

BOOK 2

LIBRARY OF
GEORGE W. BALAZS

FRENCH
FRIGATE
SHOALS

1974

Book 2 1974

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Skull injury seal - 212 tag no.

9/28
photos needed - - ^{fresh} Trigger fish
- fish from birds
- small GG
- shearwaters chick

measure width of W-S

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CONTENTS

- 8/14/74 - W-S Ghost crab count - page 55
9/19/74 - FFS aerial turtle survey - page 58
9/28/74 - Monk seal measurements - page 66-



NO. 1130

COMPOSITION BOOK

FAINT RULED WITH MARGIN

120 PAGES • 9½ x 7½ IN.

No. 1130-P Has Numbered Pages

S. E. & M. VERNON CO., ELIZABETH, N. J. 07208
DIV. OF THE MEAD CORPORATION

- 12/12/74 - FFS aerial survey - page 70
Summary results of nest excavations - pages 77-84
Seal tag recovery summary - page 90
W-S TC and turtle tag NOS - page 108-110
Miscellaneous notes - pages 119 →

check to JHW 8/10 225.⁰⁰
check to Canteen - 8/12 323.⁷⁰
FFS

Radio stations -
1. Oakland
2. Alb. N.M.
3. KNX - L.A.
4. Portland
5. Salt Lake

Olva - IGnapolis or Ajax?
↓
~~no scales anterior~~
off head

Have Ed -
Take Notes on Turtles -
Receipts -

- photos needed -
- sheepshead
- hatchling head, etc
- small species C.G.
- from Tern roof
- E on pole
- Juvenile head
Send some gear back on
Oct 3 flight -

write for mariculture info

J. Wheeler ? - 75.⁰⁰

J. Wheeler 10/22 - 225.⁰⁰

FFS Canteen 10/18 - 113.¹⁰

R. Chau 10/17 - 225.⁰⁰

FFS Canteen 12/2 - 207.⁷⁰

TIGER
gony
Shank parasite -
(By Townsley) Rhynchobdella

GEORGE H. BALAZS
LIBRARY OF

Notes - Seal w/ yellow tag 766 - $\frac{1}{2}$ adult.
 bird feet tracks all over island. cover turtle
 tracks rapidly therefore helping to distinguish newly
 formed tracks.

"Monitor without modify"

Attempting to do night work, as well as substantial amount of
 daytime data collection.

need

Electrical tape, canned milk, Chocolate

Breeding Distribution, History and Population of
 North Pacific Albatrosses
 July 69 by Rice and Kenyon - The Auk 79: 365-386

Breeding Cycles and Behavior of Laysan and
 Black-footed Albatrosses by Rice and Kenyon
 The Auk Vol 79 517-567 Oct 1962.

marked location < T95 loayed, covering area 5 - ground wire cut from pit.

marked location < T165 loayed area 6, C1842 $\frac{1}{2}$ R, knocked over T94 131 eggs,
 put up again - T165 egg nest sits immediately inland of T94 stake.

July 11 Thursday John W. - whale-skate - Turtle up area 10
2200 1 pit.

July 12 Friday 0000 Turtle in pit area 11. turtle returning area 2
no pits.

0100 turtle up area 12. T200^{AV} 3rd pit and
moving (4 1/4 x 3 7/2) 0851.


0230 T94 1st pit area 1. turtle sprayed
T202^{AV} area 1, left side only, no pits.

0300 T94 (C1^{prev} 794') area 1 laid (39 1/4 x 36 3/4)
marked location

0430 T200 returned, no lay. T202 returned
area 2, no lay, 1 pit.

0630 several new tracks but no animals seen.

Saturday NEP-T33 SEP-T76, 2(?) (1)^{week}. Retrieved ^{in/area}
July 13 Shearwater trapped w/ only head showing area 7.

1300 SEP-T17-2, 165⁽¹⁶⁾ and 4(0) also no Tpw/2nd label
1900 having a piece peeled off.  and T with section
missing out of right side.

2200 T46 and 27 area 2 1 pit each. T21 area 3
2nd pit (should be FW391). T5 area 3 1 pit. T165 up
area 5. T95 1 pit area 5. SEP baskets-T80 and
section out of right. Turtle with no T or tag
area 13 2 pits. T88 coming up area 17.

Sunday July 14 "Stripe" in pit end of sand point.

0000 T27 area 17 2nd pit behind tent. T46 2 pits
area 1. T21 1 pit area 3. T5 in chamber area 4. ^{To copy}
T76 also looks like 97 freshly painted(??) coming up area 7.
Both SEP baskets still there. Area 13 no T returned.

marked location <
marked location <

T89 laying area 15.
T8 area 16 laid, 2 pits.

Notes: Small shark ^{GRAY} caught 7/13, stomach empty, measured to be shovels 1.5'.

May be valuable to calculate number of nest within ft or equivalent for high density nesting areas such as 5-6/2ct.

John W. observed much steel junk offshore N side. Turtles are not utilizing best nesting grounds of island - why not? In some respects they are using (5-6) - some of the worst nesting ground.

More Noddies on the island apparent this time of the year, - sooty are thinning out - ^{most} can fly.

Seal - yellow tag 786 $\frac{1}{2}$ Adult size (in molt), flipper torn (from tag).

Several turtles seen coming up and over reef flat early (1900). How do they know (or predict) with accuracy the stage and direction of the tide?

~~Graph~~ Graph days vs no. of new turtles.

Characteristics of substrate by area or section within each island.

Calendar month with T resting number written in for each day.

Sunday
July 14

0100
marked
location

T46 ^{of postcentral notches} layed area 2 (photos w/EL color), left hind $\frac{1}{2}$ - $\frac{1}{3}$ missing.

marked
location

0130 T5 layed area 4, 2 photos, 1 tgs present C1744 and 787.
T88 up on sand point, 1 pit, came up from S side.
'stripe' in 2nd pit sand point.

0330

T21 apparently gone. no turtles in areas 7-8.
T27 crossing sand point from S side. stripe 1 more
pit. ^{sand point} T88 gone.

0600

low water. stripe 1 more pit sand point - hind
flipper can not dig, only shuffle. T165, 21 and 5
stranded on reef flat off area 3-5. 1 pit in bank
of area 8.

MORNING
NESTER

1015

on the Goldfish side turtle seen returning to water, N side
from end of sand point, ^{apparently} good nest observed
at end, excavated because of leucress to water,

marked
location

afternoon →

93 + (1 broken) transplanted to area 1.
To Tern, then whale-skate when left John W. off
for the night. Tape recording of nest made
at 2000h - No sounds heard.

2215op
marked
location

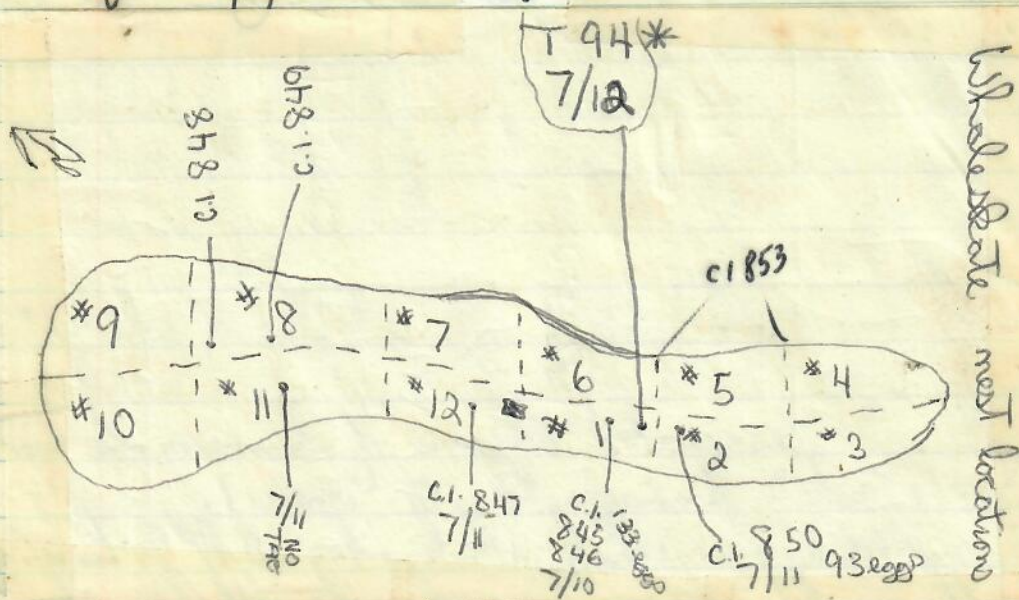
T27 1 pit area 3 and layed. T85 returning from
area 5, no pits apparent, nest that was marked,
T85 on July 13 (p. 107 book 1) must belong to a different
animal (or be a false pit). T up area 5 across to
area 12 in 2nd pit, left, moving inland (rev C1810^F) = T62.
Turtle in chamber area 15.

marked
location

T88 and 49 up on sand point. T110 sprayed on
area 15 turtle, 125 eggs, (39 x 37) (37 $\frac{1}{4}$ x 29 $\frac{1}{2}$),
small notch out of suture of last marginal - postcentral
left, C1848.

Seal A1033 green, very small - might have been
call 'last years pup' if tag were not present.

HAT 'lock' mark noted in area 5, coral chunk removed and 6 hatchlings
found very close to surface.



Pits (W-S) marked 7/10 - 7/11 (from John's Notes)

1. C.I. 845, 846 133 eggs area 1

2. C.I. 847 area 12

3. C.I. 848 area 9

4. C.I. 849 area 8

5. C.I. 850 area 2 93 eggs

6. Unmarked turtle area 11

7/11 - 7/12

1. T 94 area 1

7/15

1. C.I. 853 area 5 94 eggs

cont.

can't be

2215 on Sunday
July 14
marked location
July 15
Monday

Turtle in pitchamber area 12, T is unreadable, no tags, may be a 50 series, ^{re-}sprayed next consecutive T III, CI 844, layed (37 1/2 x 29 1/2) (39 1/2 x 37).

T62 (prev 810) layed, area 12; 3 pits total.

T99, 1 pit before vegetation zone and moving.
T2 up ast area 5.

T88 in fire pit, chased out. T49 1 pit sand point. T53 1 pit right by corner of tent, shakes hind flipper when releasing sand while digging, layed.

0330
marked location

T88 back in fire pit, chased out.
T2 1 pit out of veg. zone area 5, (33 1/2 x 26).

T21 in 1 ~~pit~~ pit area 6.

marked location
marked for check slabs

T49 layed in 2nd pit on sand point.
appears as though T88 layed on sand point.

0600
1200

T21 seen returning over reef, 4 pits, none look good.
Whale-Skate -

5 basketers, 3 offshore - 1 ♀ w/ yellow skin around neck and shoulder areas, brownish dorsal flippers, Goldish-brownish speckled shell. Another ♀ with tumors on left side of neck, large tumor ventral area left flipper flap and other small ones, one of 2 barnacles on 2nd to last left lateral. Two dried, moggot infested octopus found at edge of vegetation zone.

Notes:

Ghost crab holes so plentiful on parts of whale-skate that hatchlings may 'fall in' on their way to the water. Seals like to get behind log, under vegetation, ^{in turtle pits and} sand possibly to stay out of the wind.

Remember -

- * Remove 1 or 2 eggs from several nests for development inspection.

Need BIK's w/ photos of stakes. ^{60-wiring} Small anchor
~~measure Is width *~~ COMPASS

Mark area location on photo.
 CHECKLIST FOR 8/15 - Remove constant 25 + cables; Glass balls; wash boat flush motors; pack as much as possible. Beforehand; How safe is request? How flush motor? Directions for East. Plugs on 60, filter element, bolt seat, label glass ball box, Can by through Carter, leave budget proposal in lab-column in book for EK.

Need list - ^{7/19} T.F., paper towels, ice for chest, sweat shirt, charts, small scale, ~~zoo~~, paint, traps, new stock puppets, soap, tooth brush, shark hooks, apple juice, ~~cran berries~~, take fix ^{mono-film} ~~cruff~~, salt, pepper, ^{choc syrup} ~~WAX~~, T.V. set, chain, Radio NOT IN MARINE USE, ~~fast food~~ - mustard, catchup, ~~shrimp~~ tin for CG trap, rice, soda, candy, sardines, cheese, polony, luncheon meat - ~~beef~~ ^{beef}, steak, canned tomatoes, crab, salmon, eggs, bacon, hot chocolate, Preservative for tent, cable, leaders
 WAX for radios. Scale, gloves, ^{photo of lab, ED, diggs, nests at night.}

Width of EAST, W-S

~~Photo of inside of tent~~

Photo from roof top - Tent

Photos inside, sidehead, ulua, shark mouth
~~nest coverings - measure~~~~hatchling & adult nesting~~

Mark hatching spots - TRIG good - W-S, nest take stakes

Go to shark

Circle EAST - Aerials

photo of felled pole meat

* Island substitutes
 TRIG, W-S, EAST, GIN-L-GINMonday
 July 15
 1200 W-SJuly 14
 1936

2200

July 13
 Mon 010400
 marked
 location

Monday
July 15
1200 W-5

9

Seals $\frac{A}{24}$ $\frac{SA}{17}$ $\frac{P}{13}$

adults include 902

and one w/ fresh healed side scar (pinkish)

Seals w/ pups - 4, 2 are newish (Blk).

Pairs - 4

Estimated as last year's pup - 4

July 14
Slightly
1930

John - whale-skate

5 ♀ boskers - back side.

7 - new pits since lost overnight.

2200

Turtle up area 1 moving.

T205 moving up beach area 5.

Male bosker area 7 sprayed T203
left side only.

T204 ♂ bosker ($37\frac{1}{4} \times 35\frac{1}{4}$),
Marginals on left (8, 9, 10) missing -
piece of right flap out C1 (852).
1 up in area 11, 1 pit.

July 15 T205 returned.

Mon 0100

tully crossing foot area 3.

Turtle up area 2 moving.

Seal Count $\frac{A}{22}$ $\frac{SA}{7}$ $\frac{P}{4}$

Seals/pup - 4

0400
marked
location <

T205 3rd pit total for evening in chamber,
layed, area 5, C1853, left hand,
($37\frac{1}{4} \times 34\frac{3}{4}$) 94 egg

Notes - Sick seal w/ tail scar seen are all, may be doing better.

Some

Crawling turtles lift themselves up off ground during each pull, I can see underneath plastron.

while nesting

- Turtles
1. Crawl over other nest sites;
 2. Reduce the depth (or increase) the amount of substrate over other nests;
 3. help free almost developed hatchlings from nests;
 4. destroy egg, hatchlings, embryos by digging into other nests.

Mouth^{face} scars on seals is undoubtedly from fighting.

Two Shearwaters observed battling like 2 fighting cocks.

EAST

~ 48 p.m.

Island MEASUREMENTS

Length of Island starting from edge of veg W end, front of tent = 1256'

- to W edge of large concrete slab = 362'

- to first cement cube N, NW corner = 409'

- to second " " " " = 452'

Large concrete slab foundation - length (N-S) = 64'6"

width (E-W) = 20'8"

Widest section of East - 245'

July 15
Tue
2200

July 16
00
marked location
marked location
marked location

marked location

↑
0230

060
marked location

marked location

0800

July 15
Tues.
2200

Tunreadable (Blk) coming up area 13.
T80 basking SEP (left hind 1/2 gone, tip of R front missing).
T32 area 7 in pit right next to two of previous nests.
T17-2 going into area 7. T42 1 pit area 5.

July 16 Wed
0015

marked location

T42 layed area 5 (coral chunk and gravel pit), (prev 726).

marked location

T85 layed area 5 left hand, left hind 1/2 missing and unusual piece out of R front

marked location

T17-2 layed area 5, 103 egg (prev 809).

T32 in 3rd pit area 7 - broken glass bottle area.

marked location

T2 up area 6. T80 still basking SEP.
T97 almost definite lay, sand point, (34 x 24 3/4) (prev 802), both hind flippers tattered on edges.

↑

0230

T-unreadable coming up sand point

0600
marked location

T65 area 6 layed, hind left 1/2 gone, flop on left front hanging loose.

T32 gone - 13 pits total.

T56 2 pits and leaving.

T2 2-3 pits leaving, prev C1721 reclamped and C1720 removed.

marked location

- pit in area 5 looks good but unable to determine animal responsible, could possibly be T21, (see yesterday)

1800

Seal Count

A	SA	P
14	6	19

Seal pup - 6

Blk, moerew - 5

Pairs - 1

Last year - 0 (A 757 1/2 A; 921 almost)

Notes - Get down at ground level with turtles to see what they see.

Eggs seem to be extruded (laid) fast during these subsequent nestings. *

possible Reasons for unsuccessful nesting

General area emerged
specific site within area

1. Portions of limbs missing
2. Poor site selection/loamy substrate
3. Incoordination/paralysis
4. Unknown

order

(B)

(A)

(D)

(C)

9
PI

A
HI

15T

00A

000
July 16
Tuesday
1800 Ch

SEP-T5, 20(?) NEP-T70, 391 and 1 offshore.
SEP-T80 NEP-T70 and 5 offshore.

2230 T56 1 pit area 5. T32 1 pit area 5.
marked location Turtle laying in area 5, left hand, prev 717,
T98, 80 eggs 1 ± 5 .

marked location Tunreadable 1 pit area 12. T2 1 pit area 5.
T73 up beach area 5 goldish.
T32 layed area 5, 108 eggs, shallow
therefor transferred to area 1 midway between
2 pits of 2 other transfers.

0000 July 17
Wednesday
marked location T56 up at end of sand point.
T100 in pit sand point

Tunread. area 12 2 or 3 pits.

marked location T2 layed area 5.

0200 Turtle in chamber area 17. T100 in chamber
sand point. T44 is area 12 turtle.

T73 in area 6. ~~7~~

marked location T56 layed in front of tent right next
to a previous nest.

0530 Hard rain at ~ 0300, no turtles
marked location up at 0530, good pit, identity unknown
area 17, 3 pits total.

possible lay with T100 on the sand point.
1830 SEP- prev c1834 = T80 photo showing right
front flipper partially missing, hind left $\frac{1}{2}$ gone.

2145 T41 area 13, no pits yet.

T44 area 12, no pits yet. T63 area 8
in 2nd pit.

July 18
0000

T73 up in area 12 over to area 5.

As of this date - 192 gal gasoline
32 ~~gals~~ ^{pints} oil

1973 total = 435 gal 73 pints

Two nests where hatchlings were observed excavated on 7/18/74

EX Area 3 - 1 egg no development
7 egg pink sign of development,
1 of these ~ half developed dead.

EX Area 5 - 9 live scattered buried deep,
1 ~ half developed dead.

Shearwaters out at night or during late morning hours in considerable numbers.

Channels 16 and 20 additional in portable units.

A = 10

B = 16

C = 20

Thursday
July 18th
0000

0200

0345
marked location

0445
marked location

0600

July 2nd
Friday

Pilot Marvin M. Davis

Seal Total = 2/15 X

F, F, W
Johnson
messengers
Channel 17

Thursday
July 18th
0000

T48 up area 12, and return. Turtle unrecodable on the beach area 14.
Can't see T44. T63 area 8 starting in pit.

0200 T73 in area 5 moving. T63 area 8 still digging.

0345 ^{marked location} T73 in chamber area 5. T63 layed area 8.
T48 (prev C1739) area 11 1 pit.

0445 ^{marked location} T73 layed area 5 (prev 760) C1720.

0600 T73 stake location just SW of T21^{1/30}.

Secured tent, Hauled out whales for project break.

July 26
Friday

Depart FAA Terminal approx 0915 -
Refueled at Parisi - John W and myself aboard.
Aerial survey ~ 1230, several photos -

Pilot Marvin M. DAVIS
Sed Total = 215 X

	Turtles	Seals	ASA sat wrong - 100 Darts
Disappearing	0	50	
L. GIN	0	7	
GIN	0	6	
GIN Sand Spit	0	13	
East	1 in water	27	
Round Mullet	0	13	
Whale-Skate	0	7	
Trip Shark	0	50 at 3 ^{1/2} mark from South	
TERN	0	11	
	0	25	
	0	6	

Noodie band 923 13346 found dead-dying near tent.

Sat
July 27

From all appearances, East and whole-shake
received considerable rain during past week.

1415

Not fishing at 1700 - caught 2 Kawakawa - 1 small Ulua (throw back)
Nothing in stomach.

1515

1615

Egg shells found in area 1 behind tent - no developed contents
(Crabs ate them?), not full complement. also dried, hollow
hatchlings on ground - possibility of being lost years?

*

Sat 1330
July 27

TRIG Island - sand spit gone.

127 baskin on N beach - painted number in excellent conditions
Seals A SA P
7 4 1

1415 Turtles - 8 apparent, 2 look good (marked)
Whale Skate -

Seals A SA P
Toq 920 35 30 17
Seal w/pup - 2 pair - 3 last year - 2
baskers - 2♂ 2♀ 2 offshore
Pits - 20 (6 good?)

Small turtle w/ front left flipper bite captured
photos - bandaged - (17 1/2 x 14) (16 5/8 x 13 3/8)
C1419.

1515 Round Is. Seals A SA P
3 1 9
Seal w/pup - 3, Brand new - 1

MULLET Is. Seals A SA P
3 2 3

1615 EAST ISLAND
Very, very few Tern left
Seals A SA P
10 5 15
Seal w/pup - 5 4 blockish last year's pup? - 2

Generally, very few ^{new} pits observed around island.
what were thought to be "good" pits included the following -

- * 1 - area 6; 1 - area 4; 1 - area 5, 1 - area 10
2 - area 16; 1 possible area 1.

Notes -
flock of rook frigates noted in 9-11.



Tide stage during aerial surveys important.

Seal tag A757

if correct tag
should be 798

Saturday
July 27
22

July 28
00
03?
060

070

~ 1400

2200

July 29
0003

0230

marked
location

saturday
July 27

Made tape recording - no sounds heard.
2200 turtle on beach, area 12. Looks like T49 going up bank of sand point.

sunday
July 28

0030 Nothing.

0330 4 hatchlings found - 2 w/ no head w/ G.C. areas 15 and 6.

0600 area 14 found dead hatchling, decapitated next to ghost crab hole.

0700 female, yellowish skin, no T observable, seem motionless on reef (low tide) S side sand point.

or 1400-1500 Trolling of South West Reef - caught 7 blue - 6 silver from school, 1 bluish single (photos) -
Measurements - ① 30½ ② 35 ③ 29¼ ④ 37
⑤ 31½ ⑥ 24¼ ⑦ 25¾ (bluish) all w/ ovaries development except 6. All w/ stomach only partially filled w/ digesting fish parts.

2200 turtle on beach area 12. Turtle on sand point.
T27 at water edge area 1.

Monday
July 29

00030 area 13 T but no F in pit. T85 area 5 moving.
T88 (prev 804) behind tent throwing sand at canvas pit, return.

Trocks into area 5 across out area 12 no pits.
Smaller turtle in pit behind round log, no T apparent, no tag.

T49 in chamber sand point. T88 offshore N sand point.

0230 T88 in pit area 16.

marked location ← area 13 layed (prev C1843) T110 C1854½ R

marked
 location
 July 29
 0530
 marked
 location

marked
 location
 marked
 location
 0530
 1230

1800h Disconnected temperature probe area 12 T13 6/4
 84 egg, dug down removed 1 egg - live embryo
 w/ yolk sac ~ 1 1/4" diameter - scarapose of
 embryo approx 1 3/4" long - 54 days since
 laying - rough estimate at least 5 till hatching,
 5 till emergence?

Caught 2 Ulua 1 Kawa Kawa

1 ~ 37" - nothing in Guts
 1 ~ 25" - trigger fish parts

1300

July Monday
29
0830 cont.
marked
location

T112 sprayed behind round log area 11 possible
Log
cut in laminae - 2nd lateral right. ($36\frac{1}{4} \times 33\frac{1}{2}$)
C1855, no copulation scars apparent.

T92 area 5 leavin - 1 pit.

T101(?) on reef off S sand point.

marked
location

T49 in pit sand point laged C1856 $\frac{1}{2}$ R.

marked
location

T88 (likely T98 sprayed incorrectly) laged area 1b.

0530

nothing.

1230

Little Gin	A	SA	P
Seals	3	3	2

1 SA tag 775; 1 adult w/ new blk pup mother w/ scar
split on left side of snout.

T33 and ♂ seen several times on surface
offshore - ♂ attempting to mount?

1300

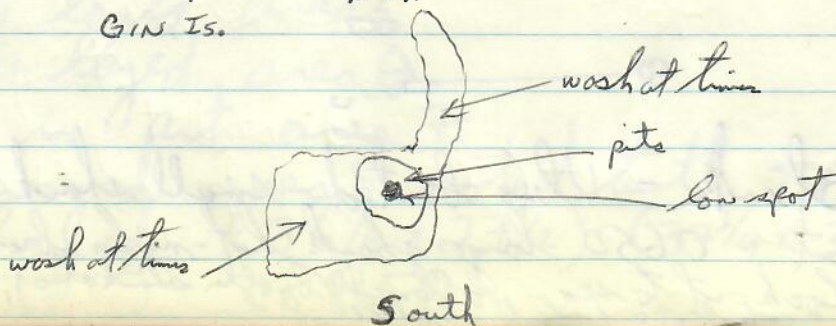
Gin	Seals -	A	SA	P
		5	5	0
	Sand Spit -	5	5	

1 SA possibly last year's pup

Blue face boobies present - 18 chicks
 $\frac{1}{2}$ grown, NE corner of island (high).

5-8 pits look newer.

GIN IS.



Interested to calculate distance
in square (or cubic) feet dug up per
nestling.

% laying in different areas, "percent of
utilization".

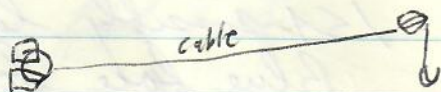
Monday
July 29
2500
marked
location

partial
depth
marked
location
marked
location

July 30
Tuesday
0100

marked
location

Best set up →



Shank - Ulua baited - small shark on at ~ 0630,
at ~ 0650 large shark hit - nylon abraded - buoy &
blow out to sea followed (by other sharks also), retreat, bit
hook, beat and shark struck off.

0330
marked
location
marked
location

marked
location
0600

2 NESTS PARTIALLY DESTROYED BY OTHER TURTLES - THIS PAGES.

Monday

July 29
2200

* T27 covering, area 3 (prev C1776).

3.8cm CL

marked location

T42 (sprayed 192) area 5 start egg chamber beginning

partial depth

* T65 area 5 start egg chamber (dug into)

marked location

nest of T826/14 11 eggs (broken) 1/2 left hind

marked location

missing, layed (prev C1813)

* T42, 105 eggs layed - (this spot dug into)

T70 7/6-23 egg found broken in slight blood develop in some - others nothing) - one hatchling found during egg count.
T17-2 (prev C1809) turn around could make bank area 7.

July 30
Tuesday
0100

area 8 turtle 2nd pit - note in lost marginal R, small tumor R front behind flap.

T42 (192) covering split in end of R front prev C1726
C1857 1/2 R - 4 hatchlings found in area.

marked location

T85 wandering and in pit center of Is - area 5.

Goldfish T109 (prev C1841) 117 egg layed, 2 large double-triple - 1 broken and removed, photos 1-2-3 EL.

T56 in 2nd pit area 6.

T92 in pit area 5, tumor left eye.
(36 x 2 6 3/4)

0330

marked location

T85 layed area 5

marked location

T56 layed area 6

T2 in pit area 7

marked location

Sprayed area 8 note turtle T113
layed (36 1/4 x 27 1/2) (37 3/4 x 35)

0600

T92 return also T2 NO 247
C1858

Caught 22" ulua between Tern and East - fish parts in stomachs

Tues
July 30
0223

July 31
Wednesday

0230

marked
location

marked
location

0315

0415

054
marked
location

1300-

Caught 4 Ulua - 21" 17½" 18" 26½"
stomachs partially filled with trigger fish parts.
Schools of large Ulua W side of Little Gin and
between Gin and L. Gin.

Thursday
July 30
02230 T101 leaving area 8, no pits.

Turtle on beach area 15 (T).

" " " area 17 and up for 1 pit.

July 31

Wednesday 02000

T98 and 73 area 5 - 2 pits each. T2 1 pit area 3.

area 17 turtle 2nd pit and return.

area 15 T turtle still on beach.

Turtle on beach area 14.

T100 in body pit area 8. T17-2 1 pit area 5.

T73 4th pit area 5. T98 apparently gone.

0230 T101 1 pit moving area 14.

marked location T73 (Goldfish side) (prev C1760) layed area 5
cut ground wire.

marked location

Possible hatchlings in area 8.

T17-2 (prev C1809) layed area 5.

T2 4th pit area 3.

T100 sand point moving.

0315 No T apparent in pit on sand point.

0415 T17-2 moving inland near her nest.

T2 on 5th pit area 3.

0545 T114 nested, sprayed on sand point prev C1788 -
marked location Avocado H - has notch?

1300-1700 To Gin and Little Gin

T108 basking on Little Gin, right foot central damaged.

TO DISAPPEARING -

Excellent radio communications, anchored off N side
swamashore - long sand spit to E avash - 1 photo -

Seals

A	SA	P
34	15	1
← A686		

Notes - Consider hatchlings entering water from onshore vs offshore wind side.

Hatchling fall (get lost?) in other pits, bird holes, ^{UNSVIC.} chambers, etc., can't get out and die from heat the next day.
Photos needed of me in areas.

wednesday
July 3
2008

2330

August
TH

020
marked
location

0330
marked
location

marked
location
marked
location
063

3 Olua - 1 ^{bluish} - 27 1/4" (Round worms and bulbous parasite in stomach) Small trigger fish
silver 1 - 37" - fish parts
1 - ~ 18" - nothing

0630
marked
location

wednesday
July 31st

27

2000 EX Nest excavation area 4 - 1 partial develop;
6 live buried deep; 9 no development apparent.
EX area 8 - 45 live (6 of these deep);
7 partial development; 5 no development.

T98 area 5 in 3rd pit. Turtle on beach area 5 (T2).
2 hatchling seen rapidly moving out of area 2.

2330

T98 4th pit area 5. T2 in pit area 5.

August 1
THURS

T103 motionless at water's edge area 15.

T103 on beach sand point.

0200

T100 2 or 3 pits sand point.

marked
location

T98 likely lay from area 5 across to A12.
T2 in 2nd pit.

0330

marked
location

T115 sprayed on sand point layed,
(36 1/4 x 35 1/2) (34 1/4 x 28 1/2), CI 859,
2 double oblong eggs, 109 eggs,
right handed.

T100 in another pit sand point.

marked
location

T2 apparent lay area 5.

marked
location

T63 area 8 of 3rd pit, apparent lay.

0630

T105 area 16 2nd pit, right hint of
1/2 bitten off recently, photos.

0630

marked
location

T116 sprayed in area 17, layed,
CI 860 (39 3/4 x 38) (38 x 28 1/2),
4 photos, possibly old copulation scars.

TO TERN, RETURN VIA LA PEROUSE 3 UIVA
caught.

Line set; seal w/ pup swam around one of
the baited hooks. mother observed holding fish in
mouth and pulled - chased off - lucky didn't get hooked.

Notes - Releasing just down beach slope may not be adequate for "imprints"; if such a process exists.

"Shot gun" covering phase hard on tags, possibly moves on those although $\frac{1}{2}$ way down flipper.

T70^{nest} dug up area 9' x 15'.

1300-1500 Caught two fish - 1 Vlua blue 23" 1 papio 14"
 fish parts trigger fish ↓ nothing
 Caught shark ^{GRAY} 51" long - fish parts in stomach - 4-6 develop. young.

8/2 1930 EX Excavated unstaked (~~on~~ K6/1) nest area 7 -

36 live - 6 deep
 10 partial develop
 7 no development

EX Excavated staked area 11 (K6/1)

21 live - 10 deep
 5 partial develop
 2 no develop

Population scars may be difficult to see.

Thursday
 2230
 August

Friday
 August
 1020
 marked location
 0330

marked location

0445

0510
 marked location

1400

1930

HAT

2300

marked location

sat
 August

020

Thursday

2230

August 1

T70 2nd pit area 5. Several hatchlings seen in or coming from areas 5, 12, and 13.

Friday

August 2

10200

marked location

T83 (prev C1773) moving in area 12.
T70 layed area 6, 4th pit (prev C1756).

0330

T100 1 pit on sand point.
T83 in chamber area 3 inland.
Turtle up down beach area 5.

marked location

0445

0515

marked location

T100 layed area 17 low to bank near former low to bank transplanted nest - Eggs transplanted to area 1.

T83 in another pit area 12.
T83 layed 101 eggs area 12

1400

newly found T47 and no T (possibly male) noted off SW school reef. also ~25" turtle observed.

1930

HAT

Hatchling observed trailing toward water from T32 6/2 rock mark.

2300

marked location

Tape recording made - one or two knocks heard.
T48 (prev C1739) layed area 2, v-notch just to last R and one each in or near adjacent sutures.

sat August 3

Turtle chamber in area 5 - rock-pit mark on v 3rd ~~central~~ central.

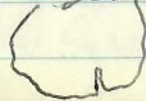
Turtle coming up beach area 5

Turtle leaving area 12.

Turtle up on felled pole area 11.

0200 rock-pit mark turtle 3 pits and returned.

No T apparent, no tag at border of area 4-5 inland - 2 pits moving, left hind



pregnant seal in area 8⁽²⁾
Seal pup, without mother, still black observed alone.

Wind erosion on island heightened by
turtles, birds and ?.

North bank of sand point higher than S bank.

Subadults or seals may inhabit the inter reef area - ^{good} head for hand out

Unusual site for Basher

Caught 2 Ulua 1 blue 1 silver both ~ 24"
^{few fish point} ← ^{empty}

John W. observed Mother seal accept abandoned black pup as
her own and reject pup she was previously with. Drove her
own pup off by biting. Later original pup followed her
down beach and exchange was again made.
abandoned pup did not easily accept second exchange
and fought back when threatened by mother.

Found Ell regeneration area 6, head intact - round worms
present.

Sat
Aug 3
2009
MARKED
LOCATION

031

MARKED
LOCATION

041

MARKED
LOCATION

0545

1400

1400

HAT

EX
1900

7 p.m.

Sat.
Aug 3
0200 cont.
MARKED
LOCATION

T106 prev C1835 layed area 11, E end
of felled pole, 3rd pit, cap scars present.

T unreadable, near T106 area 11 clearing pits.
0315 area 5 turtle in ~ 4th pit.

MARKED
LOCATION

Area 11, turtle in rice chamber, practically
no body pit, prev C1730 and 731 = T44 -
layed, 95 eggs.

0415

MARKED
LOCATION

T107 sprayed on area 5 turtle -
Estimate layed 95 eggs however many present
when first seen (39 x 37 1/2)
(37 1/4 x 29) C1861 right side flap,
right handed.

0545

T107 returning.

1400

female basker near boat mooring area 16, no
T or tag apparent - peeled spot on or near 3rd LAT R.

1400 →

Whale - Skate

	A	SA	P
Seals	24	27	15

1 Adult tag AB; 1 SA (1/2 Adult - A916)

2 seals with pups (1 BK); 6 SA possibly last year pups.

Turtles basking - 6 female, 1 male

two ♀ w/ mam tumors (photos).

appear to be ~ 9 new pits since last
count, 2 may be good.

HAI

live hatchling found on SW shore, 'rock mark' -
marked for subsequent excavation.

Many Ghost crabs out, not a frightened
as Don East. 1 found with 'partially eaten hatchling'.
2 found fighting over partially eaten hatchling.

EX

1900 area 3 unstable nest excavation - 5 live buried deep;
7 partial developed; 3 no development.

Notes - Seems like lots of ^{young} subadults on Island.

SA A1034

Turnstones present in increasing numbers walking down beach. Just a few sootys left. Noddies more abundant setting on eggs. Few dead fuzzy shear water chicks noted, probably from turtle activity. Nesting cycle of shear water??

Tape recording made - 2 distinct 'crack'
or 'knock' sounds heard.

1900
SATUR
August

223

August
Saturday
003
marked
location

0100

MARKED
LOCATION

0300



1900

SATURDAY
August 3
EX

unstaked
area 5 nest excavation - 2 live (1 deep, 1 near surface); 2
partial develop; 5, no development, some of deep
deep turtles badly wrinkled!

2230 hew 725 & 817 1/2 R = T41 in 3rd pit area 16 came
from Area 15.

Looks like T102 (no tags) chambering area 7.
Turtle up on sand point.

August 4
Sunday0030
marked
location

T41 layed, area 16.

Turtle that is up in area 1 - Goldish -
no tag, no T apparent, tip of left front
flippers missing.

Turtle in area 5 chambering.

T102 in 2nd pit area 7, V-notch suture of
postcentral and lost Marginal left.

0100

marked
location

area 5 turtle layed, no tag no T,
sprayed T118; tip of left front
partially missing (36 1/4 x 33 1/2) (34 3/4 x 27 1/2)
C1862 - No copulation scars or marks
apparent.

T102 area 7 returned no lay.

2 turtles on sand point - one w/ left front
tip gone - other unobservable.

0300

all turtles gone.



To Tern and Return - caught 2-18" barracuda (stomach empty)
and 2-2 1/2" Ulua (Trigger fish parts).

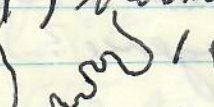
Notes:

Sunder
Aug 4
2200Aug 5
Mehdow
0015
0030030
MARKED
LOCATION
04
MARKED
LOCATIONSept
SA 775 and 1034

Caught - 8' 6" Tiger shark - wrapped tail in
chain - $\frac{1}{2}$ eaten small (4') shark on hook -
nothing in stomach. Tiger stomach got turned
inside out when tying him in - all that remained
was parts of slipper lobster and 1 gooney bird feather.
Caught - 490" Mura, eggs, nothing in stomach.

0600
1900
2230Tues
Aug 6 000215
MARKED
LOCATION

Sunday
Aug 4
22000

Basket area 7, Right post central broken ($41 \times 41\frac{1}{2}$)
($39\frac{1}{2} \times 33\frac{3}{4}$) blockish shell, right flap missing,
left hind }  1 photo.

avg 5
Monday
0015
0030

Turtle area 5 3rd pit, left hind $\frac{1}{2}$ missing.
Hatchlings noted coming out of area 4-5 inland
(towards moon?) Two observed. Vegetation patches
are like forests, - pits, slopes are like mountains -
head, neck, flippers stretch upward (for belly view?),
several rest stops - appear to have the ability to
climb - no effort apparent to go around obstacles,
but rather right over the top, - very fast after
entering water, - even at intertidal zone animals
still traveled along beach (East) towards moon?.

Hatchling found area 15 with head eaten.

0300
MARKED
LOCATION <

area (~~11~~) prev C1834, 769 = **T80** loyed,
tip of right front missing.

0430
MARKED
LOCATION <

NOT, no tag laying (area 1 by tent sprayed
T119 ($35\frac{3}{4} \times 28\frac{1}{2}$) ($37\frac{3}{4} \times 35$)
C1863, tip of left front missing, - this
is some animal that was up last night in area 1
than on sand point.

0600 all returned, no new ones.

1900 **T102**? up down area 1.

2230 - **T89**(?) 2nd pit area 15.

Turtle up area 16

probably
same animal?

Tues
Aug 6 0030

Turtle up by cement slab area 14

T86 in pit area 9

0215
MARKED
LOCATION <

T86 loyed (prev C1778) area 9

Notes - what is effect of late nesters
when they crawl over site that is
near to emergence?

Tuesday
Aug 6
004
130

* Incubation - development - emergence time
dependent on temperature (constant?),
depth of clutch, substrate conditions
for that particular site.

4/600 Fished around Gign and L. Gign
Caught 7 silver Ulua -

22"

21 1/2"

22 1/2"

21"

19"

15 1/2"

21"

nothing in stomachs -
no eggs present

223

Caught ^{GRAY} 51" shark - pulled floats out on reef flat -
stomach contained fish bones, ulua bait and cow-
or puffer fish jaws.

233
marked
location

marked
location
marked
location

Aug 7
Wednes

010
↓ marked
location

marked
location

Tuesday HAT
 Aug 6
 0430
 1300

Possible hatch in area 12.
 nothing.
 seals

Some evening
 1A w/ pup seen. Same day Bare Is.
 sand present
 $\frac{A}{5}$ $\frac{SA}{2}$ $\frac{P}{2}$

A	SA	P
8	11	13

SA Togs A1045, A754; 1B/K early weaned pup w/ fat pup for mother's

EX

Nest excavations in area 7 (no stake)
 6 live deep; 2 partial develop; 3 no development; 3 dead caught in wire at emergence.

EX

② 47 live (17 deep and scattered)
 6 partial develop; 3 no develop.

HAT

STAKED NEST T54 6/8 area 4
 indent, underlying movement observed.

2230

T46 up area 1 to area 17 in 3rd pit.
 area 7 turtle up beach, tumor above right hind flipper.

T111 area 6 in chamber.

T57 in chamber area 5.

T89 in pit area 15.

C1839 leaving sand point, = T22 (not resprayed)

2330
 marked location

Layed area 5 (prev. C1745, 840 1/2 R)
 = T57 however rot confirmed at time therefore sprayed 840.

marked location

C1762 layed 48 eggs area 6 = T74.

marked location

No tag layed area 5 sprayed T120
 C1865 1/2 R (38 1/4 x 36) (36 1/2 x 28 1/2).

Aug 7
 Wednesday

0100
 marked location

Sand point turtle layed C1830 = T104.

marked location

T89 to area 17 than out on sand point.
 T46 layed 109 + (5?) eggs area 17, left half missing.

notes-

Tape recording made 2300 8/6/79 -
 numerous croaking and hooting sounds heard.

6-8 hatchlings seen coming out of area 12 -
 seems to be more ghost crabs this area 8/11.

* HAT T5 6/7 ^{area 5} seen to have shifted sand
 at possible emergence site on 8/6.

HAT T54 probable ^{emergence} of animals on 8/6 ^{area 4} evening.

HAT T69 6/11 ^{area 2} fock mark of emergence
 seen on 8/6-8/7 during morning.

Animals excavated and held in dark shade
 till evening not very lively at release.

Seals tags (SA) A1091; A1045; A9756

Fat pup chased from mother seen to go to other
 adult ♀ and think it is her mother.

Seals and turtles have existed (evolved?) together
 and do not appear to be frightened of one another.

Hatchlings do not always emerge straight upward.

wed
 Aug
 marked
 location

marked
 location

↑
 0300

1900
 E

2100

HA

wed.
Aug 7
marked location

C1844 = T1111 loyed - 113 eggs area 6
left hind



marked location

area 6 tumor turtle loyed 58 eggs (+1 ^{pea} size)
blood spots w/ mucous, 2 barnacles on
2nd Lat R and 1 on first Lat R. sprayed
T121, C1864, lost marginal R

left hind flipper -

↑
0300

Forgot to take measurements!

1900
EX

^{over 7}
T32 6/2 Excavation - Live ^{deep} 6; hatched but
dead 1; partial devel 9; no development 7.

T107 and no mark T apparent up area 5.

Caught 1 ~ 18" barracuda returning from
Trench - nothing in stomach.

2100

Hatch in area 12 T ^{or up marked}
Unreadable and T17 ^(?) up sand point.

T89 up area 15.

HAT

T74 6/13 ^{area 12} first sprayed 8/6 opposite side of stake -
possibly not this animal (?).

T5 up area 7.

T62 (prev C1812^F) tumor R dorsal shoulder in pit
area 6-7.

Unreadable area 1. T90 and no mark apparent
up bank - sand point.

Notes - weight-length Coast Guard Fish -

silver

35" - 31.75 lbs

32" - 19.5 lbs

seal SA #754 observed dreaming.

Two sub-Adults basking on N side of La Perouse - photo.

T32 excavation 8" deep

Area excavated -

T120 8/6 15 1/2 x 5 1/2

T57 8/6 12 x 6 1/2

T111 8/4 16 1/2 x 6

T121 8/8 11 x 5 1/2

T74 8/6 13 x 6 1/2

log near T80 8/8(10) 19 x 7 1/2 (T68?)

T17-2? ~~T69~~ 8/8 14 1/2 x 5 1/2

Depth-area of chamber?

No. of false, unsuccessful
clearings and chamber excavations (many
partial)?

TWO
MARKED LOC

4 Ulva Caught Tern to East: 20") fish parts: trigger fish

23") blue trigger fish

25") 8" weke

22 1/2" silver empty

2 Ulva caught La Perouse 33") silver empty

29 1/2") silver empty

17' Tiger Shark caught by CG Tern - 25-30 pups,
Stomach - slipper lobster, tip of small turtle flipper, portion lumens of
large turtle, (bird - Ulva head)

avg 9 FR
2015
marked
location

2030

wed
Aug 7
23

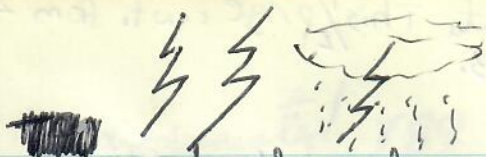
avg 8
Thurs
0800

Mornin

Sun

EX

wed
Aug 7



2320 T32-2 at water's edge, area 4.

No further checks this night due to lightning, thunder and heavy constant rain.

Aug 8
Thursday
0800

Heavy overcast and constant rain continues.

Morning

Surveyed 8/8/74: T54 ^{area 4} ^{previously noted} emergence observed.

EX

Nest excavation in area 5, no marked - 3 live deep; partial develop 7; no develop 1; 20" deep to bottom.

TWO MARKED LOCATIONS

Two apparent lays during night - one in area 6 (T62 ^{probable} or 5), one in area 15 ^{NO} ~~marked~~ T89. (could be T17-2)

Turtles netted on East - C1420,421 (18³/₄ x 16¹/₈) (17³/₄ x 14¹/₄)
C1422,423 (17³/₈ x 15¹/₂) (17¹/₈ x 15¹/₄)
T74 ^{area 12} ¹/₁₃ photos taken of nose of hatchlings sticking out.

2030

T32-2 up by tent fire pit (prev C1796).

T89 up area 15.

T165 area 7. Unreadable front R ^{subsequently ID=T84} 1/2 gone area 7.

T5 inland area 7.

T107 sand point many barnacles.

Aug 9 Friday

0015

marked location

T90 sand point

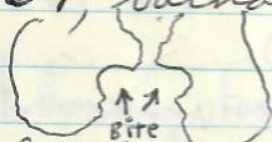
T89 laid (prev C1784) area 17 C1866 1/2 R, Goldish side, U notch suture L Post Cent and last marginal.

T32-2 leaving area 4. T165 in water off area 5. T107 and 90 chambering on sand point. Turtle coming up sand point.

42
00154
August 9
Friday

MARKED
LOCATION

(C1836) ^{prev} layed sand point, 92 eggs
+ 14 on trail from lost unsuccessful
pit (total 106) T107, barnacles, photo,
hind flippers



0200
MARKED
LOCATION

T90 (prev 793) layed sandpoint,
photo.

0400 →

0600

nothing.

Fr
Aug 9
Morning
Survey
1110P

NOTES

Emergence from nests located on sand point will
be made difficult by ① Uniform consistency of substrate
particles thus not offering as noticeable of a 'pock';
② More intensive crawling of turtles across area
therefore obliterating any clues of emergence; ③ Substrate
more readily moved (than hard packed substrate of
other areas) therefore causing easier obliteration.

041

Seen on
EAST 7

Early layed nests should be sampled or completely
excavated to check on condition before departing 8/15/74.

^{all} ^{in population}
If 1 turtles are on a 10-15 day cycle, all should
nest within that continuous period. Alteration from this
pattern could be caused by ① Sampling early in the season
before all turtles have arrived; ② Sampling late in the season
after some of the animals have already departed [optimum sample
time should be at the peak of season] ③ Some turtles result in failure
④ longer than 10-15 day cycle ⑤ Relatively few subsequent re-nestings
⑥ Multiple island nesting ⑦ Eggs dropped in water.

213

Sat.
Aug 10
101

Friday
Aug 9
Morning
Sunrise
2:11:00
HAT

area excavated 789 8/9 area 17 - 10 1/2 x 6.
Unmarked emergence site in area 6 had live hatchling
under shell (trapped) - sank rapidly when placed in water.
Vegetation has grown over some of the older nest
sites - this will make emergence sites harder to
locate. Tape recording made - Brockson stake
gave no response - some noises on tape.

Caught ^{GRAY} 55" shark - 2-21" pups inside - nothing in
stomach. ^{1w/long clasper, 1w/shorts}

0415	Whale - Skate	A	SA	P
	Seals	24	25	16

Seal w/pup - 1; last year's pup (?) 5; pairs 4;
adult tags A 788 (fat); Sub A tags A 916 A 914 A 915
(1/2 adult); A 967 A 1032 A 926.

Seen on
East 7/10/79

Basking turtles - 5 ♀, 1 w/ small tumor under right eye; 1 w/
U-matches in post centrals like T46 (photo); 1
C1849 V-match in suture of right post central and
lost marginal ^(photo) peeling shell, blackish.

Pits - 7 (3 look good).

Returned to East (caught 3 Ulua Round reefs -
1-22", 1-23 1/2", 24 1/2" - all blue, w/eggs and bigger fish in stomach.
2130 HAT T44 area 12 6/4 looks like emergence.

6 live close-to-surface turtles taken
out of unmarked emergence site area 6.
sat. Aug 10 Hatchling seen, out of area 5. (beginning)
00100 turtle layed area 9 (top of veg zone ~~end~~)
of island, sprayed T122, C1867
heal shell injury on right side

this
season
single
fatality

Notes:

Seal tag A754

8/10/74
0900-1000

	length	weight	stomach	eggs
silver	34"	29 1/2 lbs	Ø	X
	31"	22	Ø	
Blue	26"	11	fresh whole trigger-	X
Blue	25"	9	trigger parts	X
	29"	16 1/2	trigger parts	X
silver	33"	26	Ø ^{round worms} _{intestine}	X
	36"	33 1/2	Ø	X
	34"	27 1/2	Ø	X
	32"	24 1/2	trigger parts, cephalopod parts	X
	40"	50	trigger and cephalopod parts	X

Caught 1 - Barracuda - 28 1/4" empty
 1 - Silver Ulua - 36" empty
 returning from Tern via Round Mullet Reefs

Reefs that have little obvious live coral and are "smooth" are seen to have many mollusk type organisms cemented or protruding from them.

* "parts" indicates partially digested.

Sat
Aug 10
10:00
ce0400
0600
HA2100
2200HA
MARKED
LOCATIONMARKED
LOCATION

2330

Sun 0800
Aug 11
marked
location

HA

Sat
Aug 10
0100
cont.

Curved 37 x 29 (at injury) straight (35 1/2 x 22 3/4)
3 photos FL

0400
0600
HAT

nothing.

Unmarked emergence site observed
Makai area 9-10.

2100 T88 digging pit area 1.

2200 T88 moved to sand point.

T44 area 12 6/4 emergence site, hatchling heads apparent.

HAT
MARKED
LOCATION

T33 6/4 ^{area 4} possible emergence site.

T32-a layed area 4 (prev C1777 and 796 1/2 L) photo.

No toy, not goldish side area 9, R hind miss;
similar to T32, V notch in suture of L postcentral
and lost marginal. 3rd pit.

MARKED
LOCATION

T5 layed area 6 (prev C1787; 744 only) photo.

2 turtles in pits area 6.

2330

HAT

T23 area 13 6/2 observed emergence site.

T49 up on sand point. T88 down.

Sun 0200

Aug 11

marked
location

prev C1775 = T84 layed area 6, R front 1/2 missing.

Other turtle w/ T (lost number 5?) chamber area 5.

Hind R missing turtle chamber area 7 (4th?).

HAT

T16 6/9 ^{area 7} emerged.

Notes - when tide is low, emerged hatchling may be presented with increased ghost crab danger due to the greater traveling distance across intertidal zone to reach water.

caught one Banaracuda

0900 Caught 67" tiger shark - 2 parasites (sucker type) sawd - one on ^{pectoral} ~~fin~~ ^{from} at fin, one in throat, stomach contained - 2 digested spiny puffer, sea cucumber (?), bird feather (but no observable parts) Ulua head (ours from yesterday discard?), stomach apparently able to expand enormous amount. 200"

Better bait seems to be head of Ulua rather than whole.

are excavations coral ✓ If tide will drop and be very low in AM hours, turtles seem to emerge early to take advantage of higher water. HAT

Many woodies & shearwaters w/ eggs or young. Chicks too small to move out of way of crawling turtle. South swell coming up. 230 MARKED LOCATION

appears to be a fairly constant area excavated by each animal for the successful nest (not counting viable number of unsuccessful pits). If chamber is excavated over previously layed nest, egg will surely be damaged because of depth obtained. If turtle excavates into area of previously layed nest during cover up or clearing phase, damage to eggs is problematical. Damage would depend on ① depth of previously layed nest ② subsequent addition or removal of earth over eggs by other turtles ③ Depth obtained by turtle during cover up or clearing phase. 0100 TWO MARKED LOC MARKED LOCATION 0445

Sun
Aug 1

0400

0630

1100

1700

200"

HAT

230

MARKED
LOCATION

mond
avg 12

JOE

0100

TWO
MARKED LOC

MARKED
LOCATION

0445

Sunday
Aug 11

0400

0630

1100 →

R hind missing chamber (digging difficult) area 5, 3 more pits,
sprayed T123 (38 1/2" x 35 1/4").
all returned except R.H. missing.
R.H. missing returned area 5.

Morning surveys. T58/10 area 6 - 12' x 7'

T84 8/11 area 6 - 14'6" x 6'

T32 8/10 area 4 12' x 6'

1700

Caught 5 Ulua from SW East reef, all silver
① 30"-Ø, 2. 26"-Ø, 3. 32"-Ø, 4. 34"-Ø, 5. 32"-cephalopod
ports.

200 marked location T112 layed area 9.

T17 up T area 8, (prev 771)

one top flap, Tunread (- 5?) 3rd pit area 8.

T65 area 7 L hind 1/2 - 3/4 missing.

Emergency site observed area 7 no stake

T85 (left hind 1/4 - 1/2 missing) and Tunread
chambering area 5-6.

T56 in pit sand point.

2300

MARKED
LOCATION <

T85 3rd pit area 6.

T16 = (165) (prev C1842) layed area 6.

T65 over to other side of area 7 by

round log, 3rd pit.

Monday
Aug 12

0030

T49 end of sand point. T56 in pit
area 1.

0100

Two
marked locations

T85 (prev C1783) layed area 6.

T56 layed area 1.

T17 1 pit leaving area 5.

MARKED
LOCATION -

T109 goldish layed area 6.

0445

Tunread - 5? leaving area 6.

NO 1/17 - up and
layed 8/13/1
sand point

Notes - Description of substrates. Clarification of coral type substrate terms (by size).

Beach rock - Large slabs of what appear to be cemented pieces of coral sand. Such slabs w/ fractures are present offshore areas 10-11 and seal used them for haul out.

Sand - Fine granular particles made up of small coral pieces (calcium carbonate) small sea shell pieces worn smooth from the action of the sea (again one another). Second type of sand is Silica Sand.

Coral Chunks (large) - Pieces of coral usually 1-2' across, such as imbedded in sand in wave wash area 12. Chunks this size may also be derived from beach rock.

Coral Chunks (medium) - Pieces of coral fist size (< 1' across), often jagged. Apparently heavy surf can deposit this size coral on higher ground, such as on parts of G.N, L.G.N, W.S, East (most every Is.)

Coral Chunks (small) - Pieces of coral less than fist size (< 6" across), small hand "thumb" size (4") found frequently on most areas of all Is.

Shell - Remains of marine mollusks ranging in size from very small (< 0.5") to large (6" across). Usually present in the form of broken pieces ranging from many sizes.

Coral or shell chips - Small chip size pieces of coral or shell, present all some beach areas and under the humus layer on East. Color - light yellow to white.

Humus Soil - (e.g. parts of East Is. A2,3) a mixture of coral sand, chunks, shell, and decay or decomposed organic matter. Vegetation and root systems often present.

Chunks equivalent to Rubble?

BARNACLES

Monda
Avg
marked
location
1100
MORNING
SURVE

140

1800

Notes: Do ^{adult} seals leave Island of pupping at weaning time?

MON
Aug 12
EX

Heavy, concentrated turtle nesting destroys (discourages) shear water activity, thereby reducing future danger to hatchlings.

EX

Heavy, concentrated turtle nesting with (usual number of unsuccessful) pits results in torn-up loose (poorer) (prognosis) nesting grounds.

2200

Morning
8/12

also
areas 1, 2, 3

5-6 head eaten hatchlings found up high on sand point - large species apparently goes inland some distance.

Major portion of sand point consists of loose sand - body pit must be deep to get down to hardest, compact moist sand suitable for chamber excavation. This results in the moving of much greater volumes of substrate compared to other areas with humus.

2330
marked
location

↓ TO TO
Aug 12
0100

Heard on KIVM Kawai radio 8/11/74 - (21390)
advertisement for "Fresh Island Turtle steak" prepared 2-different ways 4.50 Waiwa Marua Restaurant - 8:20 and 8:40 P.M.

0330
marked
location
marked
location

Ghost crabs may be able to seize prey in wave wash - crabs seen with fish (caught alive), also seen some distance out in water - Question that need answering.

HAT
MARKED
location

HAT

marked
location

Monday
Aug 12

EX

T69 area 2 6/11 (108 eggs) - 4 partial develop; 1 no develop;
44 live (35 - ~ 8" deep remained very deep) 3
hatched but dead; nest bottom = 23".

EX

area 5 unstaked - 31 live (6 ~ 6", remained
very deep) ~ 26" nest bottom.

T5 area 5 6/7 head of hatchling poking out
at 2000.

2200

Ghost Crab ^{hole} census -

South Sand point - 98; North SP - 25; A17 - 3;
A16 - 7; A15 - 4; A14 - 1; A12 - \emptyset (but present);
A13 - \emptyset ; A11 - \emptyset ; A10 - 16; A9 - 5;
SEP - 2; A8 - 7; A7 - 5; A6 - 10;
A5 - 11; A4 - 2; A1, 2 and 3 - \emptyset

T65 in chamber area 7. T2 up bank area 6.

T95 in pit area 6. T73 1 pit moving area 5.

T123 R hind missing 1 pit moving in area 1
from sand point.

2330

marked location

T65 laid 80 eggs area —, left
hind half missing - photo.

↓ TO TUES.
Aug 13

T73 4th pit area 5. photo?

0100

T123 5 pits area 1 over to area 17
(37 x 28 1/2). photo

0330

marked location

T109 laid (c1841) sand point.

marked location

T73 laid area 5.

HAT

T56 area 5 6/7 emergence observed.

MARKED location

T95 laid area 6. photo

HAT

T48 area 10 6/8 emergence observed.

marked location

T123 2 pits area 15.

T88 laid area 17 2 pits.

Notes - Both Blue and Silver Ulua school - however apparently much more common w/ silver - silver seems to obtain greater size -

Fish Questions - (1) Feeding behavior of Ulua. (2) Territorial? (3) Predators?

8/12 observed nesting turtle frightened by voice/movements of hauled out seal.

Ghost crabs up high (area 12) waiting for hatchlings?
Hatchling found in chamber being excavated - fell in?

Tracks from nesting turtles are obscured almost daily by seal activity, birds, wind (and sometimes rain).

8/13

Fish Caught SW reef East -

1- Kawa Kawa	26"	10 1/2 lbs	fish parts
Silver Ulua -			
48"		76 1/2 lbs	♂ found worms, eggs
44"		8 lbs	♂
24"		11 lbs	fish parts, eggs
32"		21 1/2 lbs	♂ found worms, eggs
27"		13 1/2 lbs	♂ found worms, eggs
30 1/2"		17 1/2 lbs	♂ ; eggs

Length of time good fit recognizable as such is very short - probably not greater than 1 week, depending on conditions already outlined.

1500
Tues.

Aug 13

seals	A	SA	P
	7	15	20

1-seal w/pup fat; 1-abandoned pup;
untagged SAs - 5' 6"; untagged A - 7' 6"
pups - 4' 8"; 4' 3"; 4' 5";

Togs A775 - 6' 8"; A763 - 6' 2"; A757 - 5' 11"
A771 - 6' 3"; A754 - 5' 6".

Seal regurgitation observed (dried).

area excavations - T65 area 6^{8/12} - 10' 6" x 5' 6"^{11/11};
T88 8/13 area 17 - 10' x 6' 1/2"; T73 8/13 area 5 - 9' 6" x 5' 10";
T95 8/13 A6 - 13 x 6' 3" x 1' 5"; T109 8/13 SP - 14' x 6' 6" x
1' 2";

T48 area 10 diameter "pock" hatch = 11".

Tope recording made - very few noises.

2000 EX T54 area 4^{6/8} - (11 eggs) 16-line (deep); 3-no develop;
7 partial develop; 24 inches deep; Sub-M

EX T5 6/7 area 5 - 46-line (few near surface but blocked
by chunks); 9 partial develop; 2 no develop; 3 hatched
but dead, sub H, 20" deep.

EX T74 area 12^{6/13} - 11 line (deep); 4 partial; 2 no develop;
2 hatched but dead, sub L, 25" deep.

T63 area 9 1 pit. T123 area 5-6 1 pit.

T63 3rd pit area 9. T123 1 pit area 5.

2200
Wednes
Aug 14

0015

0130

T123 3 additional pits area 5, destructive to
vegetation, bird holes, etc. (erosion) - CI 868 1/2 R.

T114 area 16 by bent over flag pole 1 pit.

0415 T114 still in area 16. T123 - same.

0500 marked location T63 R hand layed 110 eggs area 9.

Substrate

- H_{MH} Heavy - coral rubble w/ shell + coarse
 M_{ML} Medium - heavy w/ moderate amount of coral/shell rubble
 L_{ML} Light - mostly heavy - coral sand - few coarse
 S Sand - sand form

Use log, sand, etc. for measuring length of seals.

- Caught small Gray skink - or "48" stomach empty.
 ♂ Male bocker turtle seen on Mullet several times.
 Strongest turtles make it to the surface.

Collect samples of each type, grade of substrate while excavating nests.

Decaying vegetation in nests probably elevates temperature,
 interferes w/ emergence?
 Nest excavations indicate that larger coral chunks
 are more prevalent ^{or near} on the surface.

T49 SP knocked over pipe marking previous T49 on SP.

Wellness
 Aug 14
 1200



EX 1800
 as foll
 T44
 UNKN UN
 T33 6/
 T23 6/
 T16 6/
 T56, 6/7,
 T48, 6/8
 UNKN POSS
 MISS
 T27 6/

2300

Wednesday
Aug 14
1200

W-5

Seals

A
18SA
29P
9

A ♀ sub observed several times on East and W-5, same haul out sites; SA tags 987; 1918, 915; 1 apparently newly weaned pup; pairs-3; last year pup-1. 10 ♂ and 3 ♀ basking turtles.

Pits - 8; good 2.

Count of Ghost Crab Holes - Boat to N-330, N to P to cross from boat landing - 129; to S to P - 315, S back to boat - 124. Crabs out during day with little fear, possibly because of no forage habitation.

Haul captured back, thin subadult turtle - C1426, 427, 428 L flipper, 429 R flipper Curved - $25\frac{1}{2} \times 23\frac{1}{4}$
Straight - $24\frac{1}{4} \times 20$ 70 lbs

EX 1800 → as follows	Sub.	LIVE	Partial	No devel.	Dead-Hatched	Bottom Depth
T44, 6/4, A12	L	2	0	24	1	23"
UNKN UNKN A9	L-M ^{IRON} pieces	41 ^{deep}	1	3	1	19"
T33 6/4 A6 ¹⁰¹ ₂₉₉₅	M-H	0	11	15	0	21"
T23 6/2 A13	L	5	11	8	0	24"
T16, 6/9, A7 ¹⁰⁷ ₂₉₉₅	M-H	9	18	4	0	21"
T56, 6/7, A6	M-H	0	22	17	1	19"
T48, 6/8, A10	L-M	4	0	0	0	19"
UNKN ^{POSS} _{MISS} 6/14 A4 ^{micro}	M	14	0	4	0	23"
T22 6/2 A12 ^{micro}	L-M ^{congregated} _{IRON}	7	2	9	0	25"

2300

T83 area 5 - 1 pit.
T114 area 9
T106 area 11 - 1 pit.

Notes:

8/13 &
18/14

Tracks - trails noted on sand point - possibly from hatchlings.

0900 Tracks noted on S Tern beach by big tower.

Dallas Grady - Medic CG - former turtle fishing - Kauai.

[Total number of seals tagged at FFS by Adult and P^{pub} by year? - possibly present in trip reports? - Get from Palmer those which you do not already have.

* Subsequent observations present on BSW^{seal} cards as reported by other workers may not be useable (or necessarily important). Major concern should be date of tagging, location (pupping Is), and stage of maturity.

Excavation of eggs - Eggs shells that are not torn open (hatched) but are empty w/ small holes may have suffered from insect infestation.

Each data card could contain a summary for a seasons activity eg. nesting intervals, and other pertinent information.

Wed
Aug 14
073
MARKED
Locationmarked
LocationHA
AUG 15
Thurs

0400

0600

0600-0

0820
Sept
Thurs

Wed
Aug 14

ings.

1330
MARKED
Location

T123 leaving area 14.

T83 layed area 5 (for mopping purposes stake located
nest of T39 7/12 and T118 8/4, small injury to
dorsal area of left hind flipper - inflicted from
abrasion with margin of shell.marked
LocationT106 doing a really good job of chambering by
humb log ^{west end} area 11. (Layed)

HAT

Nest emergence noted at temperature probe T13 6/4

AUGUST 15

Thursday

0400

T114 up in area 12.

0600

T114 and T123 digging pits - neither layed
12 + 1 previous (2 premature emerge) out of
T2 (1/2 of body out of sand - motionless) - little
activity when placed at water's edge - nest
may be too shallow, therefore, turtles are

HAT not really ready to come out. Emergence T78 8/13 area 6.

0600-0900

Disassembled campsite to Tern -

Depart for Hono FAA 1330 John W. George.

Photo series of East Low - ASA 25 f5.6,

T118 observed basking area 4.

0820

Sept 19

Thursday

Depart FAA Honolulu with R. Chan
- stop for fuel - Barking Sands -
photo out front windowNotes - Number of nests - Productivity during
1973 season - vs - 1974 season

9/19/74 Aerial Survey

	<u>Turtles</u>	<u>Seals</u>
Disappearing Sand spits	NOT	observed
Photo Little Gin	0	2
Photo Gin	0	13
Sand spits	NOT	observed
Photos East	0	9
Round Mullet	0	6
photo Whale-Skate	0	2
photo Trig	0	35
photo Tern	0	24
Shark	not observed	not observed

Thurs
SeptFrid
Sept
143

1800

Satur
Sept 21

Thursday
Sept 19

Unpacked - readied boat.

Friday
Sept 20
1430

approx. 4-6 pits (older) on Terns beach
Launched boat - to East

Seals

$\frac{A}{4}$

$\frac{SA}{11}$

$\frac{P}{2}$ teeth

includes A754 SA

Pits - 1 3-4 day old area 5

2-3 " " " area 17

2-3 ? sand point

Very few birds - shearwaters chicks present -

Frigates - sand point shorter - very green -

Set up campsite, waterproofed tent

EX

TC1 6/13 sand point

26 partial develops

4 hatched - dead (1 slightly alive)

4 no development

1800

Returned to Tern - observed what

♂

appeared to be ♂ adult booby on Round Is.

Caught white vlua, 17 anal spines,
14 $\frac{3}{4}$ " - 3lbs stomach ♂

Saturday
Sept 21

1400 East

Seals

$\frac{A}{6}$

$\frac{SA}{14}$

$\frac{P}{8}$

SA 1041; adults have good body conformation;

1 pup early weaned, seen last trip.

Sand shifted around Island - particularly SEP,
turnstones, plovers, tattlers (?) present.

Emergence fork apparent in following nests
(exact age unknown): (page 61)

Notes - Turnstones pick at excavated remains
of nests.
Very difficult to excavate nests on sand
pits due to slippage.

Analyze survival - nest mortality
by animal, area, total

1 live healthy hatchling found on Tern near
quarters on Sept 20 evening.
Also 1 found by CG on Sept 21 evening - put in
water 3-4 times and returned up beach.

Decomposition of eggshells contents appears to be fairly rapid.
Insects noted in some remains.

Yearling - juvenile turtles observed in shoals
seem flat, lighter in color.

Sep
SATUR

Sep
Sun
020

0800-1
F