

## WILDLIFE MANAGEMENT STUDIES

Studies of Hawaiian Monk Seal

An aerial census of the seal population was conducted on July 9th. (Table 2). Several of the islands were circled thus the count of total seal population is considered reliable.

Table (2)

## Aerial Census

<u>Island</u>	<u>Seals</u>	<u>Turtles</u>
Disappearing	38	
Big Gin	5	1
Little Gin	12	1
East	13	33
Whale Skate	37	6
Trig	24	
Shark	19	3
Round	<u>18</u>	—
Total:	166	44

A total of 54 seal pups were tagged (Table 3). All were double tagged with identically numbered monel tags, with a single tag on each flipper. Numbers 928 and 929 were singly tagged. Sexing was accomplished by rectal examination.

Eleven previously tagged animals were observed during our stay at French Frigate Shoals. Of the 39 pups tagged during 1969 on French Frigate, only 4 were observed during this period. This again indicates that there is either a tremendous mortality rate in pups or that they depart from their natal island after the first year.

In cooperation with Dr. J. Causey Whitlow, Department of Physiology, School of Medicine, University of Hawaii, temperatures were taken rectally on two seal pups. The first, number 918, a young male with an estimated weight of 50 lbs., had a temperature of 97.6. The second, a two week old pup weighing approximately 35 lbs. had a temperature of 98.2. This is somewhat different from the temperatures recorded on the seal pup on Midway during June. Additional samples will have to be taken. *3 minutes*

Seal tag return data is incorporated in table 4.

## Studies of the Green Sea Turtle

A total of 45 green sea turtles were measured and tagged (table 5). All except one were females. Some nesting pits were still being dug. All measurements except weights were recorded. This speeded up our tagging a great deal.

Turtle pits were noted on all the islands visited and an attempt was made to count all of this year's pits (table 6). These data are not too reliable for determining whether or not a pit has been dug this year or whether it contains eggs. To check on some pits, approximately ten which appeared to be fresh were excavated but no eggs were found. We were also attempting to determine the average number of eggs per pit to see if there is any difference between those of refuge animals and what researchers have found elsewhere. When one follows the trail of a female as she crawls on to the island and begins her search for a place to deposit eggs, it becomes increasingly difficult to understand the female psychology of the turtle. Often they crawl up above the surf line, dig a pit, cover it up, crawl 20 yards, dig a half a pit, crawl 30 yards and dig another pit. Pits may be dug but no eggs are deposited in them. Pits are dug over those of other turtles - sometimes scattering the eggs previously laid. A turtle may crawl all over an island and return to the sea without digging a pit. We have yet found no reliable way of estimating the number of green sea turtles produced on refuge islands in the brief time we have been able to spend there. Until a better method of obtaining this information can be found, the turtle pit count data will have to be used as a very rough index. To adequately determine the nesting population for a particular year would entail stationing someone at French Frigate Shoals throughout the entire nesting season.

During our aerial census of the islets on July 9th, we observed 33 turtles on East Island. After tagging 22 on July 10th, we visited the island on the 13th, and found only 5 animals present. No previously tagged turtles were again observed during the week. We have as yet no way of knowing whether a turtle which we tag has already laid her eggs or is about to lay or for that matter, may just be basking on the beach - a trait of the green sea turtle in the Pacific. Most laying, however, occurs at night.

While diving near the north side of Whale Skate, we observed approximately 20 turtle eggs which had been dropped and then probably eaten by fish. We wondered whether this was a dump or the result of our activities on the island. In 1968 animals which we had tagged and numbered during the day were observed laying eggs that same night.

450  
107

1970

Table (5)  
TURTLE TAGGING DATA  
French Frigate Shoals

Date	Tag#	Sex	Plastron Length	Carapace Width	Thickness	Carapace Length	Round Measurement	Location
7/9/40	351	F	20.7	19.6	10.8	25.7	28X24 1/2	Tem Island
7/10	352	F	27.2	25.2	13.9	34.0	37X32	East Island
7/10	353	F	29.3	28.0	14.3	36.3	38 3/4X35 1/2	" "
7/10	354	F	27.1	27.0	13.8	34.3	37 1/4X33 3/4	" "
7/10	355	F	29.8	27.0	14.6	35.0	37 3/8X36 7/8	" "
7/10	356	F	27.9	27.1	12.1	35.3	37 3/4X33	" "
7/10	357	F	27.8	26.6	13.3	34.2	36 1/4X33	" "
7/10	358	F	29.5	27.3	13.2	36.0	39 3/4X36	" "
7/10	359	F	27.5	27.1	13.2	34.2	36 1/4X33 3/4	" "
7/10	360	F	29	28.2	13.4	35.4	38 1/4X36 1/2	" "
7/10	361	F	30.8	28.4	14.5	37.5	42X39 1/2	" "
7/10	362	F	30.3	27.5	13.4	36.3	39 1/2X35 1/4	" "
7/10	363	F	30.4	29.3	13.6	36.0	35 3/8X36	" "
7/10	364	F	29.6	27.3	13.4	36.3	39 1/4X34 1/4	" "
7/10	365	F	30.8	28.4	12.7	36.3	39 3/8X35 1/4	" "
7/10	366	F	27.2	23.8	13.6	32.2	35X31 3/4	" "
7/10	367	F	32.1	29.4	15.9	36.4	40 1/2X39 1/2	" "
7/10	368	F	29.4	26.9	15.5	36.0	39 1/8X34 3/8	" "
7/10	369	F	30.4	28.4	14.0	36.4	40X35	" "
10	370	F	26.8	26.1	11.9	32.8	35 1/8X30 7/8	" "
7/10	371	F	27.8	28.9	13.6	35.3	38 1/8X36	" "
7/10	372	F	28.2	26.8	13.8	35.2	37 3/4X33 5/8	" "
7/10	373	F	29.0	27.6	13.4	35.6	38 3/4X35 3/8	" "
7/10	374	F	24.5	23.9	11.6	29.5	32X29 1/2	Round Island
7/11	375	F	29.5	27.9	12.1	35.9	38 1/2X33 3/4	Trig Island
7/11	376	F	28.9	26.9	13.0	35.2	38 1/8X35	Whale Skate
7/11	377	F	29.4	27.0	14.9	36.2	40 1/2X35 1/8	" "
7/11	378	F	28.9	27.2	14.5	36.0	39X36	" "
7/11	379	F	27.9	25.9	14.9	35.5	38 1/2X36	" "
7/11	380	F	29.3	28.9	13.8	35.3	38X38 1/2	" "
7/11	381	F	30.9	28.1	15.3	36.3	39 1/4X35 1/4	" "
7/11	382	F	28.3	27.6	14.5	35.2	38 1/8X36 5/8	" "
7/11	383	F	28.5	26.9	14.2		He got away	
7/12	384	F	28.9	27.3	12.4	36	39 1/8X34	" "
7/12	385	F	28.0	27.3	11.9	34.5	36 1/4X33 5/8	" "
7/13	386	F	28.9	28.9	15.7	35.6	37 3/8X35 1/2	Little Gin
7/13	387	Destroyed						
7/13	388	F	29.0	27.6	15.4	35.6	40X36 5/8	East Island
7/13	389	F	29.0	26.8	13.2	36.8	40 1/8X35 1/2	" "
7/13	390	F	30.3	26.3	13.6	35.8	38 3/8X35 1/8	" "
7/13	391	F	30.4	29.1	13.9	37.3	40 1/2X36	" "
7/14	392	M	27.2	26.8	11.0	34.1	36 7/8X32	" "
7/15	393	F	29.4	27.1	12.8	36.1	39 1/8X34 1/2	Whale Skate
7/15	394	F	28.1	27.0	13.7	34.6	37X34	" "
7/15	395	F	29.2	26.5	14.3	35.4	38 1/2X35 1/8	" "
7/15	396	F	32.1	28.8	14.0	38.1	42 1/8X37 5/8	" "
7/15	397	F	29.6	26.4	14.4	34.8	37 1/8X35 1/8	" "

(over)

Table (3)  
TURTLE TAGGING DATA  
French Frigate Shoals

Date	Tag	Sex	Flanston Length	Carpenter Width	Thickness	Carapace Length
1	Taken Kawai					
10/27/71						Wellington
2	1970 taken					Nov 10
3	Taken Oahu					Nov 15
4	Caught off Haulo <sup>a</sup>					Summer 1973
5	Retrop					6/73
6	Taken Oahu					9/3/71 antone

Table (6)

Turtle Pits  
French Frigate Shoals

Big Gin	22
Little Gin	109
East	
Whale Skate	<u>123</u>
Total:	

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