

1977 FFS & NECKER

Nesting Records - East Is. p. 24 (1977  
(START OF INCOVER TAGS))  
BASKER TAGS, p. 75-76, 88, 91  
Juvéniles in 1977 - p. 93 + p. 97.

2 of 2

G. BALAZS (808) 395-6409

LIBRARY OF  
GEORGE A. BALAZS

60

01 MAY 2002

TC-42 ✓  
90.8 cm ✓S-35<sup>3</sup>/<sub>4</sub> X 27<sup>1</sup>/<sub>8</sub> ✓TAG NOS- ✓  
2268LF ✓C-38 X 35<sup>1</sup>/<sub>2</sub> ✓  
96.5 ✓ 90.2 ✓

<u>Date/Time</u>	<u>Area</u>	<u>Activity</u>	<u>Remarks</u>
7/2 ✓ 0200 ✓	6-7 ✓	N ✓	
7/2 ✓ 2300 →	4-5 ✓	N-Lay ✓	wild-only one tag ✓
6/28/79 ✓	4 ✓	Lay ✓	*3257 ✓

Date ✓

7/2 ✓

6/25 ✓

TC-43  
97.2cm

73.9

TAG NOS - 61

2257 LFL  
2258 RFL

1 MAY 2002

S-38 1/4 x 28 7/8

C-40 1/2 x 36 1/2  
1029 92.7

Date/Time	Area	Activity	Remarks
7/2 0400	17	N-LAY	LFLimb

6/25/80 / 3 also  
6/13/80 AKA-18 EAST  
2257 only (3584 new)

62

01 MAY 2002

TC - 45  
80.6 cm

630

S - 31 3/4 x 25 1/8

TAG NOS -  
2278 LFL

C - 34 x 30 3/4  
06.4 70.1

<u>Date/Time</u>	<u>Area</u>	<u>Activity</u>	<u>Remarks</u>	<u>Date/</u>
7/2 2300	5	N	TMS	7/2
7/3 0630	5	N - notky?	TMS at dorsal position on all limbs and left neck and small ones on both eyes	

TC- 46

TAG NOS-

63

S-

C-

Date / Time

Area

Activity

Remarks

7/2 2300

6

N

positions  
left



64 TC-49 <sup>687</sup>/<sub>789</sub>

TAG NOS-

S-

C-

DATE/TIME

Area

Activity

Remarks

7/2 2300

8.

N

DATE/TIME

7/2

ORIGINAL

6/2

TC-50 /  
94.6 cm

01 MAY 2002

TAG NOS - 65  
2269 LFL  
2270 RFL

S-37 1/4 x 29 1/4

C-40 1/4 x 37 3/4  
102.2 / 95.9

DATE/TIME	Area	Activity	Remarks
7/2 2300	4-5	N-Lay	PREVIOUSLY TAGGED HUMB E/WAY - T.P. CORROSION 842R
<p>originally tagged/observed 5/31/79 EAST-FFS TCTB            C-40 1/4 x 37 1/2 (Areas 7-6-6-6) S-37 1/2 x 29 1/4            102.2 95.3 95.3 74.3            known to nest 4 times on EAST, last seen 8/11/79            TMR noted on Lefteye, LH 1/4 - 1/2 missing,            TAG 754 ON FLAP</p>			

NOTE: This turtle observed-noted-by RAUSON/KENYON  
 ON 5/11/77 ON EAST ISLAND

6/21/79 6

N-Lay  
 off for ~~respecting~~  
 ↓ EAST  
 2269, 2270  
 & new 3181  
 + Basking SFP & NEP

66

TC-51

01 MAY 2002

92.7 cm

74.0

TAG NOS-

5296

2271 LFL

2272 RFL

S-36 1/2 x 29 1/8

C-39 x 37 1/4

99.1

94.4

Date/Time	Area	Activity	Remarks
7/3/0200	3	N-Lay	

6/18/81

EAST-N

NO. 110



TC-52

TAG NOS-

67

S-

C-

DATE/TIME

Area

Activity

Remarks

7/3 0200

5

N

//////

68 TC-53

01 MAY 2002


93.2 cm  
S - 36 5/8 x 28 1/2 <sup>724</sup>

TAG NOS -

2274

2275

C - 38 3/4 x 36 1/2  
<sup>98.4</sup> <sup>92.2</sup>

Date/Time  
7/3 10406  


Area  
3

Activity  
N-LAY

Remarks

Date  
7/3  


1/2

TC-54

92.2 em

S-36<sup>3</sup>/<sub>8</sub> x 29<sup>1</sup>/<sub>4</sub>

74.3

TAG NOS- 69

2276 LFL

2277 RFL

01 MAY 2002

C-38<sup>1</sup>/<sub>2</sub> x 38

97.8

96.5

Date/Time

7/3 0630

Area

13

Activity

N-LAY

Remarks

Right and left fronts  
1/4 missing



Area	TC	Area	TC	Area	TC
1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
6	6	6	6	6	6
7	7	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9
10	10	10	10	10	10
11	11	11	11	11	11
12	12	12	12	12	12
13	13	13	13	13	13
14	14	14	14	14	14
15	15	15	15	15	15
16	16	16	16	16	16
17	17	17	17	17	17
18	18	18	18	18	18
19	19	19	19	19	19
20	20	20	20	20	20
21	21	21	21	21	21
22	22	22	22	22	22
23	23	23	23	23	23
24	24	24	24	24	24
25	25	25	25	25	25
26	26	26	26	26	26
27	27	27	27	27	27
28	28	28	28	28	28
29	29	29	29	29	29
30	30	30	30	30	30
31	31	31	31	31	31
32	32	32	32	32	32
33	33	33	33	33	33
34	34	34	34	34	34
35	35	35	35	35	35
36	36	36	36	36	36
37	37	37	37	37	37
38	38	38	38	38	38
39	39	39	39	39	39
40	40	40	40	40	40
41	41	41	41	41	41
42	42	42	42	42	42
43	43	43	43	43	43
44	44	44	44	44	44
45	45	45	45	45	45
46	46	46	46	46	46
47	47	47	47	47	47
48	48	48	48	48	48
49	49	49	49	49	49
50	50	50	50	50	50
51	51	51	51	51	51
52	52	52	52	52	52
53	53	53	53	53	53
54	54	54	54	54	54
55	55	55	55	55	55
56	56	56	56	56	56
57	57	57	57	57	57
58	58	58	58	58	58
59	59	59	59	59	59
60	60	60	60	60	60
61	61	61	61	61	61
62	62	62	62	62	62
63	63	63	63	63	63
64	64	64	64	64	64
65	65	65	65	65	65
66	66	66	66	66	66
67	67	67	67	67	67
68	68	68	68	68	68
69	69	69	69	69	69
70	70	70	70	70	70
71	71	71	71	71	71
72	72	72	72	72	72
73	73	73	73	73	73
74	74	74	74	74	74
75	75	75	75	75	75
76	76	76	76	76	76
77	77	77	77	77	77
78	78	78	78	78	78
79	79	79	79	79	79
80	80	80	80	80	80
81	81	81	81	81	81
82	82	82	82	82	82
83	83	83	83	83	83
84	84	84	84	84	84
85	85	85	85	85	85
86	86	86	86	86	86
87	87	87	87	87	87
88	88	88	88	88	88
89	89	89	89	89	89
90	90	90	90	90	90
91	91	91	91	91	91
92	92	92	92	92	92
93	93	93	93	93	93
94	94	94	94	94	94
95	95	95	95	95	95
96	96	96	96	96	96
97	97	97	97	97	97
98	98	98	98	98	98
99	99	99	99	99	99
100	100	100	100	100	100

S-

C-

Date/Time      Area      Activity      Remarks

<u>TIC</u>	<u>SUCCESSFUL NESTING</u>		<u>AREA</u>	<u>TC</u>	<u>AREA</u>
	<u>AREA</u>	<u>TC</u>			
1	5	22	SP	42	4
2	5	23	1	43	17
4	17	24	5	50	5
5	17	25	12	51	3
8	1	26	1	53	3
10	17	28	6	54	13
11	5	30	12		
13	6	31	15		
14	6	33	6		
15	15	34	5		
16	6	35	4		
18	12	36	5		
19	1	38	6		
20	2	39	6		
21	6	41	17		

36 = Total

area 6-8 = 22.2%

area 5-7 = 19.4%

area 17-5 = 13.9%

area 1-4 = 11.1%

area 4-2 = 5.6%

area 3-2 = 5.6%

area 12-2 = 5.6%

area 15-2 = 5.6%

area 2-1 = 2.8%

area 13-1 = 2.8%

area SP-1 = 2.8%

SP-1 = 2.8%

areas 4-5-6 = 47.2%  
12 of 18 areas

~~Date~~      ~~Area~~      ~~Activity~~      ~~Remarks~~

9/26/77 TO W-S via Trig - 11<sup>30</sup> AM  
 MONDAY NO BASKERS on Trig. Nothing on WS examined hatchlings at surface, yesterday's gone, but new ones down under at a slightly different location from yesterday's. Black and white photos of single hatchling released, and may have been taken by Ulya - several schools seem to be continually patrolling island. Noted juvenile in West cove ~ 1 PM so launched boat and captured it with scoop net. (See page 97).

At 1:35 PM two turtles came ashore, #1 - Big ♀, #2 small ♀. Both came ashore at the same time while Causey watched. #1 had tag size 49 on left flipper trailing. Head rested on small one's head. Causey got breath holds. At 2:20 PM #1 departed - #2 stay, partly in wave wash. ~ 2 PM #3 observed at NW point (more to N). - departed while I watched. Turned #2 at 5:30 PM - found to have tag 1746 LFL. Rectal Temperature - 29.1°C (see page 91)

72

~~messerschmitt~~  
TREES cut down by  
fuel tanks

~~TAG~~  
MANY Hawaiian Noddys noted dead  
on Tern and on Whale-Scate

9/26/77 MONDAY About 3 PM motor to East - in W-S  
West Cove noted and followed ~ 10' Tiger Shark -  
It had been cruising area for about 1/2 hour.  
Is this the fate of juveniles?  
Motored by Round and saw only 4 pups;  
Mullet is gone. Arrived at East  
and tried to net 3-4 juveniles seen  
at regular feeding sites. Landed on  
island, censused seals - noted adult  
with scar around neck - is this the  
result of blue fiber glass ribbon?  
Observed recent tracks on SP, and  
"good" <sup>relatively</sup> ~~put~~ in area 17. Island looks  
dry, devoid of birds.

9/27 TUESDAY TO Trig about 11 AM, but spotted  
2' Scars Sportsfishermen half submerged  
off the end of Tern - Towed back to  
Tern - good neck barnacles, Hawaii Kai  
sticker No. <sup>Telephoned</sup>  
on the way to Trig, again off East end  
of Tern. sighted <sup>Hawaii Kai man several times over</sup> very light brown  
gold juvenile - <sup>subsequent month</sup> <sup>no information</sup>  
at Trig noted 1 ♀ basket -  
TO Whale-Scate, at 1:15 PM

implications  
of DRIFT

BASK

<del>Date/Time</del>	<del>Area</del>	<del>Activity</del>	<del>Remarks</del>
9/27/77		noted two big turtles offshore, seem to have been chasing one another. also one small turtle traveling close to shore along backside of island.	

At 12:55 Causey noted #1 basker at NW point - (see page 91) Breath holds recorded ~ 2:10 PM - consecutive

BASKER #1 - 3:36 minutes  
4:20 "

4:04 ← " also include wide "yawn"  
6:31 "

3:55 ← moved flipper

at 2:23 turtle turned to be parallel with beach, head to SE. During observation period, head moved back and forth several times.

Flippers "flipped" a few times, but no sand thrown.

At 2:40 PM turtle departed. We departed about 3:00 PM to Trig - no basker, but tracks evidence that two total had been up. TO East via Round. Chased one juvenile, but couldn't catch it.

Back to W-S - no baskers.  
Back to Trig - 5 PM - one ♀ basker.

9/27 - Back to Tern - Sears boat gone,  
 report that plane C-130 landing tomorrow  
 on the way to Midway - Handed out  
 boat and cleaned gear.

JOHN W. MAZUR  
 1909 READ STREET #54  
 OMAHA, NE 68112

# 18.00 check  
 TO Tim  
 TRICAS  
 2 Roll slides  
 1 Roll color prints  
 36XP.

Got Temperature data from Clarke -  
 New recorder - Joe Palmeri

Need to sample small schools of  
 big blue which seem to be  
 constantly close to shore swimming  
 around W-5.  
 May be principally after large school  
 of small fish!

9/28 Cleared up quarters -  
 Depart FPS about 1PM - High level <sup>C-130</sup>  
 Made phone patch to HIMB before departure. <sup>1342</sup>

A DIGEST OF DIGESTION  
 by Horace W. Davenport  
 1975

For next BASKING EXPEDITION NEED - photos of RECTAL  
 photos of looking through telescope



9/22-9/28/77

BRIEF SUMMARY OF BASKING TURTLE OBSERVATIONS

DATE	LOCATION	Turtle No.	Time out	Return	OBSERVATIONS
9/23 FRIDAY	W-S	#1 #112 TAG	2:40 PM	5:30 PM	3:50 RAD - 30-31°C and 4:50
9/24 SAT	TRIG	#1 #2 #119 TAG #2 2396 TAG	12:05 PM 2:35	Chased off 3 PM Chased Back 3:55	3 PM RAD - 34°C 3:55 RAD - 33°C
9/25 SUN	W-S	#1 #2 #119 TAG #2 2398 TAG #3 #1160 TAG #4	12:20 1 PM 3:15 PM	< 3:30	RAD 3--PM 38°C 5:10 PM Clear 28.1
9/26 MON.	W-S	#1 ♀ #2 ♀	1:35 PM 1:35 PM		5:30 PM Clear 29.1
9/27 TUES	W-S	#1 ♂	~ 12:55	2:40	consecutive breath holds.
12/1-12/8/77					
12/2 FRIDAY	W-S TRIG		11:30 - 4:30		NOTE
12/3 SAT	TRIG	#1 TAG 1226 ♀ #2 948 ♂ TAG #3 ♂	5 PM TAG 12:26 > 1:20 - > 5 PM > 1:20 - > 5 PM > 1:20 - > 5 PM	9:42 9:42 9:42	SAW THREE BASKERS ♀ 31°C at 4:25 PM 33°C at 4 PM 24-25°C 4:45 PM
12/4 SUN	TRIG	#1 #2 #3 #4	11 AM - O - O O - 4:30 PM O - 4:30 PM		turned turned REC 24.5 RAD - 30°C REC 29°C
12/5 MON		#1 #2 #3	♀ < 10:30 - 12:30 PM ♀ 12:40 PM - 2:36 ♀ 11:00 AM - 2:36		COLD RAIN

\* Consider that there may be a trend of recoveries being made of animals originally tagged during same previous expedition, after a period/periods (expedition) of no observations.

(CONT.) BRIEF SUMMARY OF BASKING  
TURTLE OBSERVATIONS

DATE	LOCATION	Turtle No.	TIME OUT	TIME IN	OBSERVATION
12/6 TUES	TRIG		10:30 - 3:30		NO BASKERS
	W-S	TAG #219 ♂			BASKING on W-S
12/7 WED	TRIG	#1 948 ♂	11:30	11:00 AM	
	TRIG	#2 - ♂	12:50 PM	4:45	turned RAD - 26°C REC - 27.7°C
		#3 1214 ♂	2 PM	> 5:30 PM	

TAG #

1977  
BASKING INCIDENCE

77

32 TOTAL

56.25%  
18 considered

Observed basking = 14 43.75% TC 5

TC	Observed basking	Not observed basking
1		3
2		4
6		5
10		8
11		16
12		18
13		21
14		23
15		24
19		25
20		26
22		28
33		30
41		31
		34
		35
		36
		38 -
		39 -
		40
		42 -
		43 -
		45 -
		46 -
		49 -
		51 -

ations)

TWS

## SUMMARY OF 1977 CARAPACE MEASUREMENTS

<u>TC</u>	<u>S Length</u>	<u>S Width</u>	<u>C Length</u>	<u>C Width</u>	<u>TC</u>
1	34 $\frac{1}{2}$	27 $\frac{7}{8}$	35 $\frac{7}{8}$	32 $\frac{1}{4}$	
2	35 $\frac{3}{8}$ .375	27 $\frac{3}{8}$	38 $\frac{1}{4}$	34 $\frac{1}{2}$	
4	35 $\frac{5}{8}$ .625	27 $\frac{5}{8}$	37	35 $\frac{3}{4}$	
5	37 $\frac{1}{4}$ -	29 $\frac{1}{2}$	38 $\frac{3}{4}$	37	
8	37 $\frac{1}{8}$	27 $\frac{1}{2}$	38 $\frac{1}{8}$	35 $\frac{1}{4}$	
10	39 $\frac{1}{8}$ .125	29 $\frac{1}{4}$	41 $\frac{1}{4}$	37	
11	34 $\frac{1}{2}$	25 $\frac{3}{4}$	36	34 $\frac{3}{8}$	
12	36 $\frac{7}{8}$ .875	29 $\frac{1}{2}$	38 $\frac{1}{4}$	37	
13	36 $\frac{1}{4}$	27	38 $\frac{1}{2}$	35	
14	36 $\frac{1}{4}$	27 $\frac{1}{4}$	38 $\frac{1}{2}$	36 $\frac{1}{4}$	
15	36 $\frac{7}{8}$	29 $\frac{3}{4}$	39 $\frac{3}{4}$	36 $\frac{3}{4}$	
16	36 $\frac{3}{8}$	28	37 $\frac{3}{4}$	35	
18	35 $\frac{3}{4}$	29	38	36	
19	34	26 $\frac{7}{8}$	36	33 $\frac{1}{4}$	
20	37 $\frac{1}{8}$	27	39	35	
21	35	26 $\frac{1}{4}$	37 $\frac{1}{4}$	33 $\frac{1}{4}$	
22	37 $\frac{7}{8}$	29 $\frac{1}{4}$	40 $\frac{1}{2}$	38	
23	35 $\frac{3}{4}$	29 $\frac{7}{8}$	37 $\frac{1}{2}$	36 $\frac{1}{4}$	
25	32 $\frac{5}{8}$	23 $\frac{5}{8}$	34 $\frac{1}{4}$	32 $\frac{3}{4}$	
26	36 $\frac{1}{2}$	28 $\frac{3}{4}$	39	36 $\frac{1}{2}$	
28	36 $\frac{1}{2}$	27 $\frac{1}{2}$	39	35 $\frac{3}{4}$	
30	34 -	-	38 $\frac{3}{4}$	36	
31	36 $\frac{7}{8}$	28 $\frac{3}{4}$	38 $\frac{3}{4}$	35 $\frac{1}{2}$	
33	36 $\frac{7}{8}$	28 $\frac{1}{8}$	38 $\frac{3}{4}$	35 $\frac{3}{4}$	
34	39 $\frac{1}{2}$	29 $\frac{1}{2}$	42	38	
35	38	28 $\frac{3}{8}$	39 $\frac{1}{2}$	36 $\frac{1}{2}$	
36	36 $\frac{3}{4}$	29	38 $\frac{1}{4}$	38 $\frac{1}{2}$	

TC	S Length	S Width	C Length	C Width
38	35 1/2	27 1/2	37 1/2	36
39	37 3/4	29 3/4	39 3/4	37 1/4
41	37	28	39	35 1/2
42	35 3/4	27 1/8	38	35 1/2
43	38 1/4	28 7/8	40 1/2	36 1/2
45	31 3/4	25 1/8	34	30 3/4
50	37 1/4	29 1/4	40 1/4	37 3/4
51	36 1/2	29 1/8	39	37 1/4
53	36 5/8	28 1/2	38 3/4	36 1/2
54	36 3/8	29 1/4	38 1/2	38
	1273.5	1010.75	1419.75	1324.125
	N = 36	N = 36	N = 37	N = 37
	$\bar{x} = 35.37$	$\bar{x} = 28.08$	$\bar{x} = 38.37$	$\bar{x} = 35.79$
Range -	31 3/4 - 39 1/2	23 5/8 - 29 7/8	35 1/8 - 42 1/2	32 1/4 - 38 1/2

## 6/24 Island Pit Counts

FRIDAY

TRIG - 4

W-S - 81 (Many appear "not good")

LGIN - 10

GIN - Not Landed

## EAST (AREAS)

SANDPOINT - 28

1 - 18

5-6 - 40

8 - 10

9 - 6

11 - 3

12 - 3

13 - 3

14 - 2

15 - 2

16 - 3

17 - 11

TOTAL - 129

6/29 A few turtle tracks noted on Trig

WED

9/23 W-S nothing recent - no tracks showing - DOES NOT APPEAR ALL  
TORN UP, OLD pits in center - SW end and some at NW end.9/24 TRIG Little evidence of old pits, except at NE "HIGH" end.  
possible, one pet tracks still visible - 2-3 wks old.9/24 TERN 2 by paint locker; 27 from Sears to East; 11 from Sears  
to West; 2 by N beach - 1 set old tracks by SE end9/26 EAST - hard rain last night - but fresh tracks on Sand Point,  
a "good" nest in A17; rest of island showed no  
activity.

12/4 EAST/WS/TRIG/TERN → No indication of any recent nestings.

NO.  
DATE

DATE

6/24-6/24

6/25-6/25

6/26-6/26

6/27-6/27

6/28-6/28

6/29-6/29

6/30-6/30

7/1-7/1

7/2-7/2

7/3-7/3

7/4-7/4

7/5-7/5

7/6-7/6

7/7-7/7

7/8-7/8

7/9-7/9

7/10-7/10

7/11-7/11

7/12-7/12

7/13-7/13

7/14-7/14

7/15-7/15

7/16-7/16

7/17-7/17

7/18-7/18

7/19-7/19

7/20-7/20

7/21-7/21

7/22-7/22

7/23-7/23

7/24-7/24

7/25-7/25

7/26-7/26

7/27-7/27

7/28-7/28

7/29-7/29

7/30-7/30

7/31-7/31

# 81

## NUMBERS OF ♀ TURTLES PER NIGHT (1977)

NO. DAYS	Night PM to AM DATE	NO. OBSERVED	observed New	NO. OF THOSE SUCCESSFUL (?)	ISLAND
1	6/24-6/25/77 (Sat)	8	8	<del>4</del>	EAST
2	6/25-6/26	3	2	1	EAST
3	6/26-6/27	9	8	4	EAST
4	6/27-6/28 (Tuesday)	11	6	7	EAST
5	6/28-6/29	6	3	4	EAST
6	6/29-6/30	8	1 (note)	3	EAST
7	6/30-7/1 (Friday)	5	2	1 (!)	EAST
8	7/1-7/2 (Saturday)	9	6	6	EAST
9	7/2-7/3	11	8	7	EAST
10	7/3-7/4 (Monday)				

44 Turtles in 9 NIGHTS  
 ~ 4.9 per night

1 Recovery on East out of 44 encountered =  
 2.3% (a 3 year cycle)

end.

Numbers of turtles per night (1977)

Location	No. observed	No. banded
EAST	8	8
EAST	3	3
EAST	11	11
EAST	11	11
EAST	1	1
EAST	8	8
EAST	6	6
EAST	8	8

44 turtles in 2 nights

on 11/10/77

1 banding on East out of 44 banded  
(0.23%)



# BASKING TURTLE CENSUS

83

DATE/Time	ISLAND	BASKING				OFFSHORE			
		M	F	I	TOTAL	M	F	I	TOTAL
6/22	Necker 4PM	-	-	-	0	-	-	2 <sup>1 Big 1 juv</sup>	2
6/24	1000 Trig	-	-	-	0	-	-	-	0
6/24	1200 W-S	-	2	12	14	1	1	7	9
6/24	2pm Round/mulled bare	-	-	-	0	-	-	-	0
6/24	3pm LGIN/GIN	-	-	-	0	-	-	1	1
6/24	1900 EAST	1	8	-	9	-	-	2	2
6/25	1830 EAST	2	5	2 <sup>sp</sup>	9 <sup>(SEP)</sup>	-	-	-	-
6/26	1845 EAST	1	10	1	12 <sup>SEP</sup>	-	-	-	-
6/27	1500 EAST	1	13	3	17 <sup>(SEP)</sup>	-	-	2	2
6/28	1900 EAST	-	-	-	14 <sup>SEP</sup>	-	-	-	-
6/28	1500 W-S	NO BASKERS AT Regular site - Rotten seal - many IW - two caps observed							
6/29	1500 W-S	3 <sup>at NW point</sup> none at regular site - A number seen and photoed							
6/29	1530 TRIG	NO BASKERS							
6/29	1900 EAST	0	4 <sup>3SEP 1SEP</sup>	-	4	-	-	-	-
6/30	1700 TRIG	NO BASKERS							
6/30	1900 EAST	1 <sup>estimated</sup>	16	0	17	of all turtles, only 1 TC (TC10)			
7/1 <sup>respm</sup>	1800 EAST	0	12 <sup>appear with</sup>	0	12 <sup>SEP</sup>	-	-	-	-
7/2	1530 TRIG	1	2	3	6	-	-	-	-
7/2	1830 EAST	0	13 <sup>7SEP 9SEP</sup>	0	13	-	-	-	-
-----									
9/23/77 <sup>Friday</sup>	W-S 2:30-7:5:30	1	0	0	1	-	-	2	2
9/23/77 <sup>5:45pm</sup>	TRIG	-	-	-	5	But none at 1pm			
9/23	TERN	12:30pm - 1 SMALL By hoist 6pm - 1 SMALL N side Is.							
9/24 Saturday	TRIG 1-4pm	2	-	-	2	-	-	2	2
9/25 SUN	TRIG	Boat survey at 5:30pm - NO TRACKS APPARENTLY NONE ALL DAY							
9/25 SUN	W-S	2	2	-	4	1	-	1	1
9/26 MON	W-S	-	3	-	3	1 <sup>JUV</sup>	-	3-4	3-4
9/26	TRIG <sup>5:30pm</sup>	-	1	-	1	-	-	-	-
9/26	EAST	-	-	-	0	2-3 JUV	-	0	0

## BASKING TURTLE CENSUS

DATE/TIME	Island	BASKING				OFFSHORE			
		M	F	I	TOTAL	M	F	I	TOTAL
9/27/77	W-S	1			1	1 JUV.			3
9/27	TRIG				1 at 1145				3
"	"								
"	TRIG				2 (departed but evidenced by tracks)				
					5 PM BASKING				
FRIDAY 11:15 AM									
12/2/77	TRIG				0				
"	"				3 all N shore				3 south side of TRIG -
12/2	W-S				nothing from 11:30 AM - 5 PM				2 1 ad.?
12/3 SAT 1:20 PM	TRIG				1 TAG 1226				
12/3 returned at 3:20 PM	"				↓ still there				3 south
12/3 2-3 PM	W-S				nothing				0
12/4 2 PM	EAST				nothing				0
12/4 3 PM	W-S				nothing				0
12/4 2-11 PM - 5 PM	TRIG	1948			2	1			4
12/5	TRIG	0			3	0			3
12/6	TRIG				nothing				10:30 AM - 4 PM
12/6	W-S	1			0	0			1 - JUV-SA 3
12/7	TRIG	1948 31214 2420			0	0			1 - 2 A's 3
12/8	W-S								1 - JUV/SA 1 - Adult > feeding? 2
W-S from Rainbow Air at 1:15 PM - No Baskers									



# ADULT TURTLE RECOVERIES

91

01 MAY 2002

REC. LOC.

DATE

TAG NOS.

CURVED-STRAIGHT

7/2/77

948 MALE BASKER

Right side carapace TR16

7/2/77

947 FEMALE BASKER

pc's

TR16

6/8/77

Blue Plastic (R Flap) offshore UW

W-S

9/23/77

1212<sup>LF</sup> MALE BASKER

RFL W-S

OBSERVED AND MEASURED twice with RADIOMETER - PHOTOS

9/25/77

1160 RFL MALE BASKER

W-S

#3 - see page 21

new additional tags  
2400 RFL, 2401 LFL

PL-26, SW 25 1/2, TAIL-17 1/2

44.5

9/26/77

174<sup>6LFL (OFF)</sup> replaced with -  
2305 LF same hole

C-28 3/8 x 25 5/8

72.1 65.1

W-S

original  
1/21/76  
30 months

2304 RFL

S-26 5/8 x 20 5/8

67.6 52.4

PL-20 7/8 53.0

TAIL-5 3/4 14.6

Small ♀ Scratch/cut marks (older)  
on both sides of carapace -  
Female BASKER

Tues 9/27/77

? SIZE 49 ADULT MALE BASKER

Tag on R Flipper 1/2 way out.

948?  
12/1/77

(NW point) Black SHELL  
deep scratches on shell.



PIECE OF SHELL MISSING ON RIGHT SIDE

W-S

01 MAY 2002

DATE

TAG NOS.

ADULT

CURVED - STRAIGHT

Rec Loc

~~12/3/77~~~~1226 LF~~~~FEMALE BASKER~~~~photo w/  
seal/WA~~~~JOINED SAND  
SPIT OF TRIG~~

942

~~12/3/77~~ @  
and ~~12/4~~  
and ~~12/7~~~~948 RF~~~~MALE  
BASKER~~~~photo from  
behind~~~~west end of  
TRIG  
11~~~~12/4/77~~ @~~1229 RF~~~~FEMALE  
BASKER~~~~Brownish SHELL -  
Reddish in skin (ventral)~~ TRIG

+ new TAGS

2417 RFL; 2418 LFL

~~12/4/77~~ @~~1120 RF~~~~1121 LFL~~~~Female  
BASKER~~~~dark shell -  
lots of FAT, hind~~

TRIG

+ new TAG

2416 RFL

~~12/6/77~~ @~~1212~~~~BASK  
MALE~~~~Right side of shell -  
healed deformity~~

4:30 PM W-S

~~12/7/77~~ @~~1214 LF~~~~BASK  
MALE~~

TRIG

747

# JUVENILE TURTLE TAGGINGS

01 MAY 2002 93

DATE

TAG NOS.

44.5cm

CURVED-STRAIGHT

WT.

Loc  
IS.

6/25

2215

LEK - see recovery

$17\frac{1}{2} \times 15\frac{1}{4}$

$16\frac{1}{2} \times 13\frac{1}{4}$

20

East

1814

44.5

38.7

41.9cm

33.7

7/2/77

2266 LFL

2267 RFL

$15\frac{3}{8} \times 13\frac{5}{8}$

$14\frac{3}{4} \times 11\frac{7}{8}$

13

East

1623

39.0cm

34.6

37.5cm

30.2

12/1-12/8/77 PPS Expedition - no juvenile captures (due to tigers in w-s cave?)

→ Sept 77 Expedition?

Juvenile TURTLE RECOVERIES 01 97  
MAY 2002  
44.9cm

DATE TAG NOS. CURVED-STRAIGHT WT LOC.  
~~6/25/77~~ ~~1816 LFL (OFF)~~ ~~17 1/2 x 15 1/4~~ ~~(16 1/2 x 13 1/4)~~ ~~20lbs~~ ~~EAST Reef~~  
 Replaced with ~~2215 LFL~~ ~~PL 3 1/2~~ ~~TAIL - 2 3/4~~ ~~7.9~~  
 drill hole in 11th marg R. Right limb - ~~7.9~~  
 mouth sample taken (+3/4) (+1/4) (+1/2) (+1/8) (14 Months)  
~~9/18/76~~ ~~16 3/4 x 15~~ ~~16 x 13 1/2~~ ~~EAST~~  
~~42.5~~ ~~38.1~~ ~~40.6~~ ~~33.3~~ ~~37.5cm~~

~~7/2/77~~ ~~1623 RF (OFF)~~ ~~1624 LFL (OFF)~~ ~~C 15 3/8 x 13 5/8~~ ~~(14 3/4 x 11 7/8)~~ ~~13lbs~~ ~~EAST~~  
 TW 273 11th marginal  
 Replaced with ~~2266 LFL~~; ~~2267 RFL~~ ~~PL - 1 1/8~~ ~~TAIL - 2 1/2~~ ~~6.4~~  
 ORIGINAL 4/16/76 (39.1) (34.6) (+1/8) (+1/4) (37.1) (30.8)  
~~C 15 3/8 x 13 5/8~~; ~~14 5/8 x 12 1/8~~ ~~EAST~~

~~9/26/77~~ ~~1737 RF (OFF)~~ ~~C - 18 3/4 x 16 3/4~~ ~~47.6~~ ~~42.5~~ ~~S - 17 5/8 x 14 1/2~~ ~~36.8~~ ~~W-S~~  
 REPLACED with ~~2402 RF (widened tag)~~ same hole  
~~2403 LFL~~ ~~24lbs~~  
 PLASTRON - 12 3/8 31.4 - 44.8cm

original  
1/19/77  
21 months

Stomach Sample obtained -  
 Big plug of Coelium.  
 Photos in Boston Whales. Black head and Flippers -  
 white scum on shell; old scratch marks/cuts  
 through 3rd & 4th laterals left. Small  
 amount of pink coralline on shell - bygger  
 patch on RPC. Polysiphonia on shoulders,  
 neck and pelvis.

7. 1976

12/1-

12/8 PPS Expedition - no juvenile recovery made



*[Faint, mostly illegible handwritten notes and scribbles on lined paper]*



# MONK SEAL CENSUS

193<sup>typ</sup>  
SA  
of these

DATE	TIME	ISLAND	Adults	SA	PUP	SWP	LYP	PREG	
6/22	4PM	Necker	13 <sup>+</sup> dead	5	1 <sup>in tide pool</sup>	1	-	-	
6/24	1000	TRIG	6	6	1		1		
6/24	1200	W-S	26	14	11 <sup>black</sup>	5	3		
6/24	1400	Round	5	<del>5</del>	18	4			
6/24	1400	MULLET	5	3	3	1			
6/24	1400	BARE	1	2					
6/24	1500	LGIN	5	5	1	1	1		
6/24	1500	GIN + detached	8 indistinguishable						
6/24	1900	EAST	18 <sup>(bite lip from TRIG)</sup>	4 <sup>+1 dead</sup>	14	10	1	1	
6/25	1830	EAST	NOTED new pup - <del>1</del> mb Bill/Scale Attached						
6/27 <sup>MON-DAY</sup>	1500	EAST	15	3	21	13 <sup>of these; 6 new</sup>			
6/28	1500	W-S	27	3	13	5	-	2?	

9/23/77	2200PM	W-S	23 <sup>(7m)</sup>	18 <sup>(2m)</sup>	8 <sup>(7 yellow)</sup>	0	3	
9/24	100AM	TRIG	12 <sup>(3m)</sup>	11 <sup>(1)</sup>	1 <sup>(1)</sup>	0	1	
9/24	5PM	TERN	1 male (tagged new molt) > Together all day 1 big female					
9/25	1PM	W-S	29 <sup>(19m)</sup>	24 <sup>(3m)</sup>	6	0	7	
9/26	12 noon	W-S	25 <sup>(11m)</sup>	20 <sup>(5m)</sup>	6	0	6	
9/26	330PM	Round	0	0	4	0	0	
9/26	4PM	EAST	6 <sup>(1m)</sup>	8 <sup>(2m)</sup>	11	1	1	
9/27	1PM	W-S	23 <sup>(11m)</sup>	12 <sup>(5m)</sup>	6	0	5	
9/27	~3:30PM	ROUND	2		4	0	2 and 2	

12/2 <sup>FRIDAY</sup>	12 noon	W-S	21 <sup>(3m)</sup>	11	4	0	5 <sup>typ</sup>	0
12/3	2PM	W-S	19 <sup>(2m)</sup>	12	3	0	4 <sup>green</sup>	0
12/3	4PM	TRIG	19 <sup>(3m)</sup>	7	3	0	2 <sup>dead</sup>	0
12/4	1130AM	Round	3	0	0	0	0	0
12/4	12:30PM	La Perouse	0	? - 1 - ?		0	0	-

next page

## MONK SEAL CENSUS

<u>DATE/TIME</u>	<u>ISLAND</u>	<u>Adult</u>	<u>SA</u>	<u>PUP</u>	<u>SWP</u>	<u>LYP</u>	<u>PRE</u>
------------------	---------------	--------------	-----------	------------	------------	------------	------------

12/4 1:30 PM	EAST	8 (1m)	4	4	0	1	1
12/4 3 PM	W-S	21 (4)	16	7 <sup>1 shark bite</sup>	0	9 <sup>2G</sup>	1
12/4 4:30 PM	TRIG	17 (3m) <i>1 very SKINNY</i>	4	1	0	0	0
12/6/77 12:45 PM	TRIG	25 (4m)	12 <sup>(1 glass eye)</sup>	3	0	1G	0
12/7 10:30 AM	TRIG	32 (5m)	9	2 <sup>1 slight green</sup>	0	3 <sup>1 green brown</sup>	1

only one seal besides dead SA, seen on Trig during trip -  
 - tracks of possibly two seen on sand spit & disappeared 12/7

## MONK SEAL TAG RECOVERIES

DATE	TAG NO.	STAGE	LOCATION	REMARKS
6/24/77	Bite lip (from TRIG) <sup>Teeth show</sup>	A	EAST	Molt
6/24	A905	SA	EAST	Molt
6/25 night	787	A	EAST	
6/26	A905	SA	EAST	molt
6/27	910	SA	EAST	
6/28	A8	A	W-S	
6/28	A1094	A	W-S	looks big from molt I remember. lip post missing - headed
6/28	A768	A	W-S	
6/29 <sup>am</sup> night	A757	SA	EAST	green
Note -	Three (3) dead seals noted this trip		1 - Adult Necker 1 - SA EAST	1 - SA W-S ← 1 - Burried
7/1 night	A451	SA → A	EAST	
7/2	A1094	SA → A	EAST	
//				
9/25/77	Scar pattern - photo - Roll 3	A new molt	W-S	
9/26 <sup>MORNING</sup>	A788	A ♂	TERN	
9/26	Scar around neck - color photo on Roll 5	A	EAST	
9/26 <sup>obtained</sup> 11:30 AM	A788	A ♂	same place on TERN	
9/27 ~ 1:30 PM	212	A ♀	W-S	Scar head photo
//				
12/2/77 noon	775	small A	W-S	
12/2	LEFT side of FACE SCARRED 1973 photo?	SA	W-S	photo
12/3 SAT	scooped out section on belly	P	TRIG	photo Roll 2
12/3 SAT	straight scar almost around torso	A	TRIG	photo Roll 2
12/3 SAT	TAG - J scar	A	TRIG	
12/4 SUN	Seawater TRIG 25.5C			
12/4 SUN	A212	scar head	A	Look good - W-S
12/4 SUN	A922		A B19	W-S
12/4	scooped out belly	P	seen 12/3 on Tring	W-S
12/4	left side of face scarred	SA	seen 12/2	W-S



Transcribed from Joe Palmeri recordings -  
 (original in file)

DATE	TIME	TEMP	DATE	TIME	TEMP
SEP 30	1430	27.5	NOV 4	1030	25.5
OCT 1	1130	28	" 5	1400	26
" 3	1400	28	" 6	1000	26.5
" 4	0730	27	" 7	1600	26
" 5	1300	27.5	" 8	1300	26
" 6	1630	27.5	" 9	1600	25.5
" 7	1130	27.5	" 10	1200	25.5
" 9	1000	27	" 11	1600	26
" 10	1200	27.5	" 12	1100	26
" 11	1200	28	" 14	1200	26
" 12	1200	27.5	" 15	1200	26
" 13	1200	27.5	" 16	1000	26
" 14	1100	27	" 18	0900	25.5
" 15	1030	27	" 19	1200	25.5
" 17	1100	27	" 20	0900	26
" 19	1330	28	" 21	1200	26
" 20	1030	27.5	" 23	1600	25.5
" 21	1430	27.5	" 24	1530	26
" 22	1500	27.5	" 26	1400	26
" 24	1300	27.5	" 28	1530	25.5
" 25	1200	26.5	" 29	1230	25.5
" 26	1600	27	" 30	1400	26
" 27	1630	26.5	DEC 1	1600	25.5
" 28	1500	26.5	" 2	1500	25
" 29	1600	27	" 3	1400	25.5
" 31	1530	27	" 4	1410	25
NOV 1	1600	26.5			
" 2	1400	26			
" 3	1500	26.5			

# CLIMATIC

DATE	SEAWATER	ISLAND	GENERAL
6/22/77	74°F (EASY RIDES)	Necker	Clouds over bays
6/23 Thurs		FFS	calm seas, light winds
6/24 Friday		"	calm to moderate
6/25 sat	27°C	EAST	reasonably calm seas - a few afternoon rain showers
6/26 SUN	27° -	EAST	mild trades - good seas
6/27 Mon	-	"	Hot calm seas - light winds
6/28 Tues	-	SUNRISE ~ 6:18 AM SUNSET -	
6/29 wed	-	EAST	Very calm but not glassy - bright sun
6/30 Thurs	-	EAST	Bright trades, but declined during late afternoon
7/1 Friday	-	EAST	gentle to moderate trades
7/2 Sat	-	EAST	Sunny - hot - night - 11:30 dark
7/3 Sun	27.5° (Tern IS)		Reasonably calm and hot all day Sunny - moderate wind - some chop
//////			
9/22 Thurs		TERN	Partly cloudy - Hot - light to moderate TRADES
9/23 Friday		FFS	Sunny w/ some clouds - moderate trades
9/24 Sat		FFS	moderate trades sunny, some clouds,
9/25	Seawater as per 27.7°C Telethermometer by Whitlow	W-S	Sunny, with some clouds, moderate trades
9/26		W-S	calmer - a short rain - warm and sunny - smooth seas,
9/27/77	A few RAINSHOWERS	FFS	calm and Hot in morning - some wind up in afternoon
9/28		FFS	hot and calm during morning before departure.
//////			
12/1/77 Thursday		FFS	W - NW wind - Moderate - FAIRLY CALM IN STOKES
12/2 Friday	Report 68°F AIR in morning	FFS	NIGHT GUST 30 KNOTS. SUNRISE ~ 7:15 PM
12/3 SAT	Very cool in afternoon	FFS	WIND out of N right angle to runway - clear sky SUN
12/4 SUN	25.5°C 4:45 PM	TRIG	WIND gentle out of South - a few clouds -
12/5 MON	11 PM - 45 KN NNW (Morning - West moderate WIND - Then South, then N-NW - Hard rain in afternoon)	TRIG	WIND strong - heavy rain in afternoon
12/6 TUES	25°C few showers around noon	TRIG	NNW strong wind - some choppy seas
12/7 WED	25.3°C North SURF UP	TRIG	light S-SW WIND high overcast, but SUNNY in ANY STARS
12/8 Thursday	white surf all around Necker	FFS - RETURN	SUNNY - 12k from W-SW Harry Clarke - RAIN BOW AIR

# Photo Log

6/20-6/22 Roll 1 EL ASA 64 - Black footed behind boat -  
1977 coming up on Necker - Necker - ash on Necker

6/22- Roll 2 ELW - Necker,

6/22-6/24 Roll 3 EL ASA 64 ash on Necker, Lakerouse; Boobies on  
Tng; Birds on W-S

6/24-6/25 Roll 4 EL ASA 64 - Turtles on W-S, immature redfoot, Sooty in flight above  
nesting turtle - East Is.

6/25-6/26 Roll 5 EL ASA 25 seal and pup; Shearwaters in flight - Spotted Puffin

6/26-6/27 Roll 6 EL ASA 64 Easy Rider, seals with pups

6/27-6/28 Roll 7 EL ASA 25 photos of basking turtles, and turtle  
with mother seal - Captain - nesting turtle  
in Ikelite housing behind whale-skate

6/28 Tues Roll 8 EL ASA 160 2-3 in the afternoon  
IN housing behind W-S 12-3

6/29 wed Roll 9 EL ASA 64 F8, seal and pup; Sooty tern chick close up;

7/1-7/2 Roll 10 EL ASA 64 seal and pup; Basking Turtles 1 & 22

7/3 Roll 11 EL ASA 160-20ex Back of W-S seal and turtle

9/22-1977 ROLL 1 ELW ASA 25 PREVIOUS PHOTOS - BROWNES TURTLES; DEAD HAWK  
FROM KANEHOE BAY; WAIKIKI, AQUARIUM'S SCAR NECK  
RELEASE; ARRIVALS OF NIHOA 9/22; ARRIVALS OF NECKER 9/22;

9/22-9/24 Roll 2 EL ASA 64 WA OF NIHOA AND NECKER; C-130  
ROUND - EAST - PFS 9/23  
departure from Tern; Young SASA looking  
up; WHITLOW W/TURTLE #212; Full Frame TEL #212;  
9/24-2396 TRIG Brown Shelly; Noddy Terns

9/24-9/25 Roll 3 EL ASA 64 Basker tagged 2396 TRIG Brown Shelly;  
9/25 Causey setting up full thermometer on W-S. Aerial  
of Boobie; Adult and Juvenile boob begging; seal with scars;  
Young seal with nose ones in background; male Basker  
#2 tagged 2397; #4 Basker mouth open (chased out by #7?);  
#3 tag 1160 + 2400-1 Basking; Hatching head coming  
out of sand.

9/26 B<sup>ew</sup> Roll 4 PLUSX ASA 125  
9/26- Roll 5 EL ASA 64 (MEN IN MESS DECK - INSPECTION);  
HATCHLING ON W-S

JUVENILE RECOVERY 1737; JUNK ON  
EAST; SEAL WITH SCAR AROUND NECK ON EAST; WHITE  
TAILED TROPIC BIRD BY CLUB ON TERN; SEAL FACE 1W/PL; 1 without;  
old 212 on W-S; 9/28 white tailed tropic bird w/ club face and 1 full body

10/1/77 PFS Roll 1 END OF ROLL Arrivals of Necker; - KANEHOE BAY MORTALITIES  
EARLIER ON ROLL  
EL ASA 64

- DATE      ROLL NO.
- 12/1/77  
Thursday  
EL ASA 64
- ROLL 2 - C-130 taking off; 1/2 seal face seal on W-5;  
Albatrosses w/water TEL; Small shore bird TEL;  
12/3 Last photo on roll - dead SA on Tern-5
- Roll 3  
ASA 64 EL  
12/3/77
- ROLL 3 - dead SA on Tern - close ups stomach, w/leg/paw  
WA Bk/foots with egg on Whale-skate; pulp w/shank bite TRIG;  
with scar on (and) torso TRIG; Turtle 948 07 WA; Turtle 1226 w/scar  
Adult seal (TAG) w/SCAR; TEL of Causey w/RADIOMETER;  
(CAPTAIN ON ROLL - BOOBIE w/TURTLE IN BACKGROUND TEL) - 12/4  
La Perouse and h. La Perouse.
- 12/4  
ASA 64 EL
- ROLL 4 - La Perouse Pinacle from various angles -  
MACHINERY ON EAST; MANY ALBATROSSSES; DOMINANT  
EXOTIC VEGETATION; CLOSE-UP OF JUVENILE SEAL FACE  
ON W-5;
- 12/4  
ASA 64
- ROLL 5 w/Hittow and me on TRIG; Rectal  
TEMPERATURE MEASUREMENTS - first 1229, new 2417, 2418  
THEN 1121, 1120, new 2416; 12/5 - Me looking through  
BINOCULARS ON TRIG; Seal A698 on Trig w/another;  
Close ups of BFA w/water lens. 12/7 Seal on  
quarters, A794 w/pen; Black footed w/seal; TEL of 948 hit  
by wave (last few on roll TEL F stop not locked)
- 12/7  
ASA 64
- ROLL 6 <sup>TRIG</sup> Masked boobie w/ 1214 ♂ in background; 12/8 HHS  
Station Logbook - photo album photos; RAINBOW AIR UNLOADING; MEN  
By plane prior to departure. INSIDE PLANE, KAMIK USCG.



SUMMARY OF GROWTH MEASUREMENTS  
FOR TC RECOVERIES, 1977

		<u>STRAIGHT</u>		<u>CURVED</u>	
TC 50	5/31/74 -	37 <sup>1</sup> / <sub>2</sub> (95.25)	29 <sup>1</sup> / <sub>4</sub>	40 <sup>1</sup> / <sub>4</sub>	37 <sup>1</sup> / <sub>2</sub>
842/HMB	7/2/77 =	37 <sup>1</sup> / <sub>4</sub> (94.62)	29 <sup>1</sup> / <sub>4</sub>	40 <sup>1</sup> / <sub>4</sub>	37 <sup>3</sup> / <sub>4</sub>
37 months		- <sup>1</sup> / <sub>4</sub> (-.64cm)	0	0	+ <sup>1</sup> / <sub>4</sub>

## Flap KNOTS OR SCARS, 1977

TC2 Tag 2110 put in existing hole

TC20 part of flap missing

22 Right flap missing

31 small TMR L shoulder near flap

34 Part of right flap missing

38 Right flap part missing;

~~1410~~ ~~1410~~ ~~1410~~ ~~1410~~ ~~1410~~



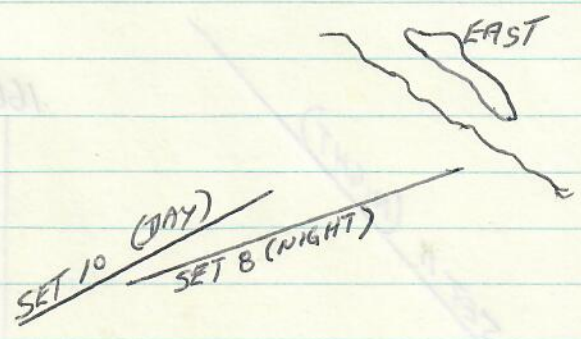
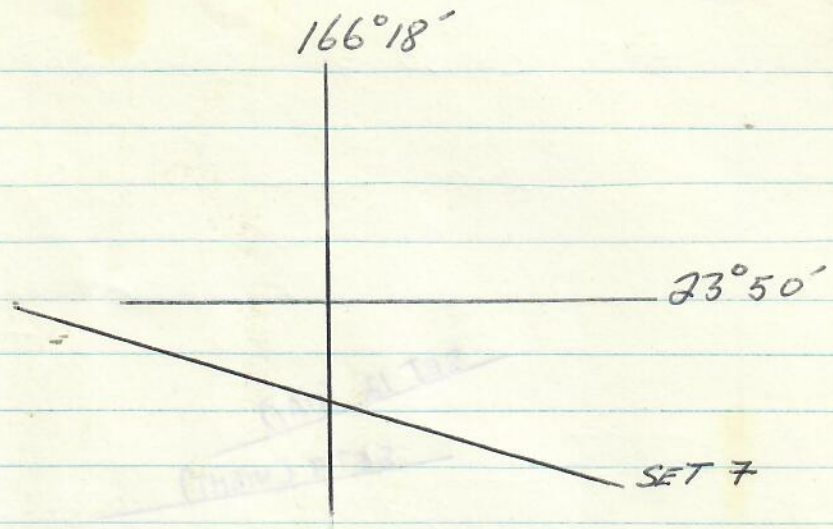
6 TOTAL POSSIBLES out of 39

15.4%

7 (6 above + 1<sup>tag</sup> recovery) out of 40 = 17.5%

R/V EASY RIDER SHARK FISHING  
APRIL MAY 1977  
JUNE

WHERE DID SHARKS GET TUNNIES?



~~SET 12 (DAY)~~  
~~SET 9 (NIGHT)~~

GIN

LITTLE  
GIN

SET 11 (NIGHT)

166°14'

23°40'

G. H. BALAZS

LIBRARY OF  
GEORGE H. BALAZS  
UNIVERSITY OF HAWAII  
Hawaii Institute of Marine Biology  
Coconut Island • P. O. Box 1346 • Kaneohe, Hawaii 96744

