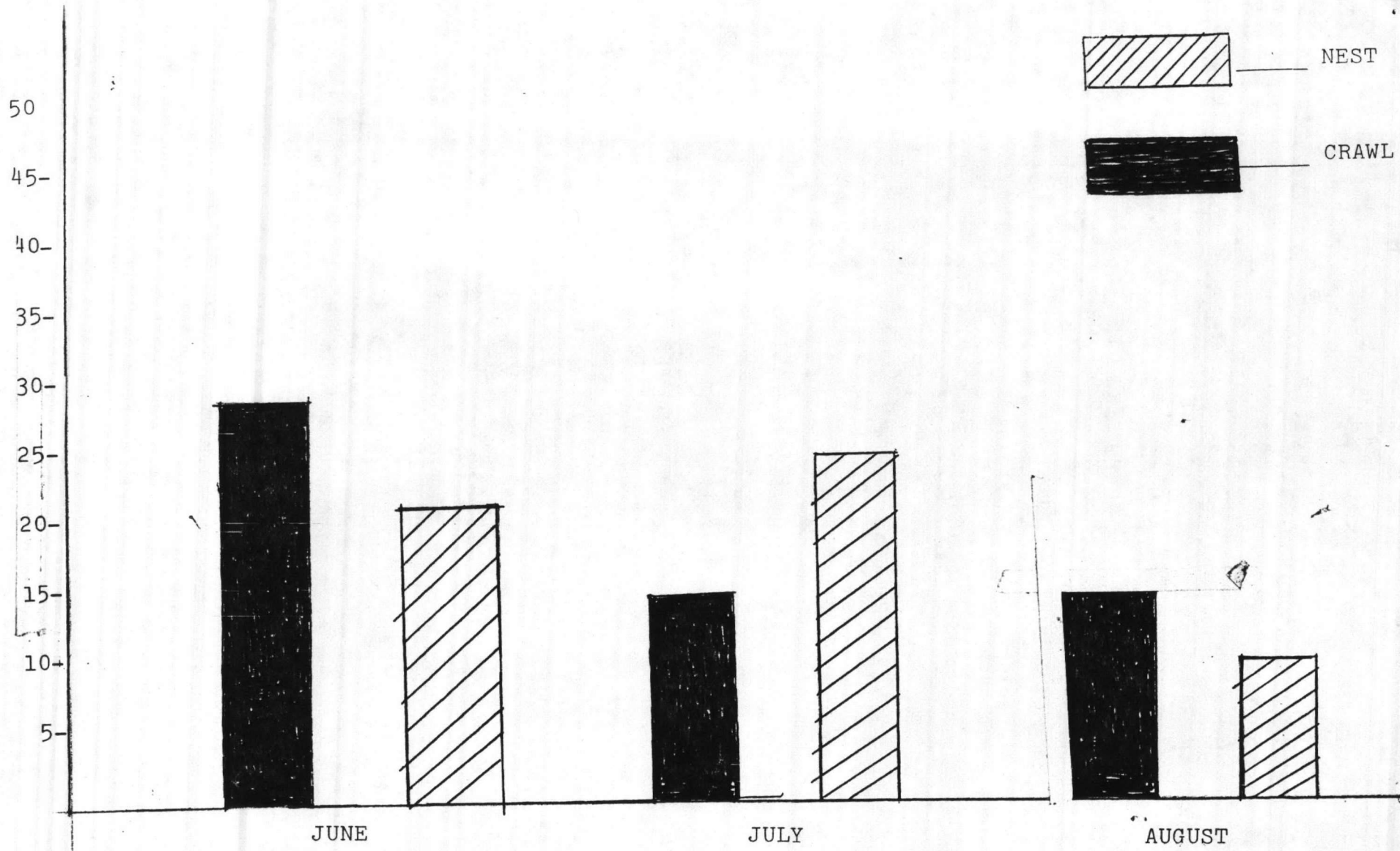


FIG. 2 - TOTAL CRAWLS AND NESTS BY MONTHS



TABLE V

AERIAL SURVEY

ONSLow BEACH

BROWNS ISLAND

BEAR ISLAND

Date	NC	OC	NN	ON	NP	OP	NC	OC	NN	ON	NP	OP	NC	OC	NN	ON	NP	OP	Weather
5-25-84																			Fog/Clear
5-29-84							1		1				1		1				Clear
5-31-84																			Foggy/Overcast
6-5-84	1		1				1	1	1	1				1		1			Fog/Haze/Clear
6-7-84	1	1	1	1			3	3	2	3			3	2	3	2			Broken
6-12-84	1	1	1				4	4	2					2		2	2		Fog/Clear
6-14-84	5	2	5	2	1		6	4	5	4			2	1	2	1			Haze/Clear
6-19-84	4	2	2	2			2		2				4	1	3	1			Clear
6-21-84							2	2	2	2			2	2	2	2			Foggy/Clear
6-26-84	7	2	7	2			4	1	4	1			1						Clear
6-28-84	2	4	2	4			4		3				3		3				Fog/Haze/Overcast
7-3-84	2		2				1		1				1	1	1	1			Scattered
7-6-84	4		4				2		2				2		2				Clear
7-11-84	2		2					2		2									Foggy/Clear
7-13-84		1		1			3		3				2		2				Fog/Overcast
7-17-84	2		2										2		2				Clear
7-20-84							2		2				2		1				LtRain/Overcast
7-24-84	11		8				5	2	5	2			3		3				Foggy/Clear
7-27-84	7	1	7	1			4		4				4	1	4	1			Haze/Broken
8-2-84	3		3				13		13				7		7				Fog/Haze/Scattered
8-7-84	5		5				2		2				3		3				Haze/Fog/Clear
8-9-84	7	1	6	1				2		2			3	2	3	2			Fog/Haze/Clear
8-14-84	3		3				2		2				2		2				Haze/Clear
8-17-84							2	2	2	2				1		1			Clear/Obscured
8-21-84													1	1					Haze/Broken
8-23-84	4		4				1		1				2		2				Haze/Sctd/Brkn
8-27-84		1		1			1		1										Clear
8-30-84																			Clear



SEA TURTLE Inventory
for
Summer and Fall 1984

NATURAL RESOURCE AND ENVIRONMENTAL AFFAIRS DIVISION
ASSISTANT CHIEF OF STAFF, FACILITIES
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA 28542

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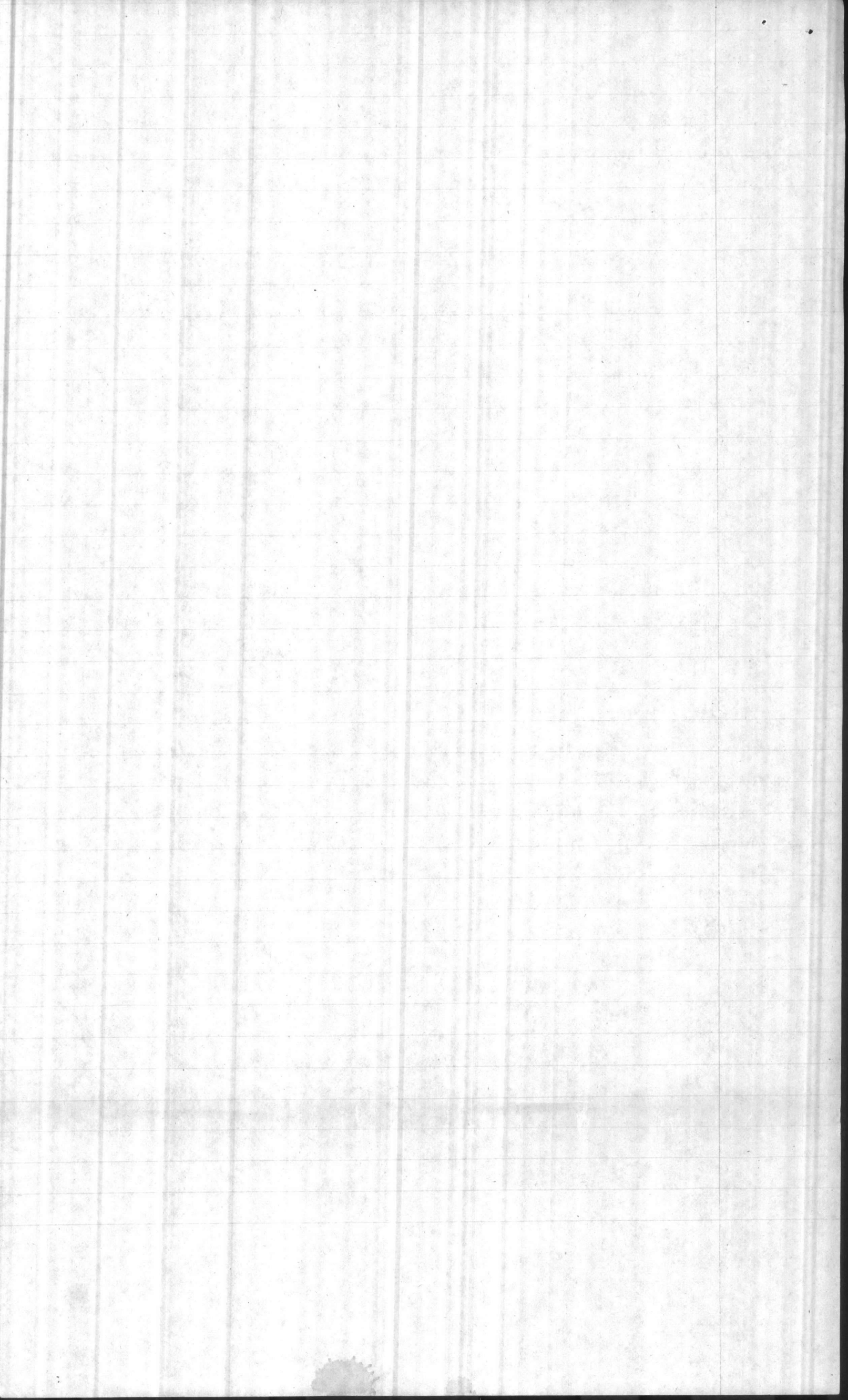


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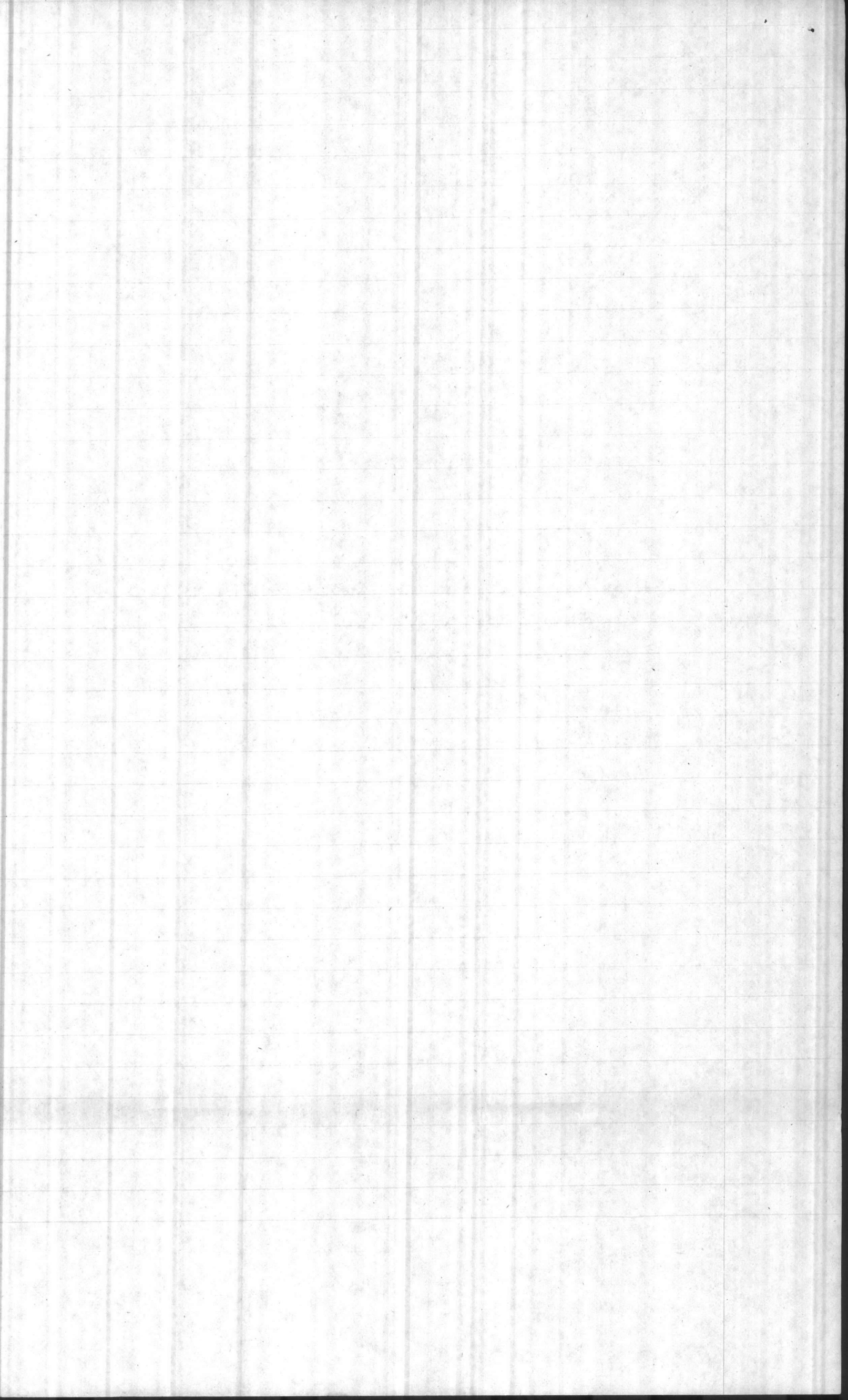
RETURN RECORD OF TAGGED TURTLES - TABLE II

CRAWL INFORMATION IN RELATION TO MOON AND TIDAL CYCLES
AND WEATHER CONDITIONS - TABLE III

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NEST CRAWL ACTIVITY



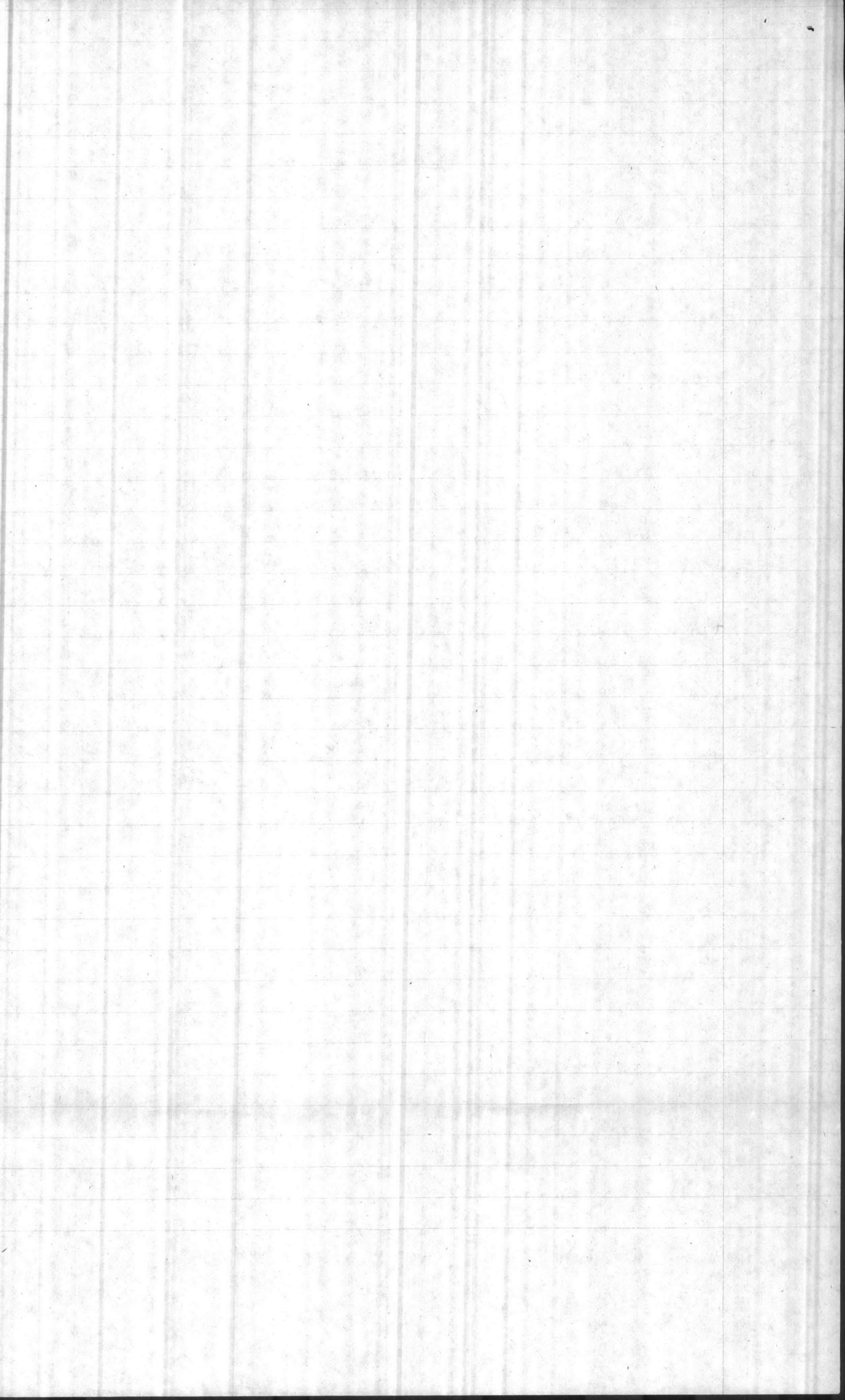
INTRODUCTION

The sea turtle inventory for 1984 is a continuation of past efforts by Natural Resources and Environmental Affairs Division, Assistant Chief of Staff, Facilities, Marine Corps Base, Camp LeJeune, North Carolina, to protect sea turtles nesting activities at Onslow Beach. The sea turtle inventory consists of several programs including: nest protection, tagging of adult turtles, collecting nesting data, determining hatching success and aerial surveys.

Management personnel began operating under a Federal Fish and Wildlife Permit during 1981, issued for working with threatened loggerhead and Green Turtles. The permit authorizes the tagging and measurement of adults and the relocation of nests threatened by erosion, tides, extreme predation or military training activities. Nests may be moved only within 24 hours of egg laying to a safe beach location and not to a laboratory. Relocated nests are required to be monitored and hatching success documented.

The results of the aforementioned programs are as follows:

- a) Nest protection from predators, 63
- b) Tagging of Adults - number of turtles tagged - 26. Tag Return data may be reviewed in TABLE II, page 9.
- c) Nesting data - number of nests - 63
- d) TOTAL number of crawls - 121
- e) TOTAL number of eggs - 4767
- f) TOTAL number of hatchlings - 1590
- g) Number of Tag returns - 29
- h) Number of stranded turtles - 4
- i. Number of nests lost during Hurricane Diana 2
- j. Number of nests lost during abnormal high tides associated with Northeast winds 6
- k. Number unhatched nests from unknown causes 5



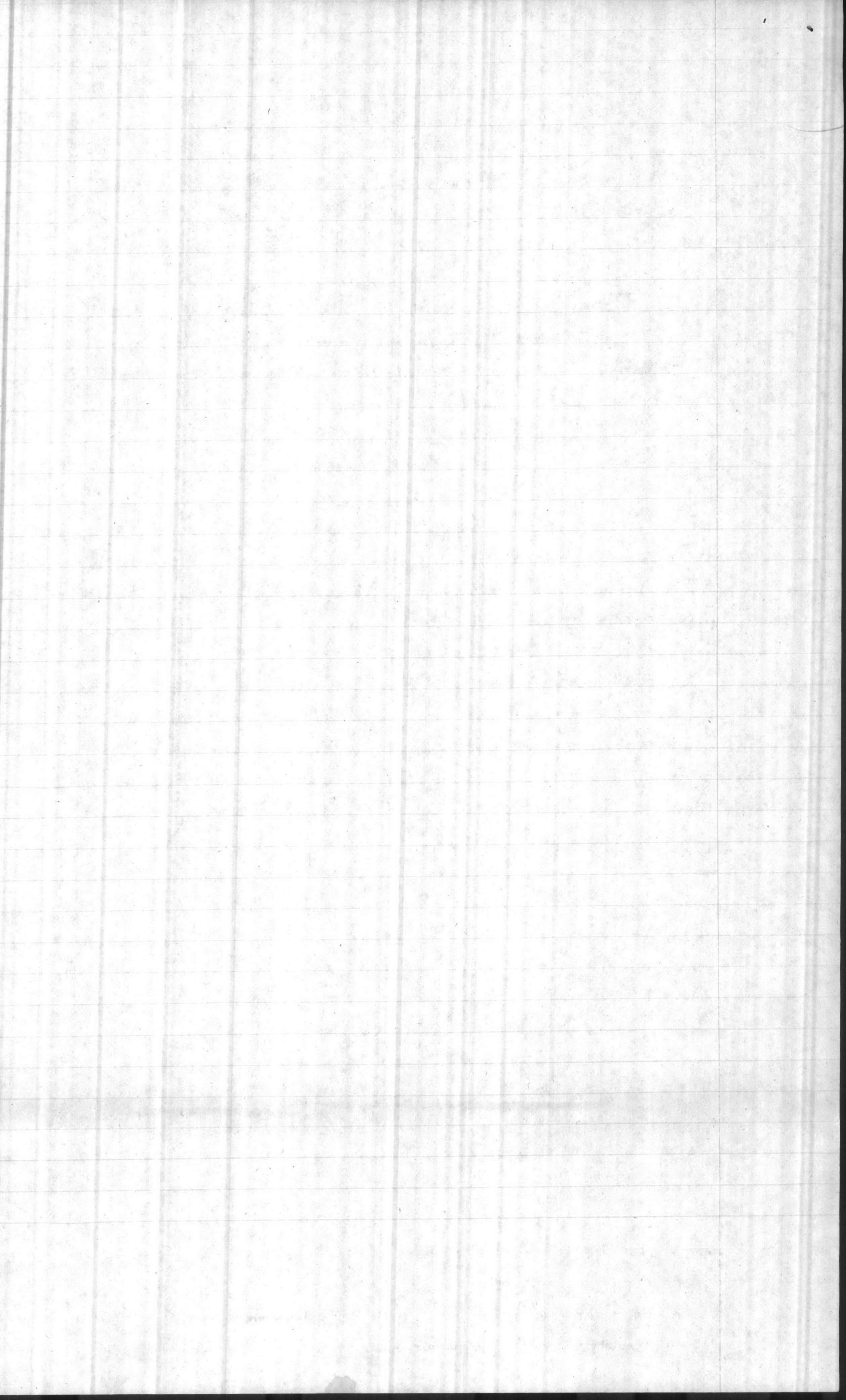
STRANDING reports were submitted to the North Carolina Wildlife Resources STRANDING NETWORK Coordinator. CARCASSES were buried on the beach.

Percent hatching success is $\underline{33\%}$ nesting and crawl data is compiled in Tables I, II, III, IV and V, and Graphs I and II on pages 9 through 14. The enclosed maps indicate locations of turtle activity on Owslow Beach.

Aerial survey data may be found in Table VI, page 15.

The Marine Corps Base, Camp LeJeune and Natural Resources and Environmental Affairs Division give special thanks to Doctor P. D. Schwartz at the Institute of Marine Science, Morehead City for his advice and services.

FOR copies of this report or other information concerning the sea turtle management program conducted by this agency, contact: Commanding General, Marine Corps Base, Camp LeJeune, North Carolina 28542, ATTENTION: Director, Natural Resources and Environmental Affairs Division, Assistant Chief of Staff, Facilities.



SEA TURTLE INVENTORY
CRAWL DATA

TABLE I
MARINE CORPS BASE

Camp Lejeune, North Carolina

CRAWL No.	DATE	TIME CRAWL OCCURRED	Active NEST	Location	Comments
001	5-23-84	0800-1130		.7 N	C.O.
002	5-24-84	0200	X	2.4 S	Relocated to dunes 4 yds up 143 eggs
003	6-4 - " "	0900-1030	X	2.4 S	Relocated to dunes 4 yds up. - 13 yds S-133
004	6-4 - " "	2100-0500		3.1 N	C.O.
005	6-7 - " "	0300	X	2.5 S	Relocated to dunes from .53 → to dunes up 3 yds. eggs 148
006	6-8 - " "	2100-0500		3.4 N	C.O.
007	6-9	2100-2300	X	2.8 S	Eggs=71 TAG AAR 087, 088
008	6-9	0248	X	2.9 N	TAG AAR 089, 090 Eggs 61
009	6-9	2100-2300		.6 S	C.O.
010	6-11	2100-0500		2.9 S	C.O.
011	6-11	2100-0500		2.0 N	C.O.
012	6-12	2230	X	2.8 S	Relocated from .8 S TAG AAR 091, 092 Eggs 115
013	6-12	0030	X	3.1 N	TAG AAR 093, 094 Eggs 137
014	6-12	2100-0500		3.4 S	TAG AAR 095, 096
015	6-13	1300-1530		3.1 S	C.O.
016	6-13	2100-0500		3.3 N	C.O.
017	6-13	2230	X	3.3 N	TAG AAR 097, 098 Eggs-155
018	6-13	2400	X	2.6 S	Relocated from 3.5 RETURN AAR 095, 096 Eggs-98
019	6-13	2100-0500		.8 S	C.O.
020	6-15	0010		1.25 S	TAG AAR 099, 100
021	6-15	0020		1.4 S	C.O.
022	6-15	0040		1.8 S	TAG S.M.I 803 C.O.
023	6-16	2300	X	3.3 N	TAG AAR 101, 102 Eggs=155 Relocated to dunes
024	6-17	2300	X	2.3 S	TAG AAR 103, 104 Eggs-52 Relocated to dunes
025	6-17	0400		3. N	C.O.
026	6-21	0330	X	4. N	Relocated to dune Eggs-138
027	6-22	2200	X	2.9 N	Relocated to dunes Eggs-164 TAG AAR 105, 106
028	6-22	2405		1.6 S	C.O.
029	6-23	2325	X	3.4 S	TAG AAR 107, 108 RETURN TAG AAR 107, 108
030	6-23	0135	X	3.7 N	Eggs-131 TAG AAR 109, 110
031	6-26 - " "	2330	X	3.4 N	Eggs-139 RETURN TAG 089, 090 Eggs-121

Summary of Instructions

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



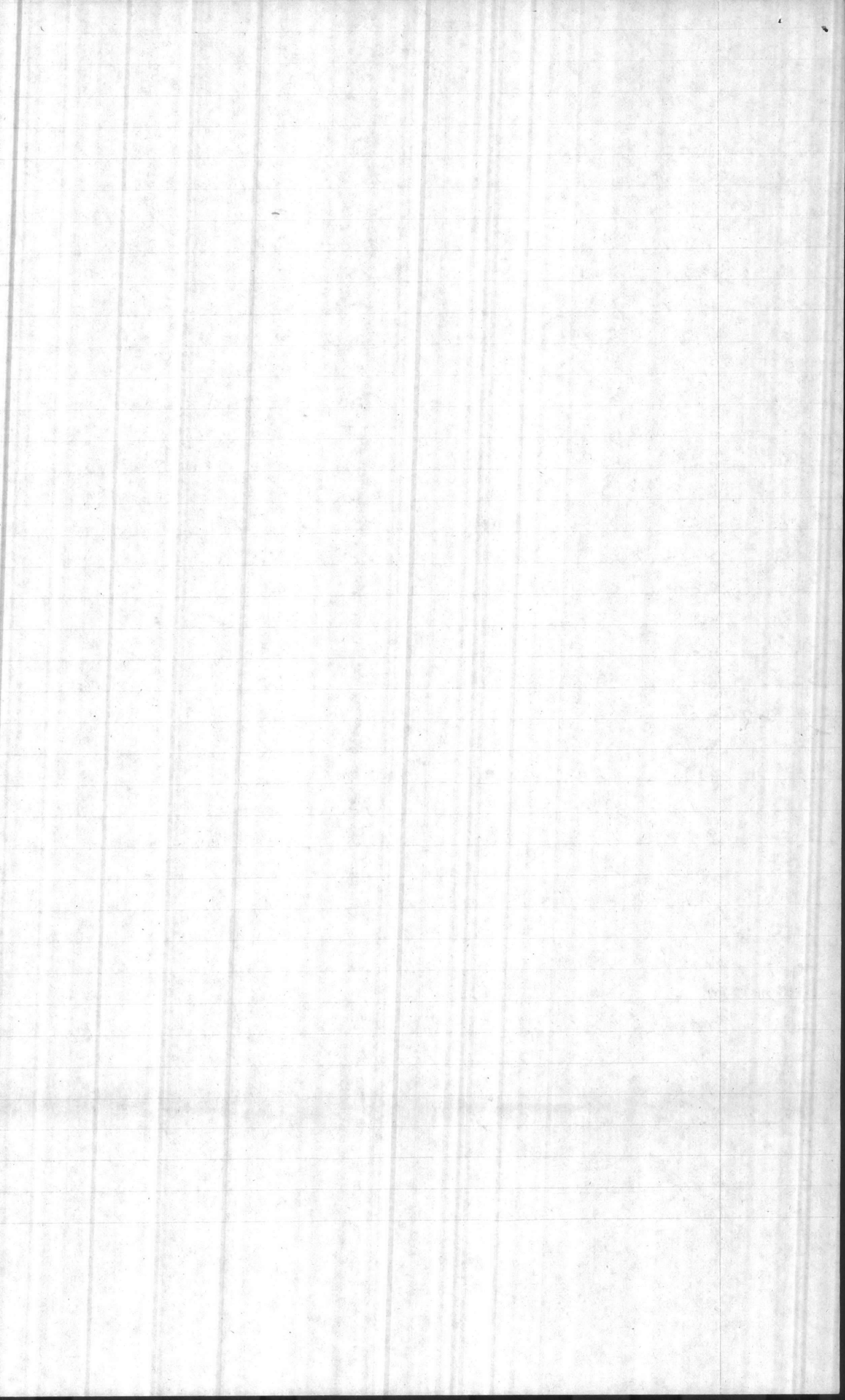
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Crawl No.	DATE	TIME Crawl occurred	Active Nest	Location *	Comments
032	6-26-84	0020	X	2.0N	RETURN TAG AAR 097, 098 Eggs-152- Relocated from 6.25
033	6-26-84	0115		2.6S	RETURN TAG AAR 095, 096
034	6-26-''	0120		3.0S	C.O.
035	6-26-	0355		1.8S	C.O.
036	6-27-84	2130	X	3.4N	TAG AAR 111, 112 Eggs 137 Relocated to dunes
037	6-27-''	2330		1.8N	RETURN TAG AAR 093, 094 Relocated from 1.25
038	6-27-''	2345	X	.2N	RETURN TAG 091, 092 Eggs-124
039	6-27-''	0100		2.9S	RETURN TAG AAR 095, 096 Relocated from 3.65
040	6-27-''	0340	X	2.75S	RETURN TAG AAR 095, 096, Eggs-136 Relocated to dune
041	6-28-''	2345	X	.6N	RETURN TAG AAR 093, 094 Eggs-132 Relocated to dune
042	6-28-''	2345	X	.6N	TAGS AAR 113, 114, Eggs 91
043	6-28	0100	X	2.15	TAGS AAR 115, 116 Eggs-144
044	6-28.	0130		2.25	C.O.
045	6-28.	0130		2.35	C.O.
046	6-28.	0135		3.15	C.O.
047	6-28-84	0225		.75	C.O.
048	6-29.	2330		3.6N	C.O.
049-?	6-29.	2340		3.8N	C.O.
051	6-29.	2355		.35	C.O. Relocated from 2.45
052	6-30-	0240	X	2.1N	Eggs-131
053	7-1-84	0030	X	2.15	Relocated from 3.35 Eggs-159
054	7-4-84	2300	X	1.55	RETURN TAG AAR 105, 106 - Eggs-144
055	7-5-''	2230	X	2.3N	Relocated to dune Eggs-161
056	7-9-	0100		1.15	C.O.
057	7-9-	0300	X	1.0N	RETURN TAG AAR 107, 108 - Eggs-122
058	7-10-84	2307		.95	C.O.
059	7-10-	0200	X	3.2N	RETURN TAG AAR 097, 098 Relocated to dunes - Eggs-126 TAG AAR 117, 118
060	7-11-	2230	X	.2N	Relocated from .65, Eggs-157 TAG AAR 119, 120
061	7-11-	0020	X	3.75	Relocated to dunes 25m. N, 10m E Eggs-124
062	7-11-	0310		2.25	RETURN TAG AAR 091, 092 RETURN TAG AAR 091, 092
063	7-12-84	0043	X	2.05	Eggs-131

Summary of Instructions

* See ~~master~~ page 5
previous

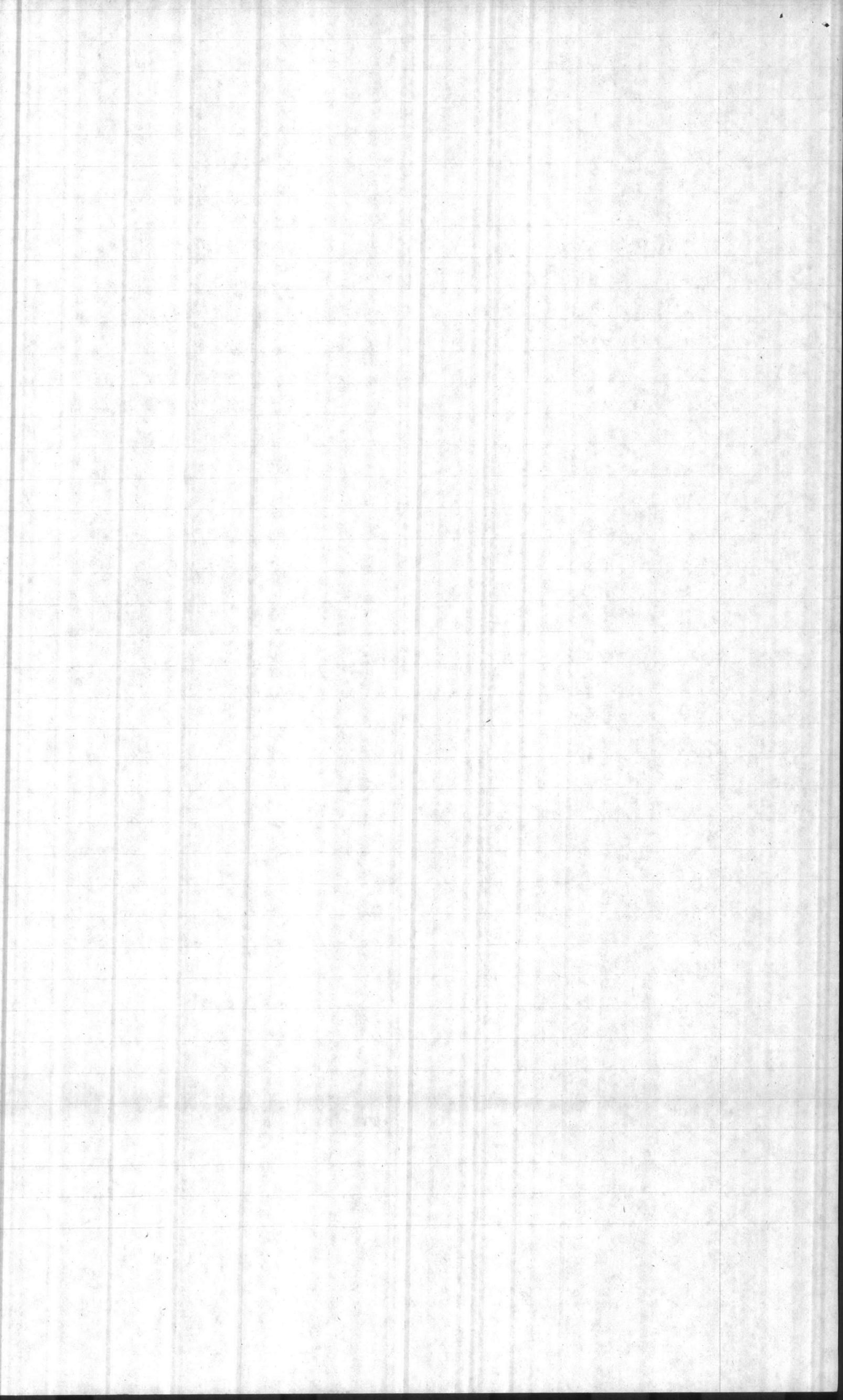


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CRAWL No.	DATE	TIME CRAWL Occurred	Active NEST	LOCATION*	COMMENTS
064	7-12-84	0120		3.75	C.O. Relocated 0.10m to dunes
065	7-15-84	2130	X	1.9N	TAG AAR 121, 122 Eggs-117
066	7-16-84	2350		1.8N	C.O. Return TAG AAR 105, 106
067	7-16-84	0310		2.4N	C.O. Return TAG AAR 105, 106 Relocated to dune
068	7-17-	2215	X	2.9N	Return TAG AAR 105, 106 - Eggs-142 Relocated to ocean side of dune
069	7-22-84	0912	X	.8N	TAG AAR 123, 124 Eggs-111
071	7-23-	2130	X	2.4N	Eggs-140
072	7-23-	2330	X	3.2N	Return TAG AAR 097, 098 - Eggs-130
073	7-23-	0030		.1N	Return TAG AAR 107, 108
074	7-23-	0050		3.15	C.O. Return TAG AAR 119, 120
075	7-23-	0228		2.95	C.O. Relocated to dune
076	7-23-	0335	X	3.15	Return TAG AAR 119, 120 Eggs-125
077	7-24-84	2320		3.3N	C.O. TAG AAR 125, 126 Relocated from unlined R. side of dune
078	7-24-	0022	X	67m. N	TAG AAR 127, 128, Eggs 129 Relocated from 45
079	7-24-	0120	X	.8N	Eggs-130 Return TAG AAR 125, 126
080	7-25-	0057	X	3.65	Relocated to dune - Eggs-118 Relocated from .65
081	7-26-	2200	X	.1N	Return TAG AAR 099, 100 Eggs-93
082	7-26-	2255		2.2N	C.O.
083	7-26-	0130	X	3.5N	TAG S.M.I 803 Relocated to dune - Eggs-89
084	7-26-	0230		2.65	C.O.
085	7-27-	0110		2.3N	C.O. Relocated to dune
086	7-27-	0126	X	.7N	Return TAG AAR 093, 094 Eggs-125
087	7-28-84	1134		2.05	C.O. Return TAG AAR 129, 130 Relocated 5m to dunes
088	7-28-	1145	X	3.35	Return TAG AAR 113, 114 Eggs-143
089	7-28-	0258	X	1.5N	Return TAG AAR 121, 122 - Eggs 109 Relocated to dune
090	7-29-	2150	X	.2N	Eggs-115
091	7-29-	2230	X	2.15	Eggs-144 C.O.
092	7-29	2330		2.9N	C.O. Relocated to dunes
093	7-30-	0010	X	.6N	Return TAGS AAR 105, 106 Eggs-150
094	7-31-	0230	X	1.95N	Relocated from 1.15 Eggs-114 Relocated to dune
095	8-5-	2151	X	.2N	TAG AAR 131, 132 Eggs-63
096	8-5-84	0200		2.85	C.O. Return TAG AAR 119, 120

Summary of Instructions

* - see previous page



HEADING

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CRAWL NO	DATE	Time Crawl Occurred	Active Nest	Location*	Comments
097	8-5-84	0330		2.7 S	C.O.
098	8-6-	2300		1.7 N	RETURN TAG AAR 123, 124
099	8-6-	2341		3.3 N	C.O.
100	8-6	0115	X	3.2 N	RETURN TAG AAR 092, 098 - Eggs-114 Relocated from 2.9 S
101	8-6	0230	X	3.2 N	RETURN TAG AAR 119, 120 Eggs-129 Relocated to dune
102	8-7-	0320	X	3.5 N	TAG AAR 133, 134 - Eggs-117 Eggs-134 Relocated to dune
103	8-12-	2110	X	2.0 N	C.O. found from previous night 8-11-84
104	8-12-84	2145		3.1 N	C.O.
105	8-12-	2300		2.0 S	C.O.
106	8-12	0047		3.0 S	C.O.
107	8-12	0055		3.1 S	C.O.
108	8-12	0123		1.0 N	C.O.
109	8-12-	0220		.6 N	C.O. Relocated from 1.7 N
110	8-13-	2127	X	2.0 N	RETURN TAG AAR 093, 094 Eggs-125 C.O.
111	8-13-	0115	X	1.8 N	Relocated from 1.7 S Eggs 114 Relocated to dune
112	8-17	2305	X	3.9 N	TAG AAR 135, 136 Eggs-122
113	8-21-	0126		3.5 S	C.O.
114	8-22-84	2140		1.9 S	C.O.
115	8-22-	0050		2.3 N	C.O.
116	8-22-	0140		2.4 S	C.O. Relocated to dune
117	8-22-	0150	X	2.0 N	TAG AAR 137, 138 Eggs-76
118	8-23-	2150		3.1 N	C.O. Relocated from .4 S
119	8-23	2310	X	.2 N	RETURN TAG AAR 107, 108 Eggs 114 C.O.
120	8-24	2300	X	3.7 S	Eggs-98
121	8-30-	2100/0500	X	3.2 N	C.O. Eggs-123
122					
123					
124					
125					
126					
127					
128					

Summary of Instructions

* see previous page

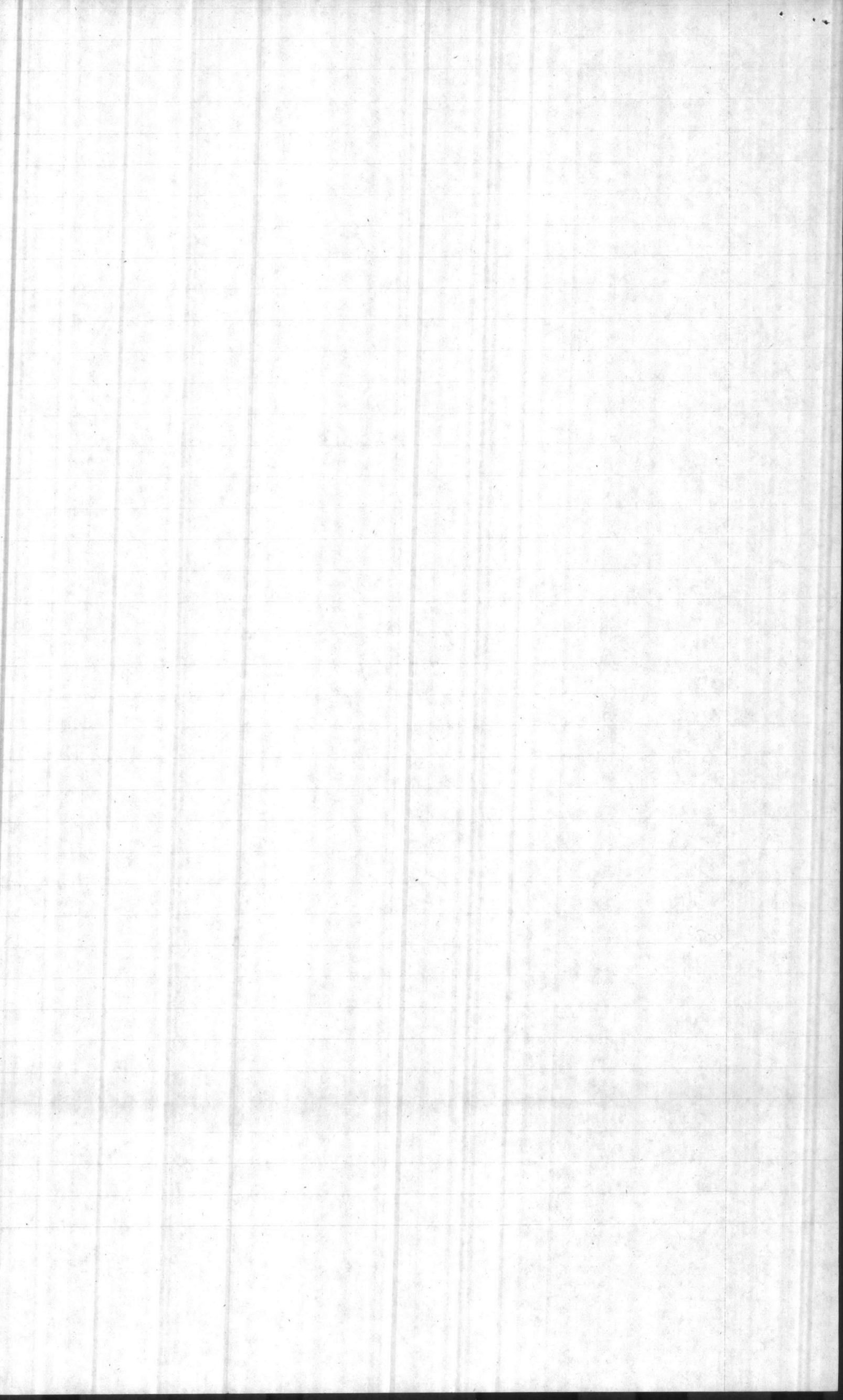


TABLE II

RETURN RECORD OF TAGGED TURTLES
1984 SEA TURTLE INVENTORY

DATE TAG	TAG Number	RETURN	RETURN	RETURN	RETURN
6-9-84 ₂	AAR 087, 088				
6-9-84 ₂	AAR, 089, 090	6-26-84 ₂			
6-12-84 ₂	AAR 091, 092	6-27-84 ₂	7-12-84 ₂		
6-12-84 ₂	AAR 093, 094	6-28-84 ₂	7-27-84 ₂	8-13-84 ₂	
6-12-84 ₁	AAR 095, 096	6-13-84 ₂	6-27-84 ₁	7-27-84 ₂	
6-13-84 ₂	AAR 097, 098	6-26-84 ₂	7-10-84 ₂	7-23-84 ₂	8-6-84 ₂
6-15-84 ₁	AAR 099, 100	7-26-84 ₂			
6-16-84 ₂	AAR 101 102				
6-17-84 ₂	AAR 103 104				
6-22-84 ₂	AAR 105 106	7-4-84 ₂	7-16-84 ₁	7-17-84 ₂	7-30-84 ₂
6-22-84 ₁	AAR 107 108	6-23-84 ₂	7-9-84 ₂	7-23-84 ₁	8-23-84 ₂
6-23-84 ₁	AAR 109 110				
6-27-84 ₂	AAR 111 112				
6-28-84 ₂	AAR 113 114	7-28-84 ₂			
6-28-84 ₂	AAR 115 116				
7-11-84 ₂	AAR 117 118				
7-11-84 ₂	AAR 119 120	7-23-84 ₂	8-5-84 ₁	8-6-84 ₂	
7-15-84 ₂	AAR 121 122	7-28-84 ₂			
7-22-84 ₂	AAR 123 124	8-6-84 ₁			
7-24-84 ₁	AAR 125 126	7-25-84 ₂			
7-24-84 ₂	AAR 127 128				
7-28-84 ₁	AAR 129 130				
8-5-84 ₂	AAR 131 132				
8-7-84 ₂	AAR 133 134				
8-17-84 ₂	AAR 135 136				
8-22-84 ₂	AAR 137 138				
6-15-84 ₁	SMT 803*	7-26-84 ₂			

1 DID NOT NEST

2 NESTED

* Scientific Marine Institute, Morehead City, NC.



TABLE III

CAPS

CRAWL INFORMATION IN RELATION TO MOON AND TIDAL CYCLES

DATE	MOON RISE % ILLUMIN	TIME of High Tide	TIME CRAWL W/O NEST	TIME CRAWL W/NEST	TOTAL CRAWLS
5-23-84	0131-48%	0145	0900-1130		1
5-24-84	0158-38%	0139		0800-1200 0900-1630	1
6-4	0039-21%	2236	2106-0500	2100-0500 0300	2
6-7-	1406-54%	0236	2100-0500		1
6-8-	1513-65%	0341			1
6-9-	1621-75%	0444	2100-0500 2100-0500 2100-0500	0300 2300	3
6-11-	1838-92%	1905	2100-0500 2100-0500		2
6-12-	1945-99%	1955		2230	3
6-13-	2049-100%	2042	1300-1530 2100-0500 2100-0500 0010 0040	0030 2230 2400	5
6-15-	2239-98%	2213	0020		3
6-16-	2322-94%	2255		2300	1
6-17-	2359-88%	2339	0400	2300	2
6-21-	0125-54%	0247	0400	0330	2
6-22-	0150-45%	1527	2405	2200	2
6-23-	0215-36%	1617		2325	2
6-26-	0246-11%	1839	0115 0355 0120	0145 2330	5
6-27-	0426-05%	1923	2330	0030 0330 2130	5
6-28-	0515-02%	2010	0100 0130 0225 0135	2345 2345 0100	7
6-29-84	0512-00%	2056	2330 2355 2340	2345	3
6-30-84	0717-01%	2144		0245	1
7-1-84	0827-05%	2234		0030	1
7-4-	1058-29%	0114		2300	1
7-5-	1206-40%	2205		2230	1
7-9-	1733-82%	0619	0100	0300	2
7-10-	1838-90%	0114	2307	0200	2
7-11-	1938-95%	1940	0310	2230	3
7-12-	2031-99%	2024	0120	0020 0043	2
7-15-	2230-96%	2227		2130	1
7-16-	2300-92%	2306	2350 0310		2
7-17-	2326-86%	2344		2215	1
7-22-	0010-42%	0344		0312	1
7-23-	0041-32%	1622	0030 0228 0050 2320	2130 0335 2330	6
7-24-	0218-23%	1716		0022 0120	3
7-25-	0303-15%	0630		0057	1
7-26-	0356-08%	101759	2255 0230	2200 0130	4
7-27-	0458-03%	1949	0110	0126	2
7-28-84	0507-00%	2038	1134	1145 0258	3

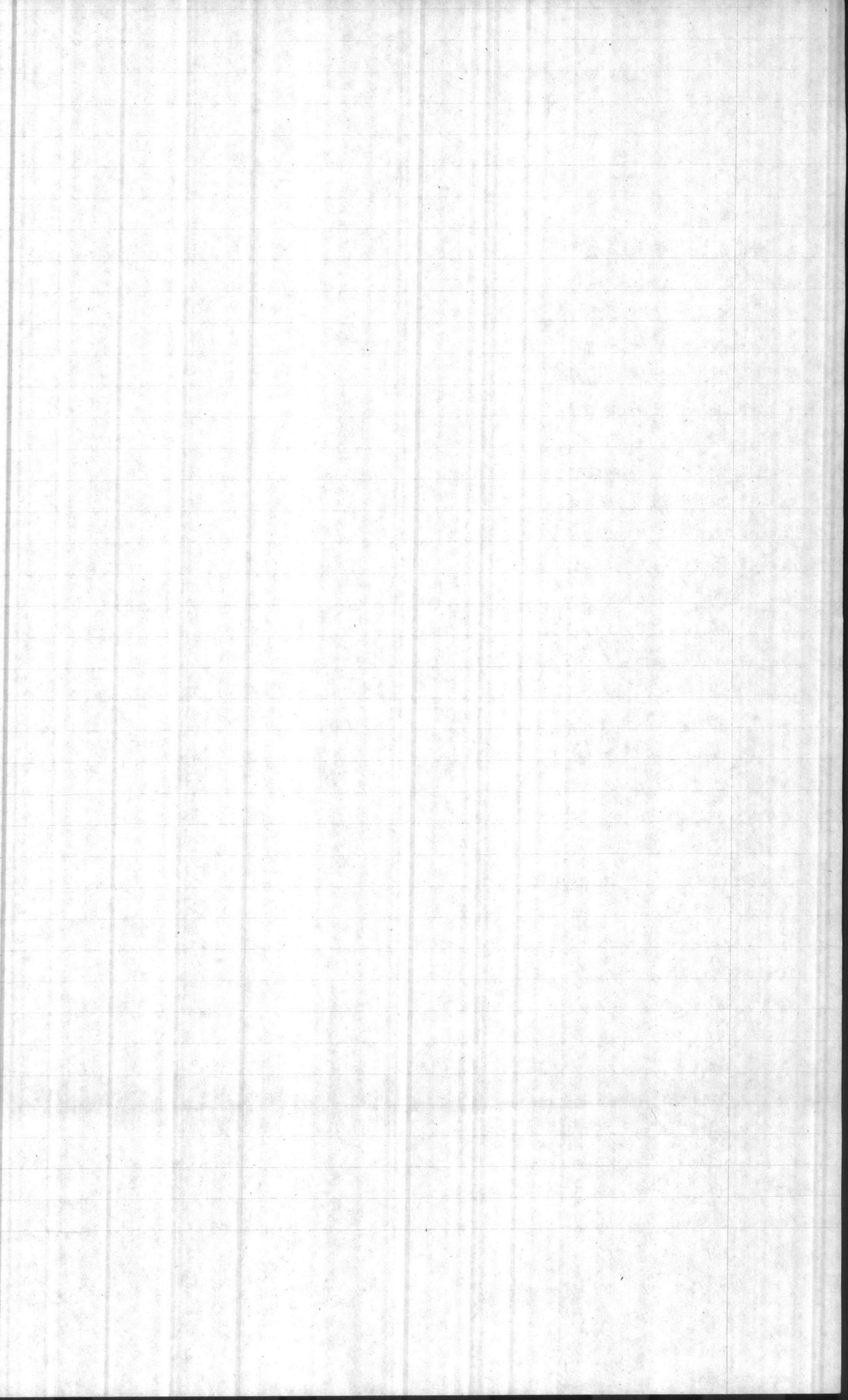


TABLE II (cont)

All crabs

[CRAWL Information in Relation to Moon and Tidal Cycles]

DATE	MOON RISE % Illumin	TIME of High Tide	TIME CRAWL W/O NEST	TIME CRAWL W/NEST	TOTAL CRAWLS
7-29-84	0607-08%	2129	2330	2150 2330	3
7-30-84	0834-03%	2117		0010	1
7-31-	0846-09%	2307		0230	1
8-5-	1526-60%	0403	0200 0330	2151	3
8-6-	1631-70%	0509	2300 2341	0115 0230	4
8-7-	1832-79%	0607		0320	1
8-12-	2101-100%	2122	2145 0047 0123 2300 0055 0220	2110	7
8-13	2129-98%	2159		2129 0115	2
8-17-	2310-76%	2422		2305	1
8-21-	- - 38%	0405	0126		1
8-22	0141-28%	2311	2140 0140 0050 0150		4
8-23	0238-19%	1742	2120	2310	2
8-24	0343-11%	1839		2300	1
8-30	1000-15%	2242		2100/0500	1

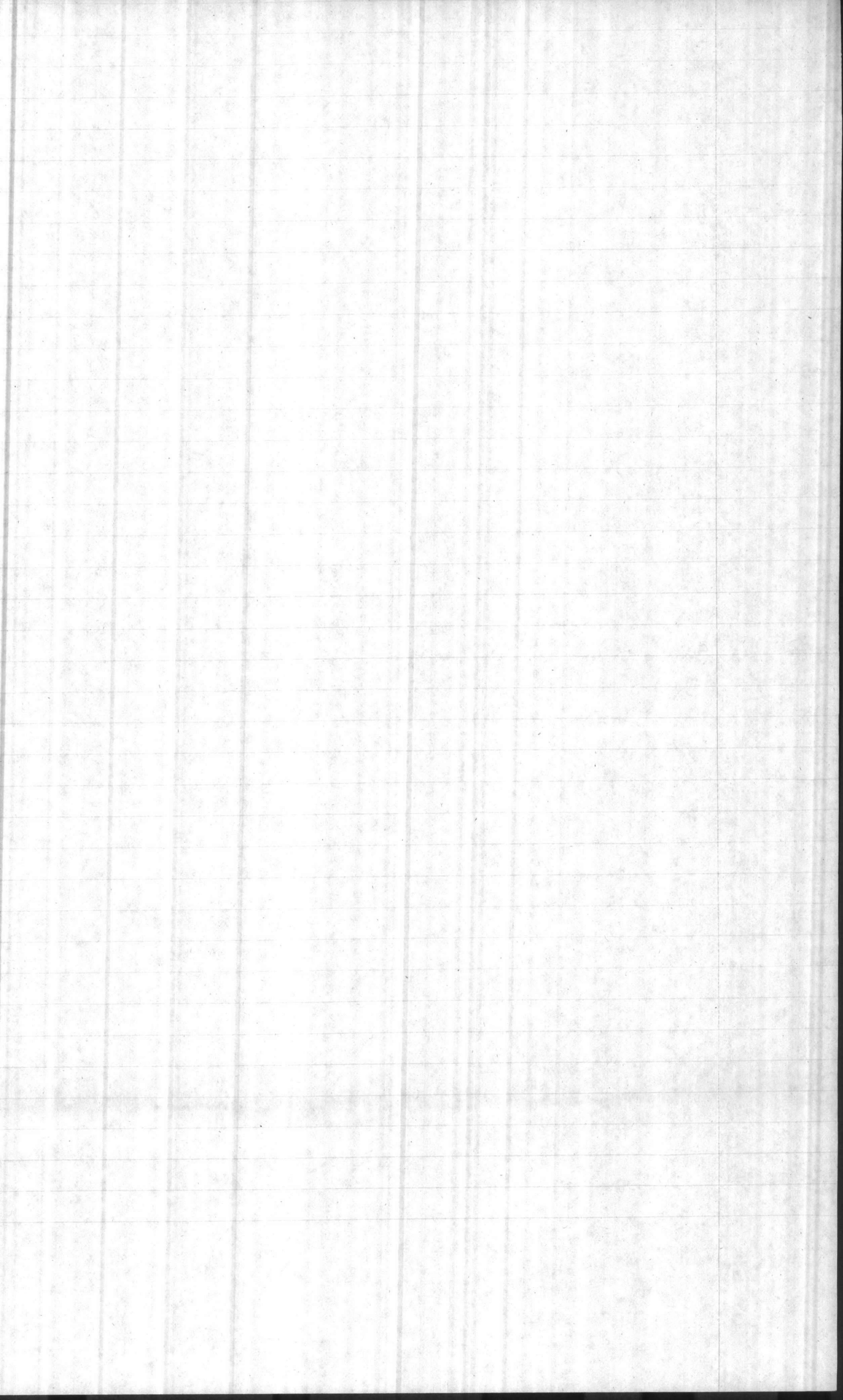


TABLE IV
 All CAPS [Ground Survey Number]
 (lights not separated at midnight)

<u>DATE</u>	<u>Crawls/No Nest</u>	<u>Crawls/Nest</u>	<u>Total</u>
6-4-84	1	1	2
6-5-84	0	0	0
6-6-	0	0	0
6-7-	0	1	1
6-8-	1	0	1
6-9-	1	2	3
6-10-	0	0	0
6-11-	2	0	2
6-12-	1	2	3
6-13-	3	2	5
6-14-84	0	0	0
6-15-	3	0	3
6-16-	0	1	1
6-17-	1	1	2
6-18-	0	0	0
6-19-	0	0	0
6-20-	0	0	0
6-21-	1	1	2
6-22-	1	1	2
6-23-	0	2	2
6-24-	0	0	0
6-25-	0	0	0
6-26-	3	2	5
6-27-	2	3	5
6-28-	4	3	7
6-29-	3	0	3
6-30-84	0	1	1

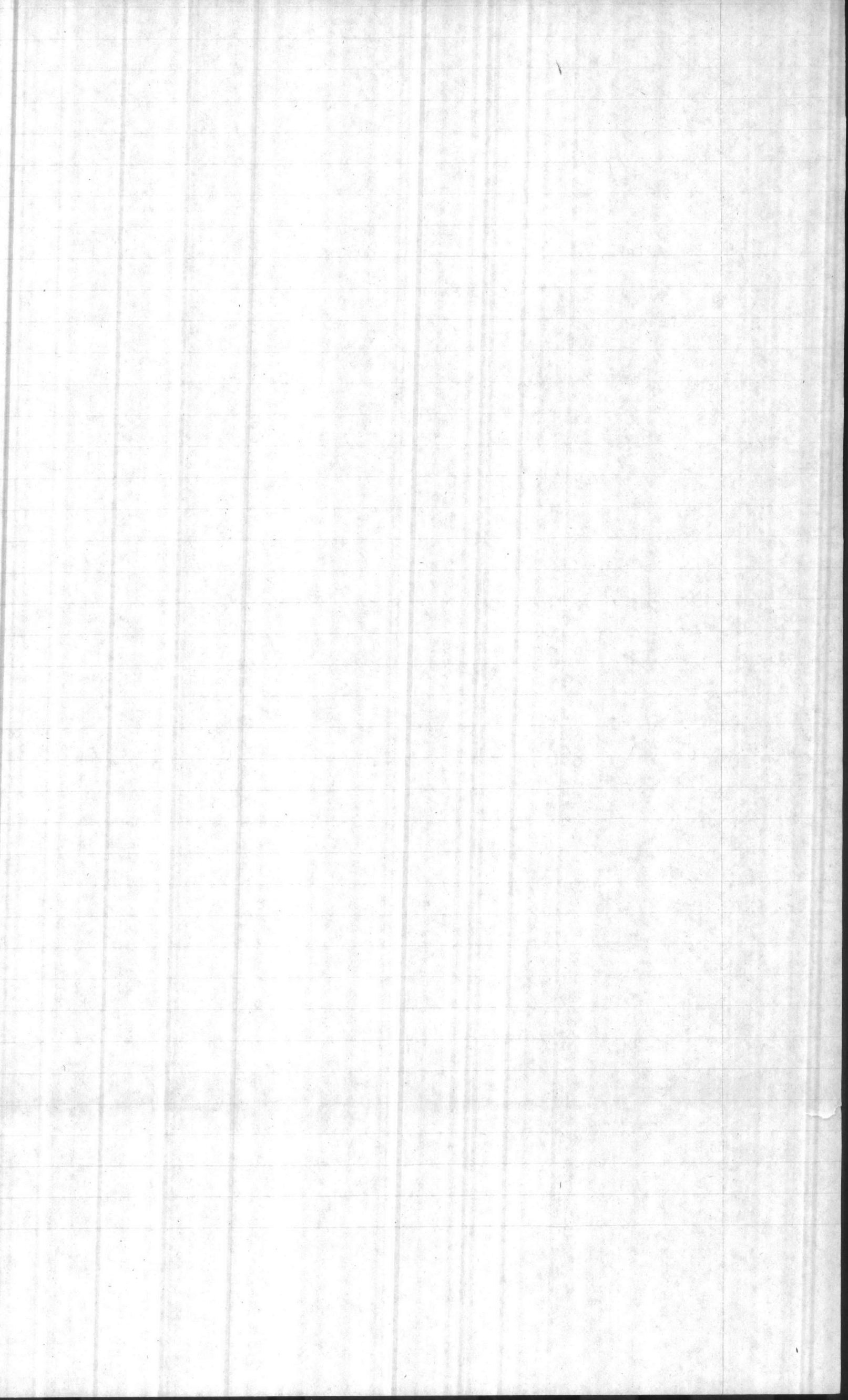


TABLE IV cont
Hending - see previous page

DATE	Crawls/No Nest	Crawls/Nest	TOTAL
7-1-84	0	1	1
7-2-84	0	0	0
7-3-	0	0	0
7-4-	0	1	1
7-5-	0	1	1
7-6-	0	0	0
7-7-	0	0	0
7-8-	0	0	0
7-9-	1	1	2
7-10-	1	1	2
7-11-	1	2	3
7-12-	1	1	2
7-13-	0	0	0
7-14-	0	0	0
7-15-84	0	1	1
7-16-84	2	0	2
7-17-	0	1	1
7-18-	0	0	0
7-19-	0	0	0
7-20-	0	0	0
7-21-	0	0	0
7-22-	0	1	1
7-23-	3	3	6
7-24-	1	2	3
7-25-	0	1	1
7-26-	2	2	4
7-27-	1	1	2
7-28-	1	2	3
7-29-	1	2	3
7-30-	0	1	1
7-31-84	0	1	1

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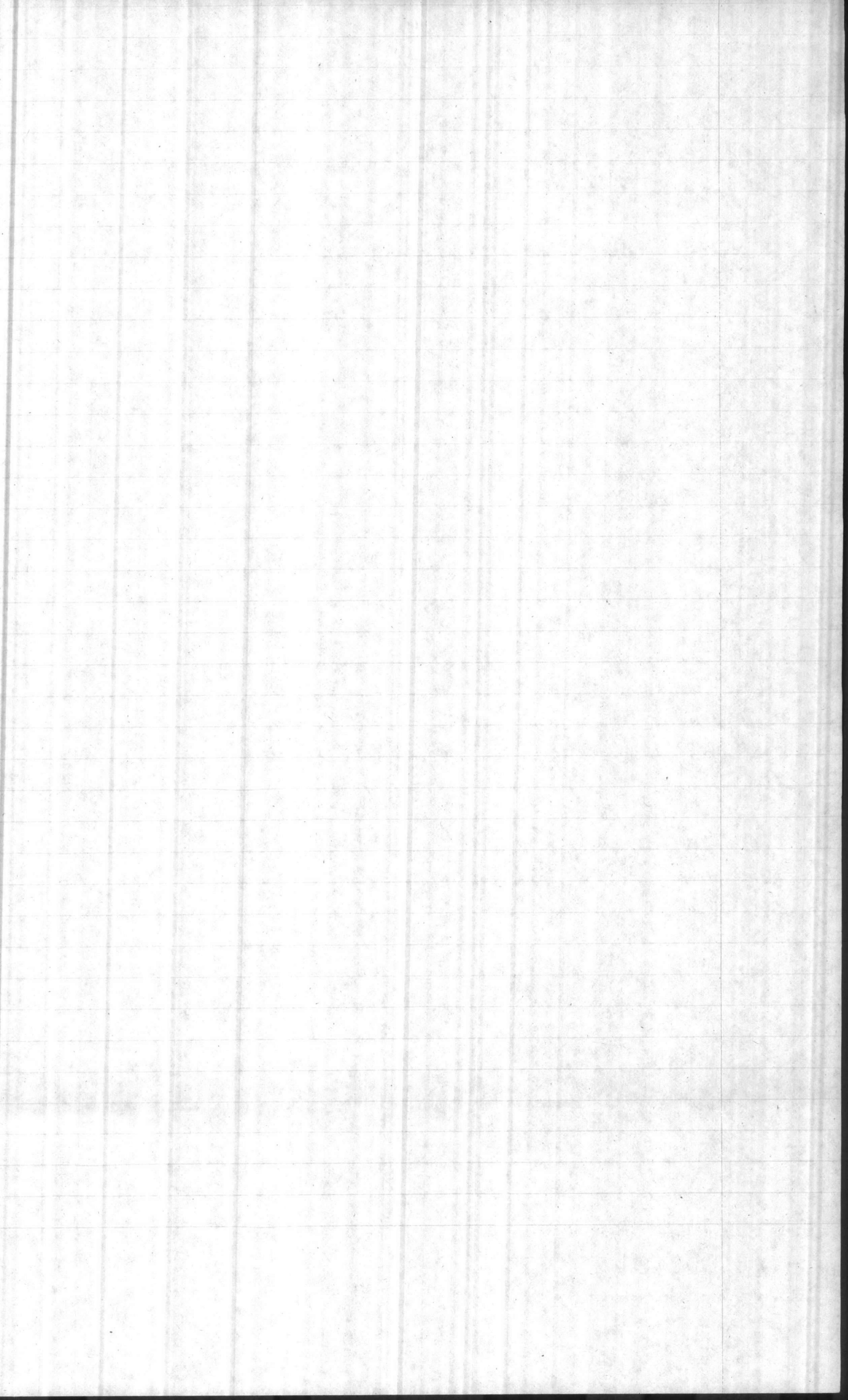


TABLE 10
see previous page

<u>DATE</u>	<u>Crawls/No West</u>	<u>Crawls/West</u>	<u>Total</u>
8-1-84	0	0	0
8-2-84	0	0	0
8-3-	0	0	0
8-4-	0	0	0
8-5-	2	1	3
8-6-	2	2	4
8-7-	0	1	1
8-8-	0	0	0
8-9-	0	0	0
8-10-	0	0	0
8-11-	6	0	0
8-12-	6	1	7
8-13-	0	2	2
8-14-84	0	0	0
8-15-84	0	0	0
8-16-	0	0	0
8-17-	0	1	1
8-18-	0	0	0
8-19-	0	0	0
8-20-	0	0	0
8-21-	1	0	1
8-22-	4	0	4
8-23-	1	1	2
8-24-	0	1	1
8-25-	0	0	0
8-26-	0	0	0
8-27-	0	0	0
8-28-	0	0	0
8-29-	0	0	0
8-30-84	0	1	1
8-31-84			

73
 59
 132

59

118

77

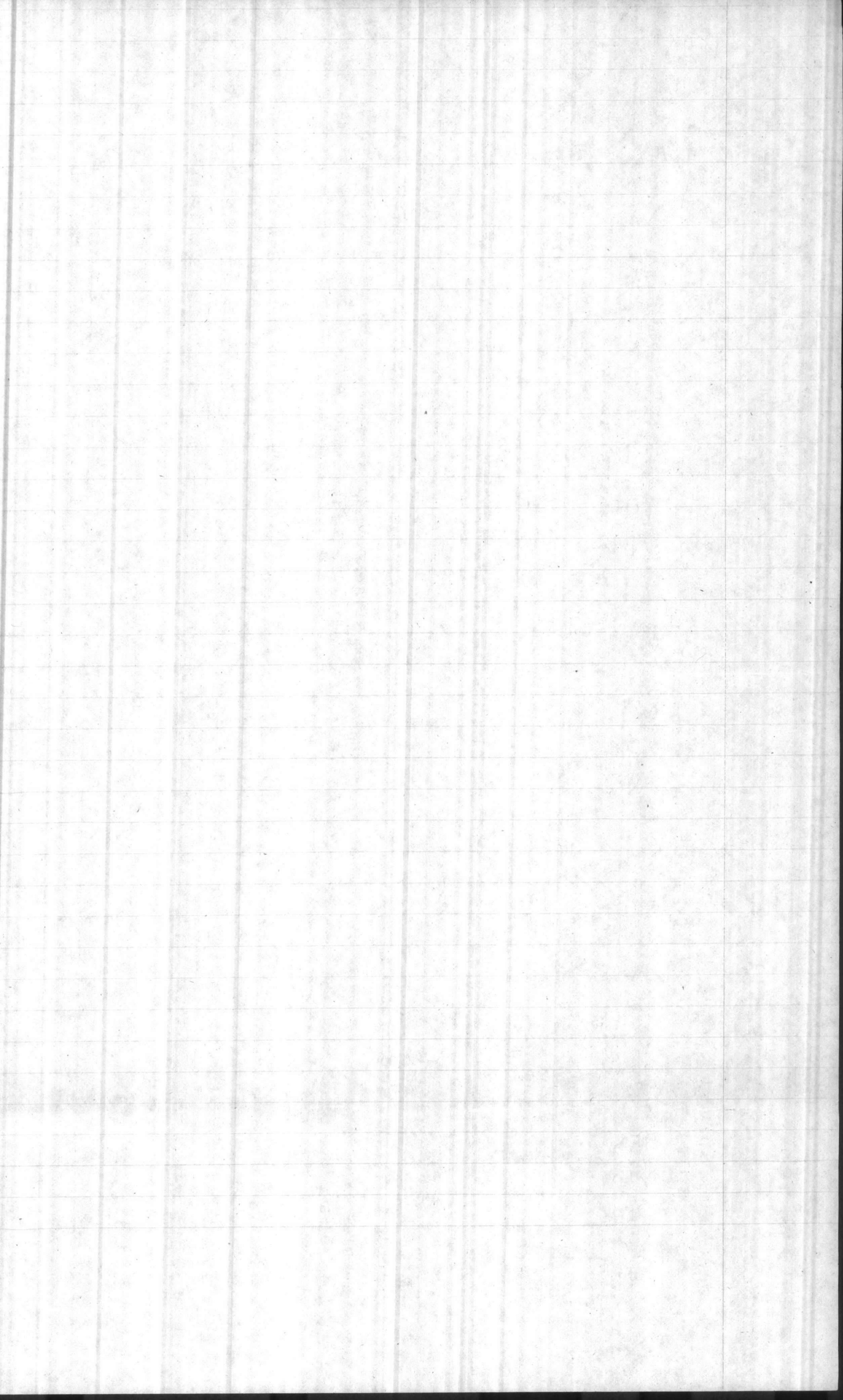
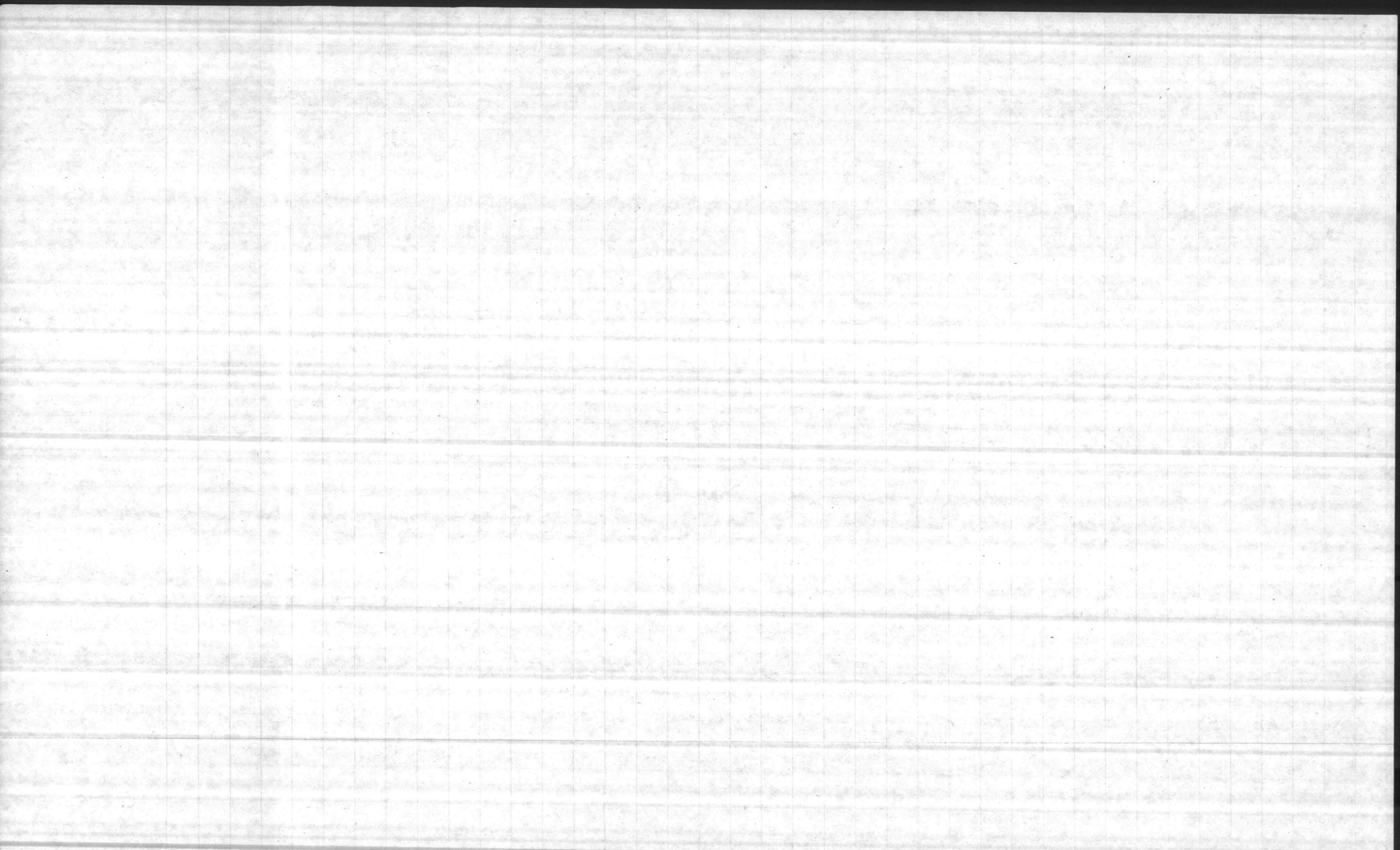
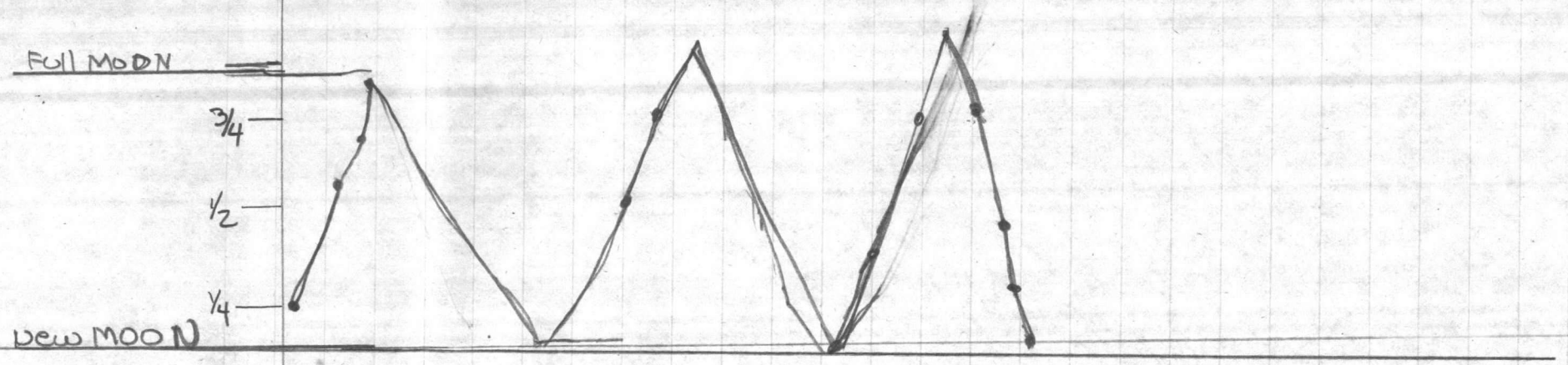


TABLE ~~IV~~

DATE	ONSLOW Beach.						BROWN'S Island						BEAR ^{Island} Beach.				Weather		
	NC	OC	NN	ON	NP	OP	NC	OC	NN	ON	NP	OP	NC	OC	NN	ON		NP	OP
5-25-84																			Fog/CLEAR
5-29-84							1		1				1		1				CLEAR
5-31-84																			Foggy/Overcast
6-5-84	1		1				1	1	1	1				1			1		Fog/HAZE/CLEAR
6-7-84	1	1	1	1			3	3	2	3			3	2	3	2			BROKEN
6-12-84	1	1	1				4	4	2					2		2	2		Fog/CLEAR
6-14-84	5	2	5	2	1		6	4	5	4			2	1	2	1			HAZE/CLEAR
6-19-84	4	2	2	2			2		2				4	1	3	1			CLEAR
6-21-84							2	2	2	2			2	2	2	2			Foggy/CLEAR
6-26-84	7	2	7	2			4	1	4	1			1						CLEAR
6-28-84	2	4	2	4			4		3				3		3				Fog/HAZE/Overcast
7-3-84	2		2				1		1				1	1	1	1			SCTD
7-6-84	4		4				2		2				2		2				CLEAR
7-11-84	2		2					2		2					2				Foggy/CLEAR
7-13-84		1		1			3		3				2		2				Fog/Overcast
7-17-84	2		2				2		2				2		2				CLEAR
7-20-84							2		2				2		1				LTRAIN/Overcast
7-24-84	11		8				5	2	5	2			3		3				Foggy/CLEAR
7-27-84	7	1	7	1			4		4				4	1	4	1			HAZE/BROKEN
8-2-84	3		3				13		13				7		7				Fog/HAZE/SCTD
8-7-84	5		5				2	2	2	2			3	2	3	2			HAZE/Fog/CLEAR
8-9-84	7	1	6	1				2		2			3	2	3	2			Fog/HAZE/CLEAR
8-14-84	0		0				0	0	0	0			0	0	0	0			
8-14-84	3		3				2	2	2				2		2				HAZE/CLEAR
8-17-84							2	2	2	2				1		1			CLEAR/observed?





Number of Crawls

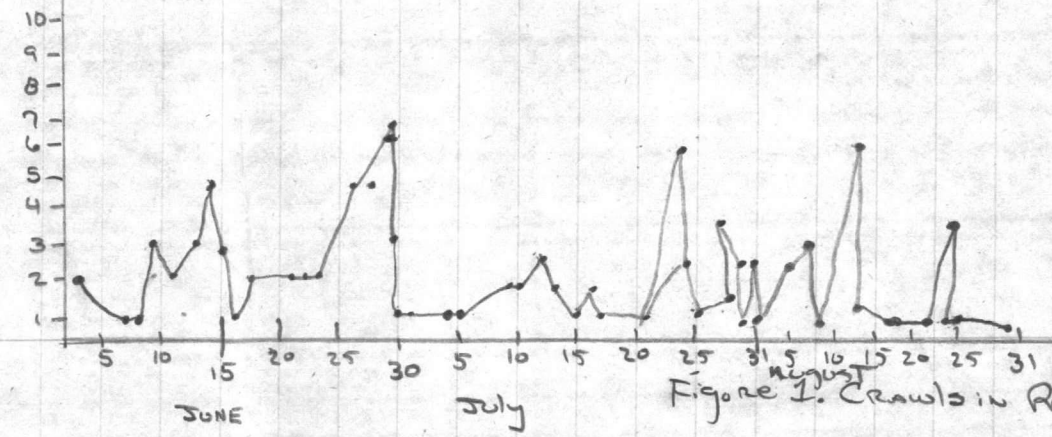
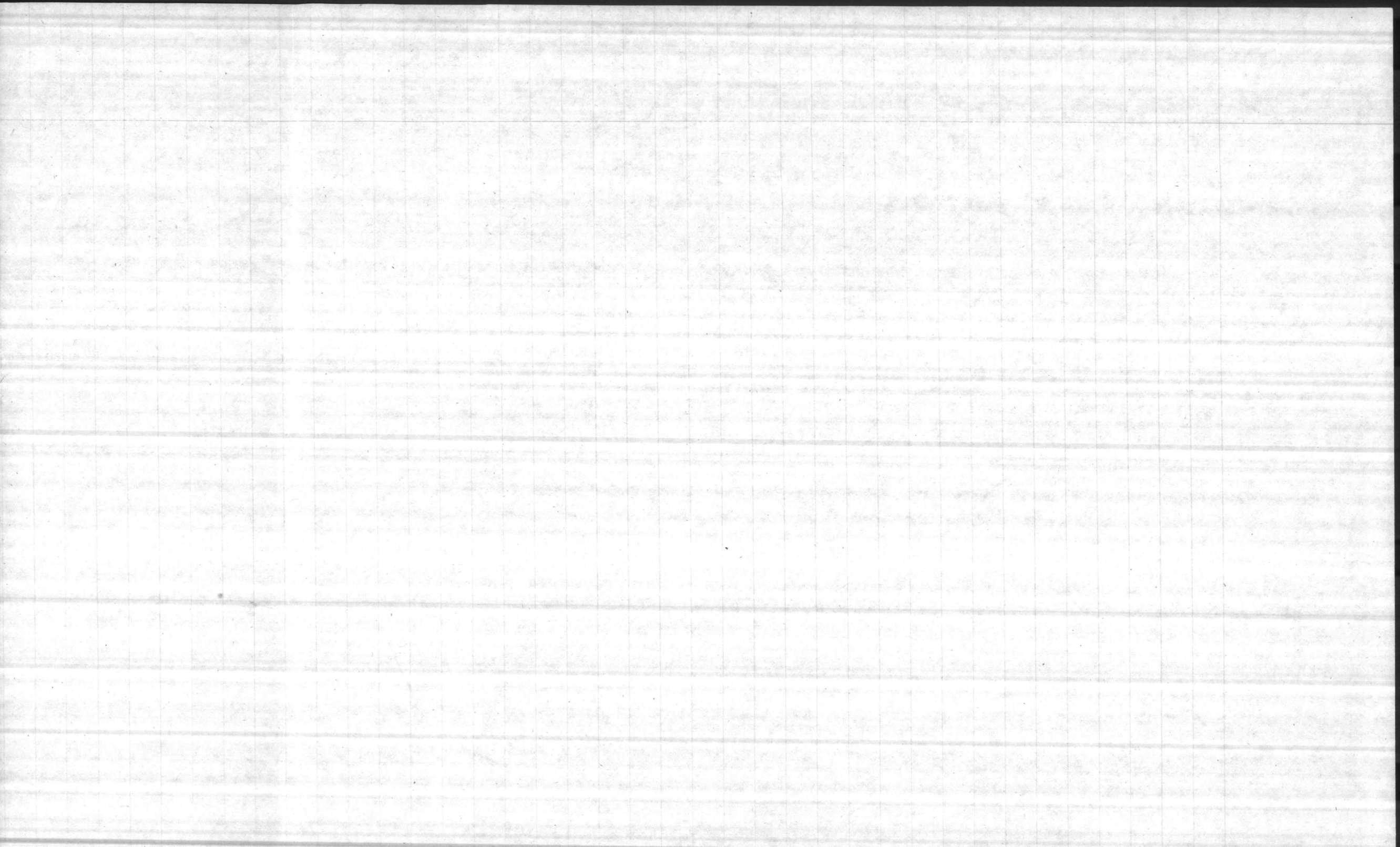


Figure 1. Crawls in Relation to Lunar cycle

June = $1 = \frac{1}{4}$
 $5 = \frac{1}{2}$
 $8 = \frac{3}{4}$
 $12 = \text{Full}$
 $15 = \frac{3}{4}$
 $19 = \frac{1}{2}$
 $23 = \frac{1}{4}$
 $27 = \text{NEW}$

July = $4 \frac{1}{2}$
 $7 = \frac{3}{4}$
 $11 = \text{Full}$
 $15 = \frac{3}{4}$
 $19 = \frac{1}{2}$
 $23 = \frac{1}{4}$
 $27 = \text{New}$
 $30 = \frac{1}{4}$

Aug = $2 = \frac{1}{2}$
 $6 = \frac{3}{4}$
 $9 = \text{Full}$
 $13 = \frac{3}{4}$
 $18 = \frac{1}{2}$
 $21 = \frac{1}{4}$
 $25 = \text{New}$
 $28 = \frac{1}{4}$



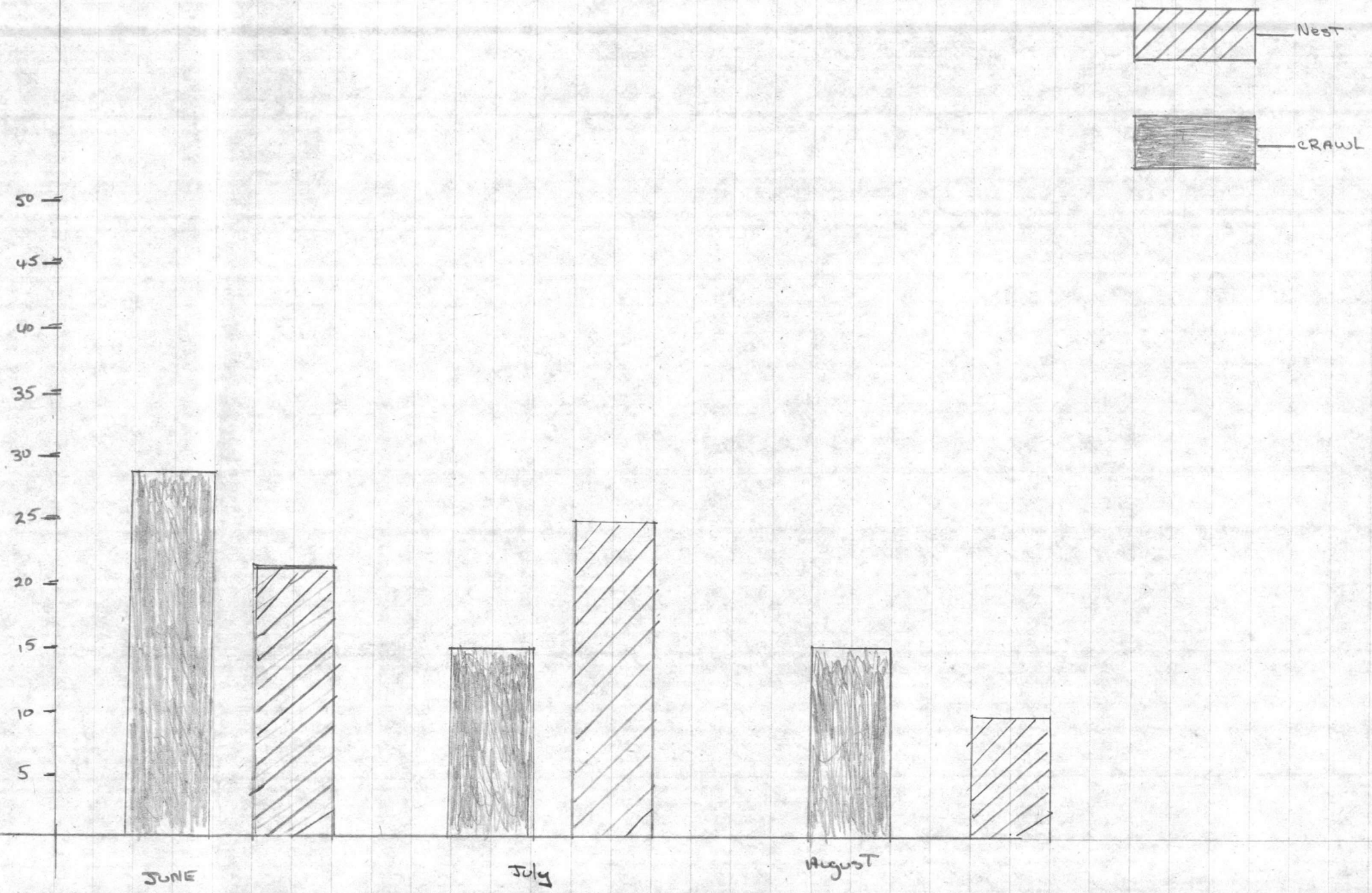


Fig. 2 TOTAL Crawls and nests by months

