

BOOK I

FFS

1979

Book 1

10-30 JUNE 1979

(208) 395-6409

EXPEDITION 23

BALAZS

EXPEDITION 83
10 JUNE - 30 JUNE 1979

G. H. BALAZS

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COMPOSITION BOOK ~~XXXXXXXXXX~~ page 78

9 3/4 IN. x 7 1/2 IN. (24.8 cm x 19 cm) ~~XXXXXXXXXX~~ page 19

AVAILABLE AS:

| | | | |
|----------------------|----------------|------------------------|---|
| No. 09-9130 (1130) | 60 SHEETS | COLLEGE RULED & MARGIN | Backing Incidence |
| No. 09-9132 (1130-P) | 60 SHEETS | COLLEGE RULED & MARGIN | Dumplings/ROZZON Turtle COUNT (May 79) |
| No. 09-9134 (1143-X) | 100 SHEETS | COLLEGE RULED & MARGIN | LIST OF JUNK/DEBRIS/Flotsam page 47 |
| No. 09-9132 (1130-P) | NUMBERED PAGES | | SOIL SAMPLES page 80 |
| | | | AREA Utilization page 79 |

TAG NOS. USED THIS EXPEDITION: ^{Made in U.S.A.} 3117-3277
Summary of HEAD & TAIL MEASUREMENTS page 86 (but see page 35)

VERNON McMILLAN, Inc., ELIZABETH, N.J. 07208
UNIVERSITY OF HAWAII
Hawaii Institute of Marine Biology
Coconut Island • P. O. Box 1346 • Kaneohe, Hawaii 96744

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ON EAST - 16 JUNE
DEPART EAST - 30 JUNE 1979

July STAR CHART - Page 18
HSB THE ARTIST - Page 73

Demography -

Study of population size, density, distribution and other vital statistics.

- SUMMARY OF DEPTH METER READINGS -

| <u>METER/DATE</u> | <u>READING</u> | <u>LOCATION</u> |
|-------------------|----------------------|-----------------|
| B 6/15/79 | 20' | N. TRIG |
| C 6/16 | 80' NR (reset moved) | W-S |
| C 6/21 | 42' | W-S |
| C 6/23 | 20' | W-S |
| C 6/26 | 20' | W-S |
| D 6/29 | 70' NR (reset moved) | W. TRIG |

B = 20'

C = 42'; 20'; 20'

Need to examine chart for depths behind TRIG & W-S

Established contact on 6/7/79

KH6 - JPS

- Glenn at 499-2825

Has a schedule as follows: Wednesday

8 PM frequency MC18 (7350)

also

GAN11 (MG15 - 20998.5KHz) guard

every evening 7-8 PM

10 JUNE 1979

SUNDAY

~9:30 PM

Depart Kewalo Basin at ~9:30 PM
Easy Rider for FFS and other
 Feehward Islands. People aboard
 include: Leighton Taylor, Skip, Ron,
 Laura, Steve Dallas, Mike Palmgren,
 Jim Parish, Bruce Carlson, Christy
 Maftel, Rick Grigg.

15-25 kt trade winds blowing.

Boat - forward starboard top

11 June

79

Monday

Passed Kawai, and very close to
 Lehua Islet -

12 JUNE

Tuesday 79

Enroute to FFS.

13 June

79

Wednesday

Arrive at shoal area to the
 west of Disappearing Island ~9 AM;
 Wind and current too strong for
 coral sample by Grigg's team.

Moved up to Bakerouse and
 anchored just to the south. Acropora
 colonies are in this area ~15-25'
 deep. Taylor-Parish-Carlson took
 Zodiac to NE side of Bakerouse
 for fish transect.

12 JUN 79 Expedition Objectives:

Tuesday

- 1.) Monitor ^{7th consecutive year} and saturation tagging of nesting ^(census) females on East Island and, as possible, other nesting islets of FFS (W-S, Trig, Tern, Gin, LGins). This includes the recording of tag recoveries to determine reproductive cycles ^{and migrations} [INCOVELS - First USED IN 1977 season];
- 2.) Tag ^{monitor/census and} basking males and make recoveries to determine reproductive cycles and migrations;
- 3.) Tag and recover juvenile turtles for growth and migration studies; Sample stomachs/intestines for food studies;
- 4.) Record depths utilized by reading affixed meters (4) f;
- 5.) Record cloacal temperatures and make basking observations for study with Whittow;
- 6.) Collect sand samples.

13 June 79 ~ noon observed juvenile at surface
 Wednesday respirating - patches of coralline algae
 on posterior carapace. First observation
 was off starboard of anchored Easy
 Rider; second observation off bow. During
 Taylor-Parrish dives, Parrish
 reported seeing turtles - in distance,
 no details available. They also
 saw two seals, one "barked" at
 them - also entered "cave" - small
 air bubbles inside, but did not
 see seal breath air. From vessel
 I noted a seal at surface near
 "Little La Penouse".

During evening I finally made contact
 with FFB.

14 June 79 Noted seal at surface -
 Thursday Strong wind; anchor line broke;
 Griggs people started drilling operation;
 Tom Knight and Robbins came
 out for me in USCG whaler -
 arrived at Tern ~ 11 AM -
 Repacked gear. Whitlow was
 taken to rig this morning.

26 SEP 2002

BRIAN ROBERTS
 1758 KEMMEL WORTH DRIVE
 CLEARWATER, FL

GRANDPARENTS

14 Jun
Thurs

3115

3116

14 June
79
Thursday

At ~3 PM I surveyed inshore waters of
 North seawall - observed 5 juveniles
 total - caught two of them - neither with
 tags - as follows: (worked up in
 quarters); noted bird dropping hitting water in this area -
 fertilization??

3113 RFL

S - $19\frac{1}{4}$ x $15\frac{1}{2}$
48.9 - 39.4 -

3114 LFL

C - $20\frac{3}{4}$ x $18\frac{3}{8}$
52.7 - 46.7 -

PL - not taken

HEAD - " "

TAIL - " "

35/65

Polysiphonia on skinCodium removed from mouth and retained. GB-441

14 JUNE 79
Thursday

TERN juvenile captures continued

7
26 SEP 2002

3115 RFL

S - $18\frac{1}{4}$ x $14\frac{5}{8}$
40.4 - 37.1 -

3116 LFL

C - $19\frac{1}{4}$ x $17\frac{1}{8}$
48.9 - 43.5 -

PL - NT

HEAD - NT

TAIL - NT

$29\frac{1}{2}$ lbs

Polysiphonia on skin; small pieces of
alga removed from mouth & retained.
GB-442

During morning made phone patch to Lin
through NAV 8; during afternoon
made patch to my folks through Daryl;
During evening talked to Ruth through
HAM in Hawaii Kai.

~ 7PM Walked all the way around
- Tern to count fits and make observations;
Whitton reports Frigates picking up and
eating small Sootys. Increased vegetation,
particularly Messerschmiedti, should
decrease this predation - also offer
more shade for young.

14 June 79 Thursday USCG has dismantled "Sears" - cement slab remains; also bulldozer has been buried nearby. - Noted lots of PVC ashore on south beach - east end. Tom Knight and I picked up Causey Whitlow at ~4:15 PM - made landing from south shore; - scared off two seals. at ~11 PM I walked along South Tern Beach - noted several in-out excursions by nesting turtle or turtles.

- * Need - Copy of USCG EIS; who reviewed it? Abandoned junk burial question. Deficiency in negative declaration. Sue FWS to remove junk, improve habitat. Need - Memo to Giezertanner about baskets from Whitlow - Baloy

Report that Generator uses ~10 gal hour, minimum 200 gal fuel per day.

15 June 79 Friday During morning Skip & Christy came to Tern and looked around for about one hour.

- * NEED - McGinnis's ^{reprint} request to officers of AASH (green turtle basking). Pyrotechnics practice off of west end of Tern at noon. USCG man has seal teeth found on other islands.

Antennae ground wire will be present on Tern - like East - also cement slabs.

15 JUN
FRIDA

16 JUN
SATUR

15 JUNE 79
FRIDAY

Arrive Trig with Whitlow at 1245 PM -
Anchored off of South shore. ^{CONTINUOUS sand point} Present; "Whittow Islet" gene
- Noted 5 turtles basking, one of which
was DEPTH METER B (female) -
20 FEET reading - "B" in proper position;
algal growth on plexiglas window face very
cloudy; spit removed this easily.
Reset knob turned very hard - some
corrosion must be occurring. Red B
on one side was peeling off. Hole,
tig wraps, meter case and every
thing else looks good. Radiometer reading
of 42°C
8291.1 Mg - 8A Frequency on SSB radio -
Easy Rider.

Turned two buoys; unable to turn a third;
took radiometer readings, rectaps.
Brigg's team came close to south shore
in Zodiac ^{spots along shore} - "I think it would be alright if we
came ashore?" answered - "it's not up to me".

Departed Trig ~ 4 PM; ER departed
shoals ~ 530 PM; Grigg reports finding
third species of Acropora, presumably
during dive in area off shark.

16 JUNE 79
SATURDAY
launched BW and arrived at
East at 10:30 AM; unloaded
camping gear and set up tent.

16 JUNE 79
SATURDAY

Walked around island - census wildlife -

Weeds that were along south shore are now all dried up -

No signs of heavy rain on East Island, such as took place this morning on Tern. Areas ^(11, 12, 13) 12, 13 & 14 have undergone serious erosion, even since last month. Is it possible that dead coral offshore is deteriorating and not offering as much protection against waves and surfs.

* Perhaps short article/memo on habitat loss is warranted - relate to habitat availability on Tern; Also consider cement slabs.

* Scott letter, resolution send out to various parties.

* Thank you letter to Daly for Biotopes book; also note Newsweek (June 11) article on Oman.

Need to plot high seal count by island for each of my expeditions to JFFS; Also log recoveries by expedition (should show decrease) [get Anal Johnson summary]

Arrived at Whale Skat at ~1:45 - censused wildlife, observed METER C, basking NE shore - Plexiglass clean unlike meter B; © scratches on Plexiglass; meter read 80' - bluish strands presumed to be Man-O-War16 JUNE
SATURDAY

312

312

16 JUNE 79 stuck on RHLimb.

SATURDAY

Turned 3 baskets for cloaca temperatures; returned to Tern Is. ~ 4:30 PM - had "ke.Bobs" barbecue; phone patch to Fin through Dorely - asked her to call Brent about seat on June 30th FWS flight.

Departed Tern at ~ 6:30 PM (after having missed two juveniles feeding along north "iron piling" seawall.

Anchored at Round Island to count seals; Masked booby and chick are only bird present;

Arrived at East ~ 7:30 PM -

Caught an untogged juvenile feeding on East Reef - missed a second one.

As follows:

3125 S-18^{3/4} x 15^{1/4}
47.6 / 30.4

3126 C-19^{3/4} x 18
50.2 / 45.7

PL-15 30.1

HEAD - not taken

TAIL - " "

34 lbs

GB-449

Caulerpa sample removed from mouth and retained, w/ termites from plank in front of Tent.

16-17 June
79
Sat-Sun.

did not take calipers after midnight due to lightning.
Bright lightning frequently occurred during
nighttime hours. Like working in a Grant
Cathedral.
Nearly all of turtle nesting was in areas 5-6-7.

CONSIDER GREAT DIFFICULTY OF COLLECTING THIS
INFORMATION ON HAWAIIAN CHELONIA.

(Harsh environment, one person, isolation, avoid impacts
on several other species,

17 June
79
Sunday

Up about 9:30 AM - walked to SEP-
took measurements along eroded
shore

Pole to edge of steep bank - 30' (my feet)
Foundation block to edge - 9'
Antennae foundation to vegetation edge - 17'

At ~ 11:30 proceeded to TERN, anchored
in North cove, departed ~ 1 PM for
Trig with Causey, Whitton;
anchored off south shore.

Turned basking turtles for
cloaca temperatures and stomach
sampling. Whitton noted that 4
quipses have gone over today (high
level). Collected sample of coral substrate
upon which turtles bask.

Most Black footed Albatrosses on East =

17 June
Sunday

NO. 210

Recover

177

313

313

17 June 79
Sunday

A dead black pup was found on beach (north) of Trig - membrane was still on head - apparently pup suffocated - born last night or the night before. Mother seal was nearby - distraught - laid by two basking turtles for awhile - photos Roll 2.

A "Depth metered" turtle was seen at Trig starting to emerge - but turned around. Unable to read alphabet letter.

Departed Trig ~ 5PM, took seawater temperature ~ 50 yards off North shore; Returned to Tern for a sandwich, gas, and preserve TMRS.

Departed for East ~ 6:30PM -

Upon arrival, caught three juveniles at East Reef with scoop net. As follows:

NO. 210

Recovery

582M

1775 (off) RF

S- $17\frac{3}{4}$
45.1 ✓

x

$14\frac{1}{8}$
35.9 ✓

3133 RFL

C- $18\frac{1}{2}$

44.0 ✓

x

$16\frac{1}{4}$

41.3 ✓

3134 LFL (small healed hole in flap)

PL- $13\frac{3}{4}$

34.9 ✓

TAIL- $3\frac{1}{2}$

8.9 ✓

26 lbs

Lots of yellow color in sarapace

RFLimb

off

healed

Third quarters look thin.

17 June 79
SUNDAY

/ EAST Reef juvenile captures, continued

3135 /

S-17³/₈ x 14
44.1 / 35.6 /

3136 /

C-18 x 16¹/₄
45.7 / 41.3 /PL-13⁵/₈ 34.6 /TAIL-3¹/₂ 8.9 /

25lbs

"Sunburst" color.

Clean carapace & skin - new recruit to
this inshore pasture (from pelagic environment)?17 Jun
Sund

Recover

308

308

6/18

Mond

17 June 79
Sunday

East Reef juvenile -

26 SEP 2002

Recovery
3088 ✓

$$S - 16\frac{3}{8} \times 13\frac{7}{8}$$

41.6 ✓ 39.2 ✓

3089 ✓

$$C - 17 \times 16$$

43.2 ✓ 40.6 ✓

$$PL - 13\frac{1}{2} = 34.3 ✓$$

$$TAIL - 3\frac{1}{4} = 8.3 ✓$$

$$21 + 2 = 23 \text{ lbs}$$

From appearance, it tempting to call this turtle a new recruit to feeding pasture. Mouth sample retained - looks like Caulerpa.
GB-448

10 AM Hard rain - sea growled and groaned just as it started - lasted ~ 15 minutes.

Note - Compare my techniques with Carr, who turns all nesters on their backs and returns to process them in the morning.

6/18
Monday

UP - 9 AM - Buoy Tender anchored by Tern - hot - sunny.

Departed for Tern ~ 10:15 -
Photos of buoy tender "306" Buttonwood at anchor. Someone through over a roll of

18 JUNE 79
MONDAY

toilet paper and new map head - apparently for my "benefit." Later, a lieutenant of vessel asked what I was taking pictures of (Coral on anchor chain), expressing concern that vessel was in trouble.

* Scott Merrill - XO - will send copy of photo.

Collected sample of coral-shell substrate along beach at East for coral species examination. This bag, as well as sample from North Trig, was sent back with Whitton on Buttonwood.

Deformed to 12,000 gal of fuel will now be left at Tern - burns 1400 a week.

Anchored off North cove of Tern because crates, furniture, etc. was being sent out to Buttonwood in launches.

Had interesting talk with Arn Heggers - He asked me what good my research of turtles was to people.

Wanted to know what good this refuge is if people can't get into it to see seals, etc. This seems to be the attitude of nearly every USCG co I have known at Tern. Also XO's (except Jim) and perhaps majority of me. Why isn't environmental education stressed at Academy and "boot camp" - after all, part of CG mission is environmental education.

18 JUNE
MONDAY

18 JUNE 79 MONDAY Discussions ensued about removal of unwanted items, rather than burying them. Arn said this was FWS doing. I pointed out that if bird control had continued through this year, C-130 could have removed all of these items, i.e. Transmitters (that will be thrown in dump and buried), Antennae, Bulldozers, etc. The dump and other buried items will resurface with time and be an "eyesore" and degrader of habitat. An excellent comparison is what happened at East Island. CG walked away in 1952 - note dishes, silverware, wife, bulldozers, bronze machinery, chief's meat chopper, buildings etc. (See various photos in my files).

Arn is not against wildlife - just "overprotection"

This does not reflect well on CG - gives them a poor environmental image.

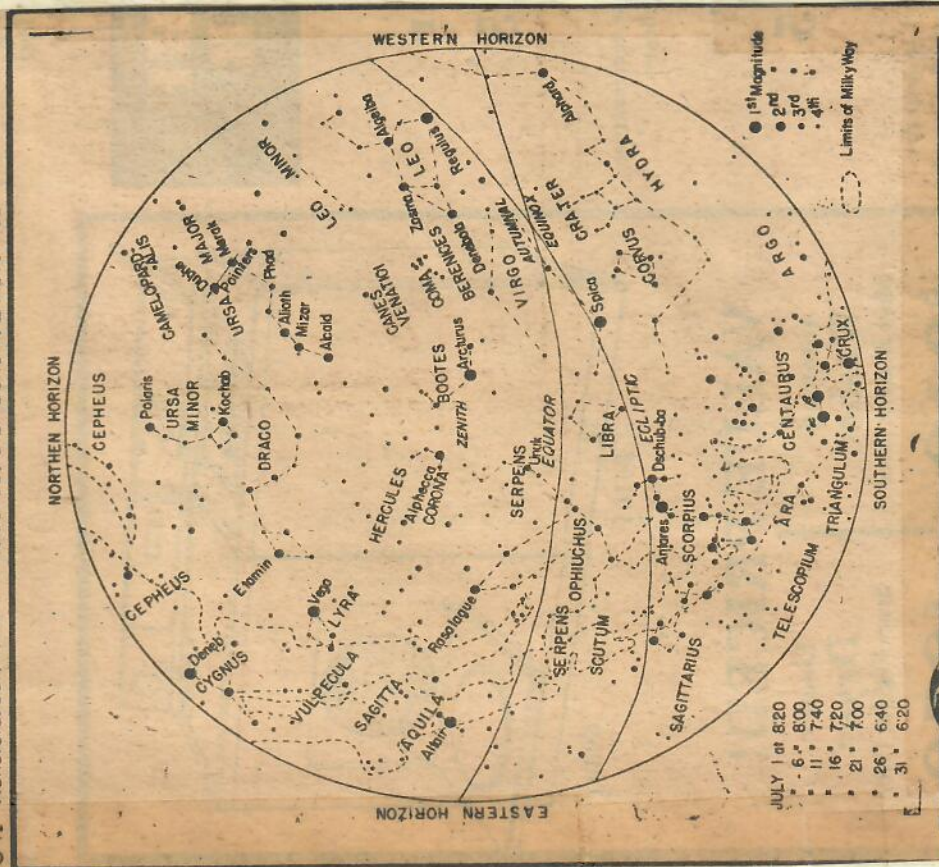
* Discuss this with Sebora, Spollenberger^{M.}, Taylor
See USCG Negative Declaration.

Whitlow boarded Quoyterdy at ~ 1 PM -
Tried calling Lin through Darrell at 4:30 - no answer.
Departed for East at ~ 5:30 - very choppy.

* Need to plant Trifolium seed from Lisianski.

[Narrative continued on page 38]

G-12 Honolulu, July 1, 1979 The Sunday Star-Bulletin & Advertiser



The chart shows the sky from horizon to horizon as seen from the latitude of Hawaii during July in the early evening.

The table of dates and hours indicates when the chart will coincide with the sky. To use the chart, hold it overhead with horizon directions on the diagram corresponding with those of the true horizon.

(Chart by E.H. Bryan Jr.; astronomical information by George W. Bunton, Hawaii Science Center, Bishop Museum.)

Mercury is in a position to be seen in the west after sunset during the first three weeks of July. After that, it will be lost in the sunset glow.

Venus is seen nearer and nearer to the horizon in the dawn sky during early July, finally moving too near the direction of the sun to be seen during the last week of the month.

Mars rises about 2½ hours before dawn in the direction of the constellation Taurus. Its magnitude is +1.5. It will be seen near the crescent moon on the morning of July 20.

Jupiter is low in the west after sunset during the first two weeks of July. After that it is too near the direction of the sun to be seen. Its magnitude is -1.3.

Saturn is high in the western sky in the evening but appears lower as the month advances. By the end of July, it sets only two hours after the sun. It is in the direction of the constellation Leo; magnitude +1.1.

On July 16, the sun will pass exactly overhead at 12:36 p.m. in Honolulu.

Phases of the moon:

First quarter — July 2 and 31.

Full moon — July 9.

Last quarter — July 16.

New moon — July 23.

"Ancient Monuments to the Sun" is the title of the new show at the Bishop Museum Planetarium, beginning Tuesday and running through Sept. 3. Showing concurrently with this will be "Polynesian Skies" on Wednesday and Sunday evenings only.

For show times and other information, call Bishop Museum, 847-3511.

Bask + offshore?

See center sightings - 10-25 May 1979
 A7 Cummins - Mark Ravzon - Clemwell

Prepared By
 Approved By

BASK + OFFSHORE?

SEEN SEA TURTLE SIGHTINGS - 10-25 MAY 1979
 BY Cummings - Mark RAUZEN - Cromwell

Prepared By
 Approved By

| | 1 | 2 | 3 | 4 | 5 | 6 |
|--------------|-----------|-----------|--------|---|---|---|
| | ABOVE 30" | 18" - 30" | To 18" | | | |
| | LARGE | Medium | Small | | | |
| 09 MAY | 0 | | | | | |
| 19 MAY | 6 | | | | | |
| | 8 | 16 | | | | |
| 13 MAY | 19 | | | | | |
| 15 MAY | 4* | | | | | |
| 18 20 MAY | 25 | | | | | |
| | 5 | | | | | |
| | 4 | | | | | |
| | 23 | | | | | |
| | 12 | | | | | |
| | 1 | | | | | |
| | 3 | | | | | |
| | 9 | | | | | |
| | 0 | | | | | |
| | 136 | | | | | |

~~FEAR~~ MINIMUM

ONE WITH DEPTH GAUGE

JUNE 1979 TIDE C

| SUNDAY | MONDAY | TUESDAY | WEDNESDAY |
|--------------|--------------|--------------|--------------|
| 6AM NOON 6PM | 6AM NOON 6PM | 6AM NOON 6PM | 6AM NOON 6PM |

MOON PHASES

| | |
|------------------------|---------------------|
| FIRST QUARTER JUN 2 | FULL MOON JUN 10 |
| LAST QUARTER JUN 16 | NEW MOON JUN 24 |

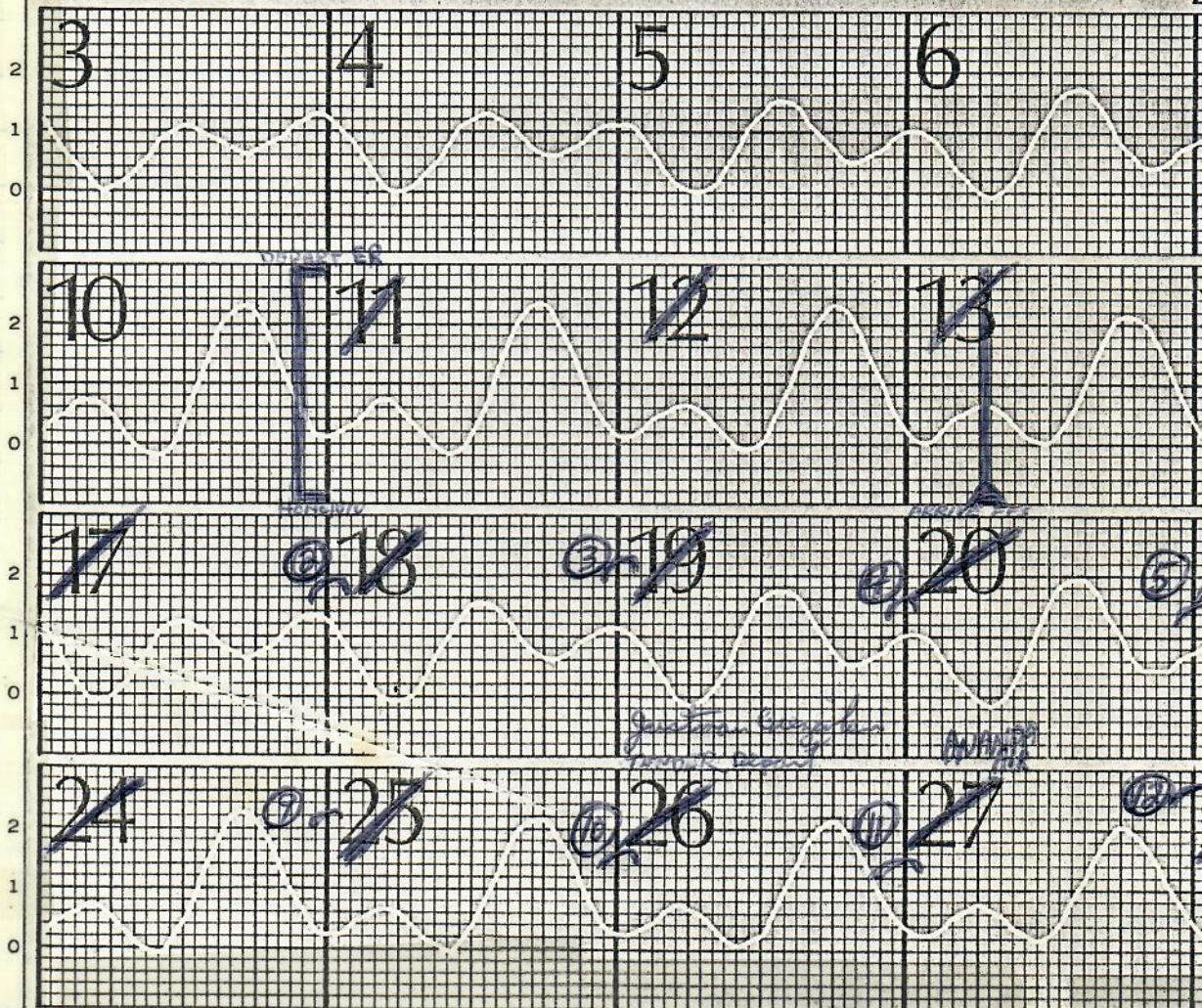
For tide time at following places, add or subtract from Honolulu time.

| PORTS | Hrs. Mins. | PORTS | Hrs. Mins. |
|-----------------------|------------|--------------------------|------------|
| HANALEI BAY, KAUAI | -1 40 | KAUNAKAKAI, MOLOKAI | -0 09 |
| NAWILIWILI BAY, KAUAI | -0 32 | KAHULUI, MAUI | -1 48 |
| PORT ALLEN, KAUAI | -0 32 | KIHEI, MAALAEA BAY, MAUI | -0 14 |
| HALEIWA, OAHU | -1 36 | HILO, HAWAII | -0 59 |
| HANAUMA BAY, OAHU | -0 55 | HONUAPO, HAWAII | -0 24 |
| KANEOHE BAY, OAHU | -1 35 | MAHUKONA, HAWAII | -0 24 |
| LAIE, OAHU | -1 48 | KEALAKEKUA BAY, HAWAII | -0 16 |
| WAIANAЕ, OAHU | +0 16 | | |
| WAIMANALO, OAHU | -1 15 | | |

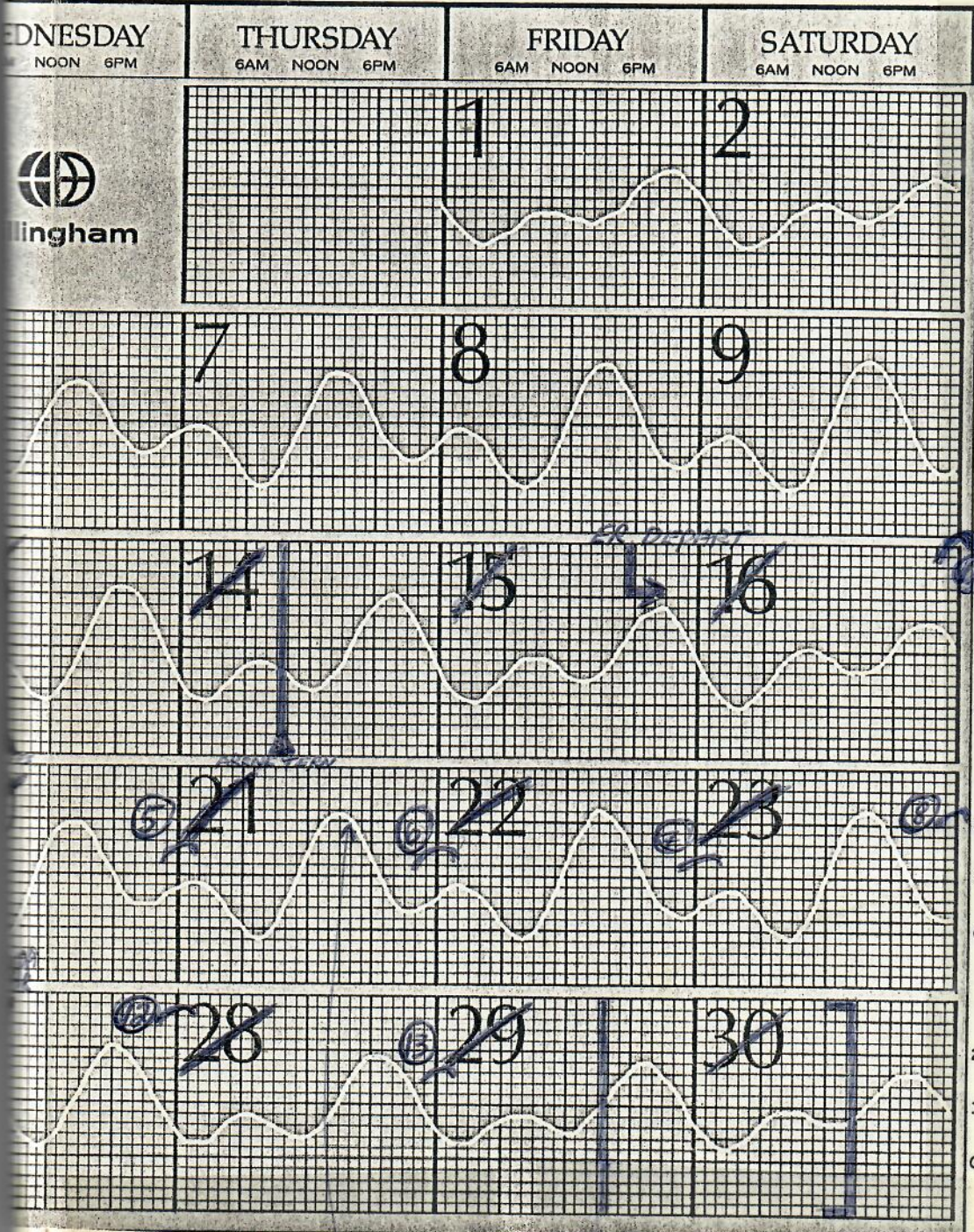


Dillingham

FEET



9 TIDE CHART

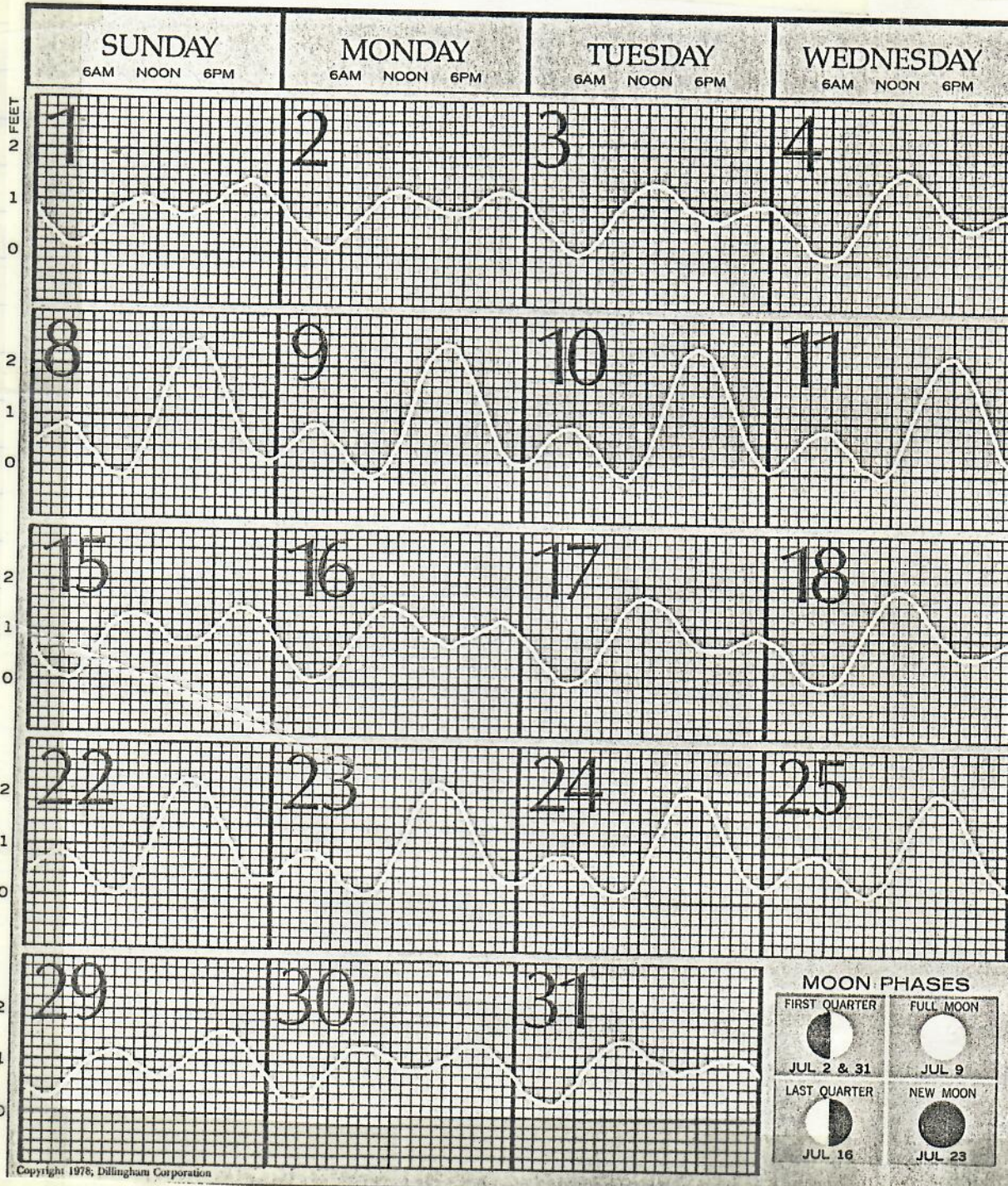


3:56 PM begins summer according to KŪAI - KAWAI

off East Island

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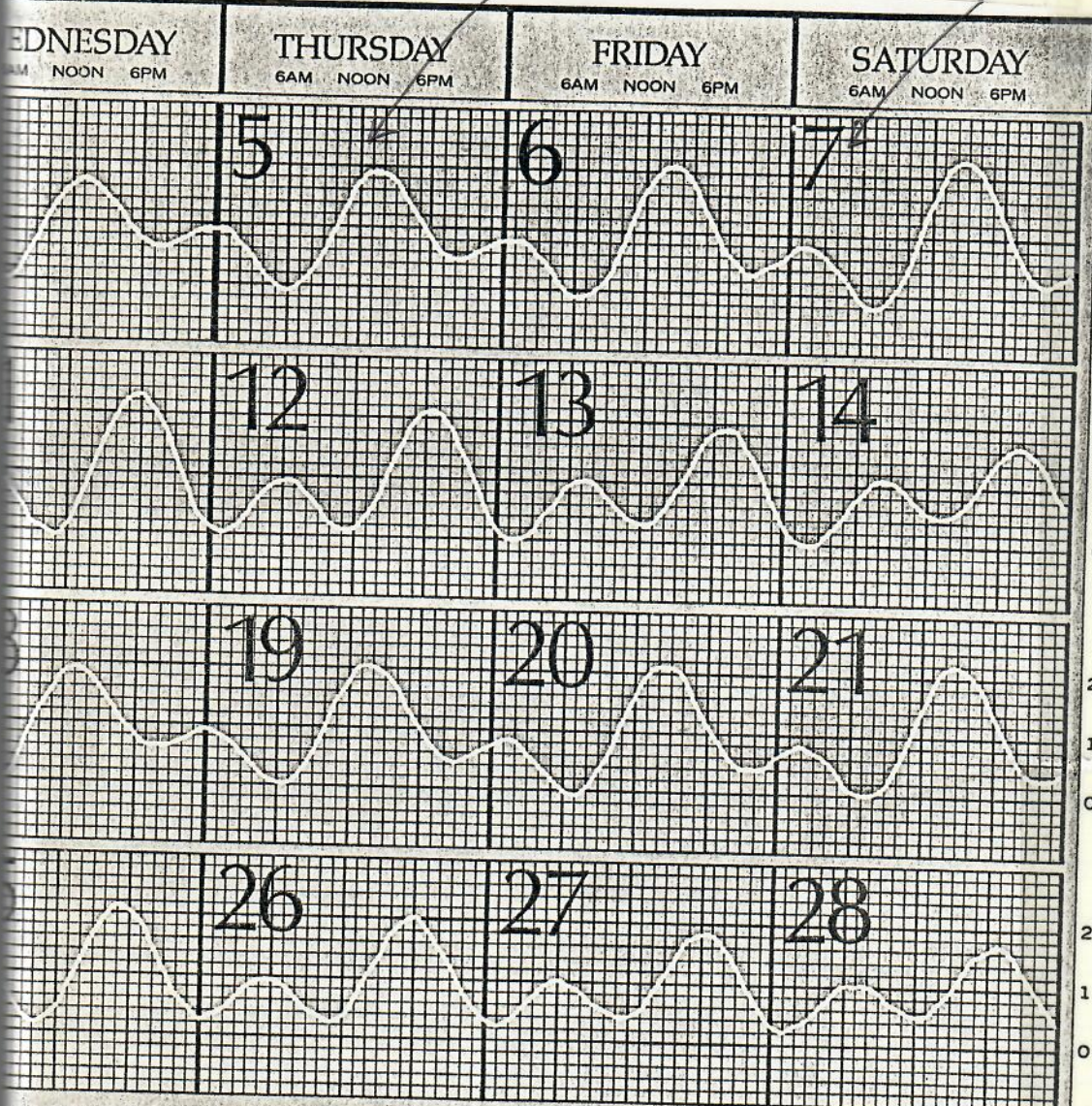
JULY 1979 TIDE C



TIDE CHART

*airplane to FFS
6 USC 29 Depart*

*BUOY TENDER
AT FFS*



MOON PHASES

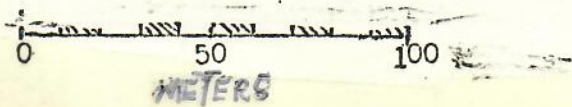
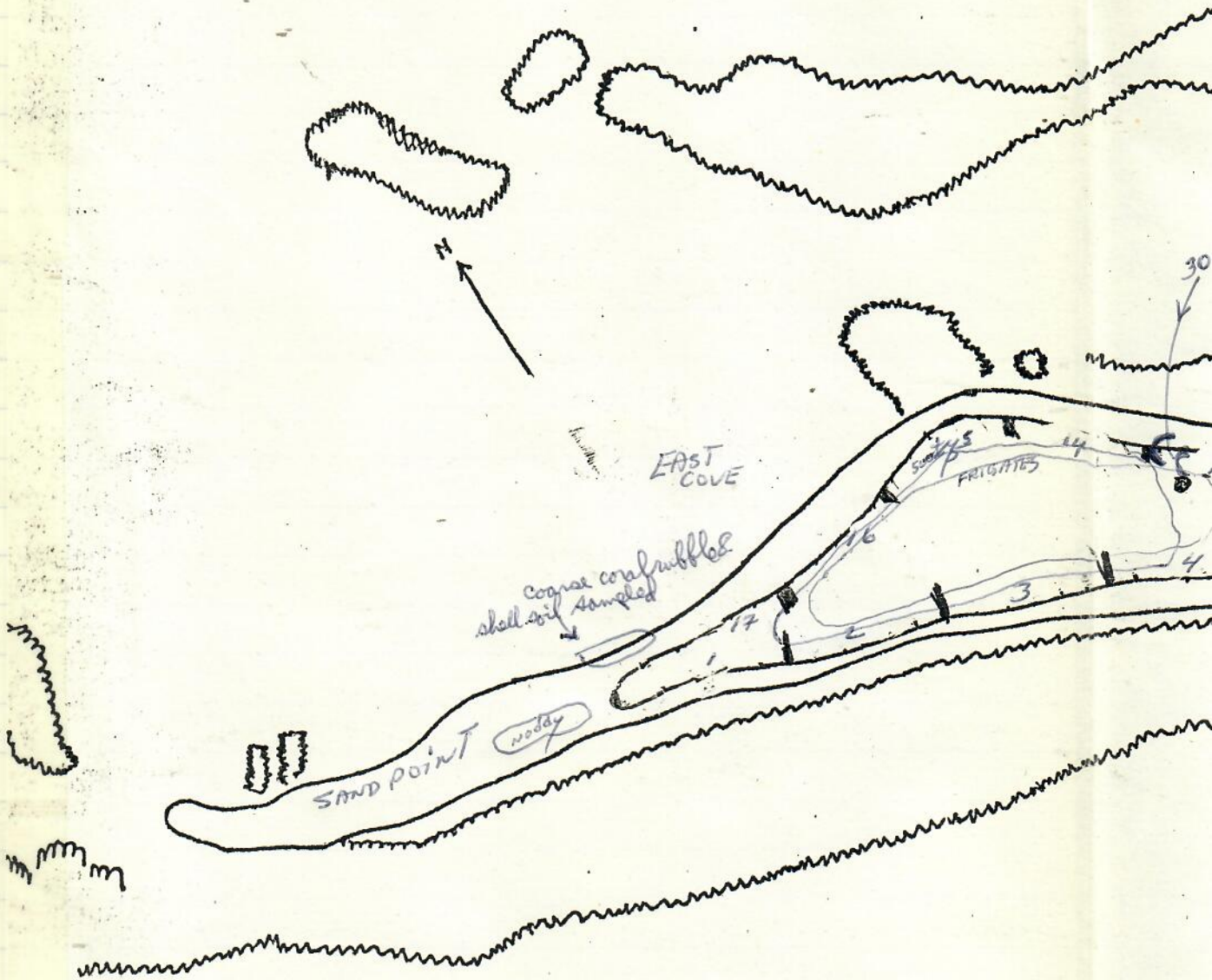
| | |
|------------------------------|--------------------|
| WAXING CRESCENT JUL 31 | FULL MOON JUL 9 |
| WAXING GIBBOS JUL 23 | NEW MOON JUL 23 |

For tide time at following places, add or subtract from Honolulu time.

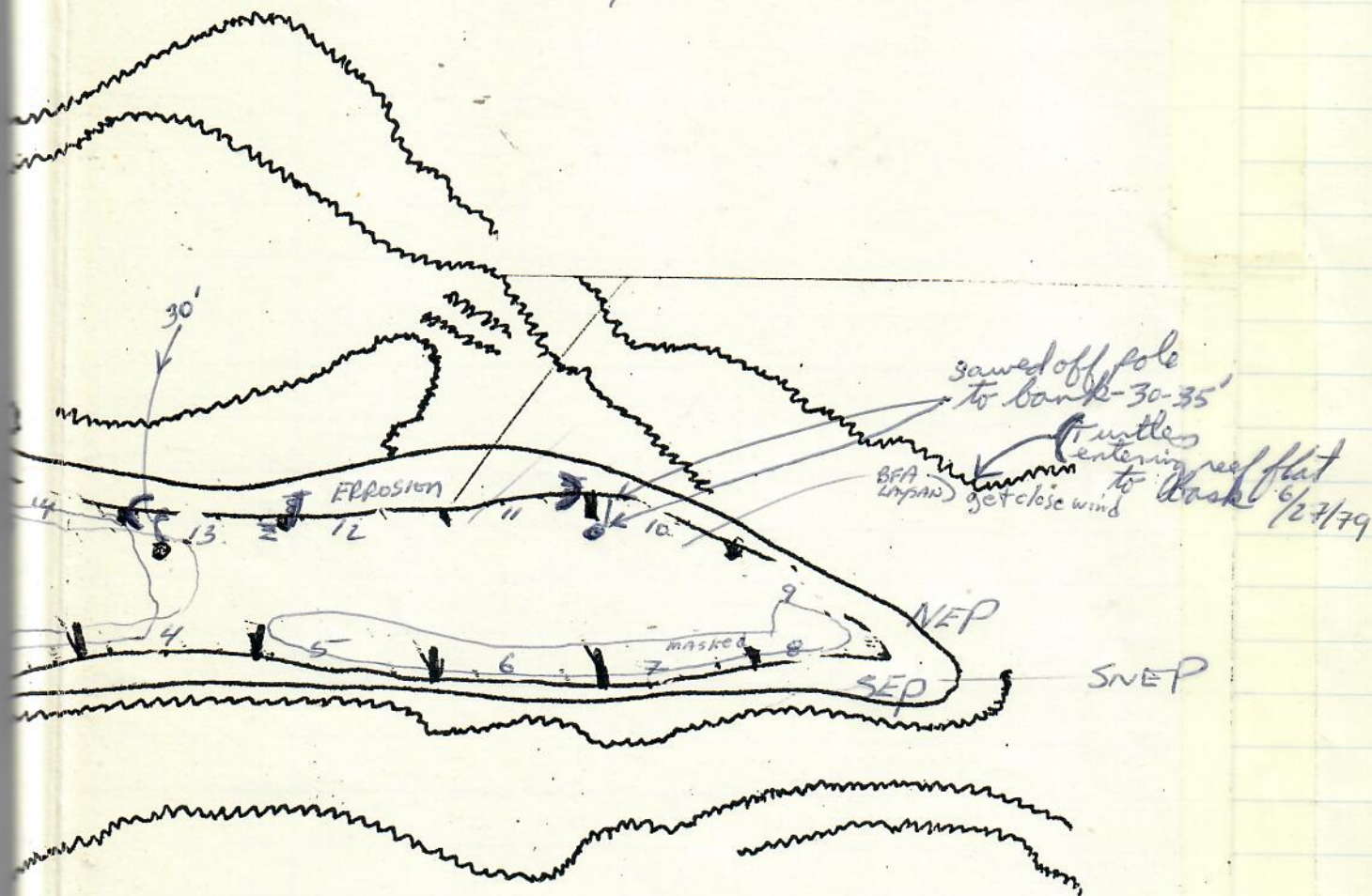
| PORTS | Hrs. | Mins. | PORTS | Hrs. | Mins. |
|-----------------------|------|-------|-----------------------------|------|-------|
| HANAIEI BAY, KAUAI | -1 | 40 | KAUNAKAKAI, MOLOKAI | -0 | 09 |
| NAWILIWILI BAY, KAUAI | -0 | 32 | KAHULUI, MAUI | -1 | 48 |
| PORT ALLEN, KAUAI | -0 | 32 | KIHEI, MAALAEA BAY, MAUI | -0 | 14 |
| HALEIWA, OAHU | -1 | 36 | HILO, HAWAII | -0 | 59 |
| HANAUMA BAY, OAHU | -0 | 55 | HONUAPO, HAWAII | -0 | 24 |
| KANEOHE BAY, OAHU | -1 | 35 | MAHUKONA, HAWAII | -0 | 24 |
| LAIE, OAHU | -1 | 48 | KEALAKEKUA BAY, HAWAII | -0 | 16 |
| WAIANAE, OAHU | +0 | 16 | | | |
| WAIMANALO, OAHU | -1 | 15 | | | |




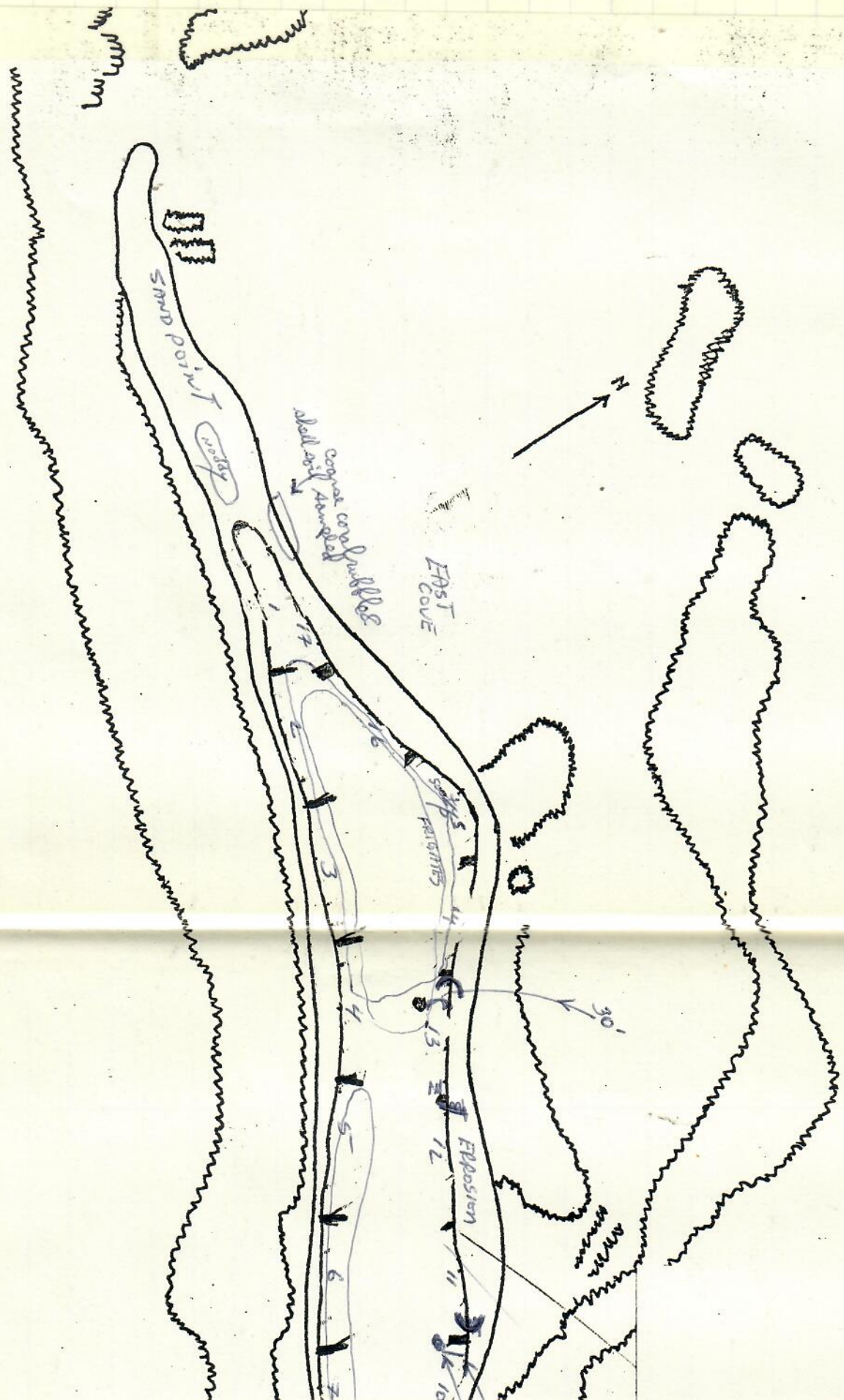
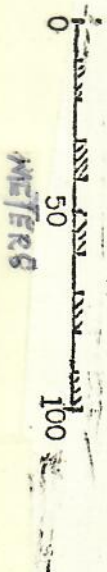
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6/19 - Consider pattern of island use by nesting turtles in relation to structures foundations that were present 1944-1972, and to some extent are still present today.

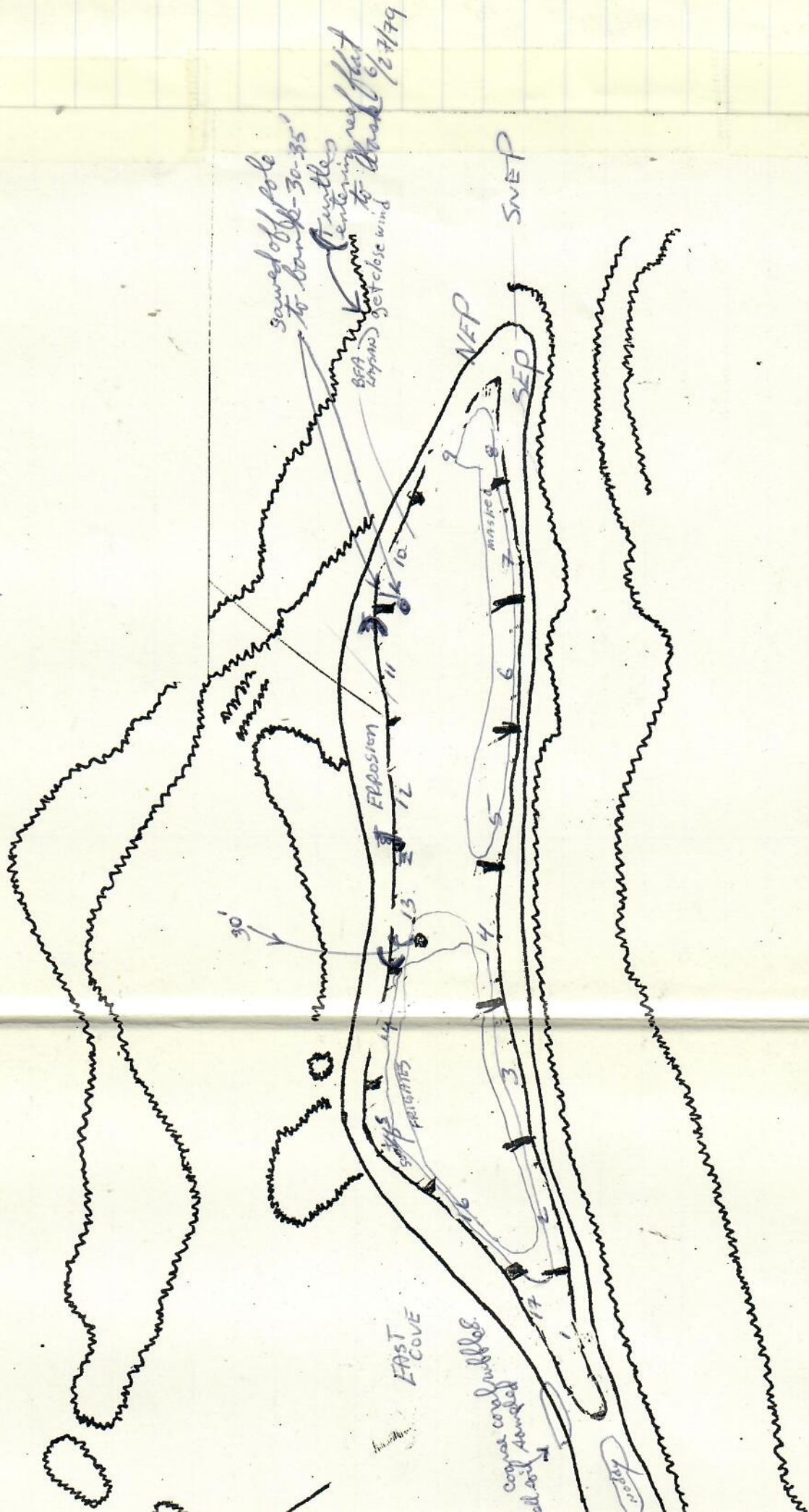


 Vegetation Zone



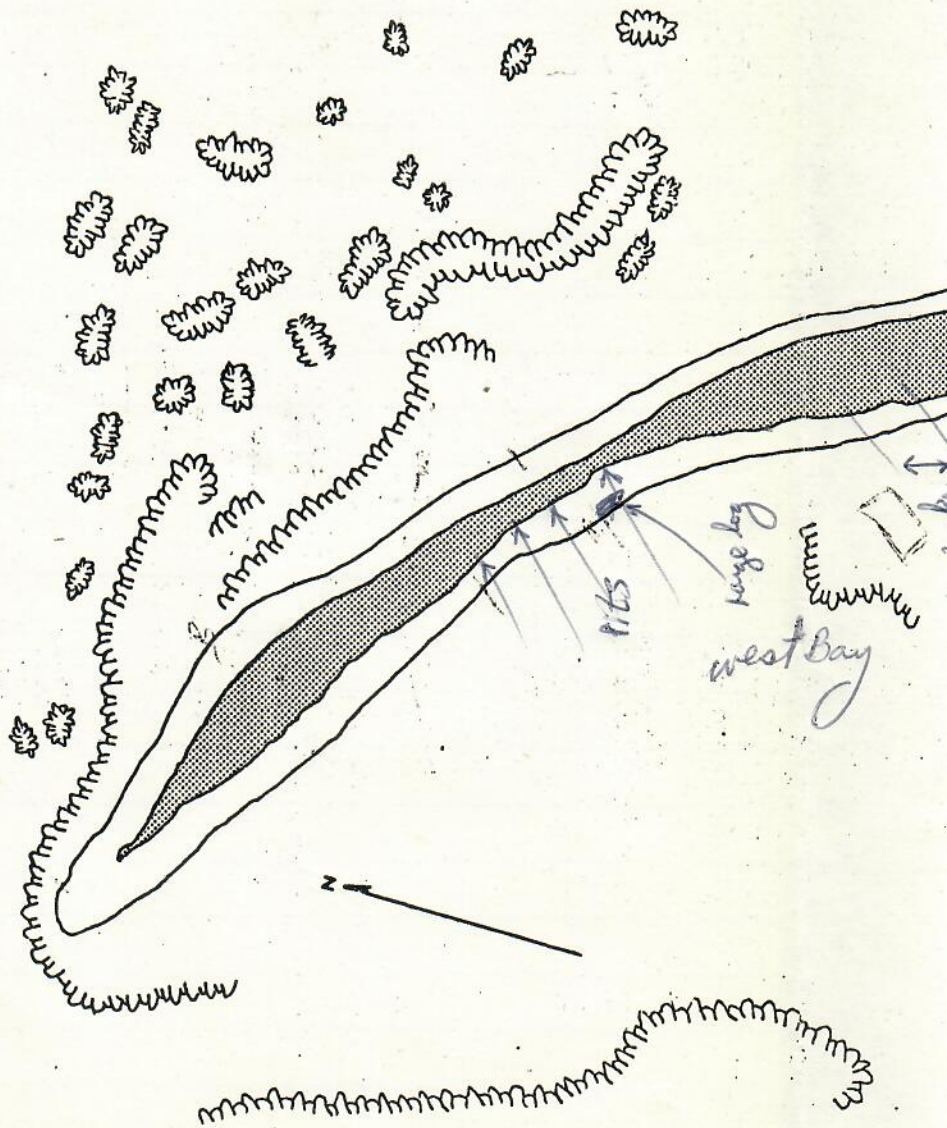
foundat
and t
today.

6/19 - Consider pattern of island use by nesting turtles in relation to structures foundations that were present 1944-1972 and to some extent are still present today.



Vegetation Zone

19



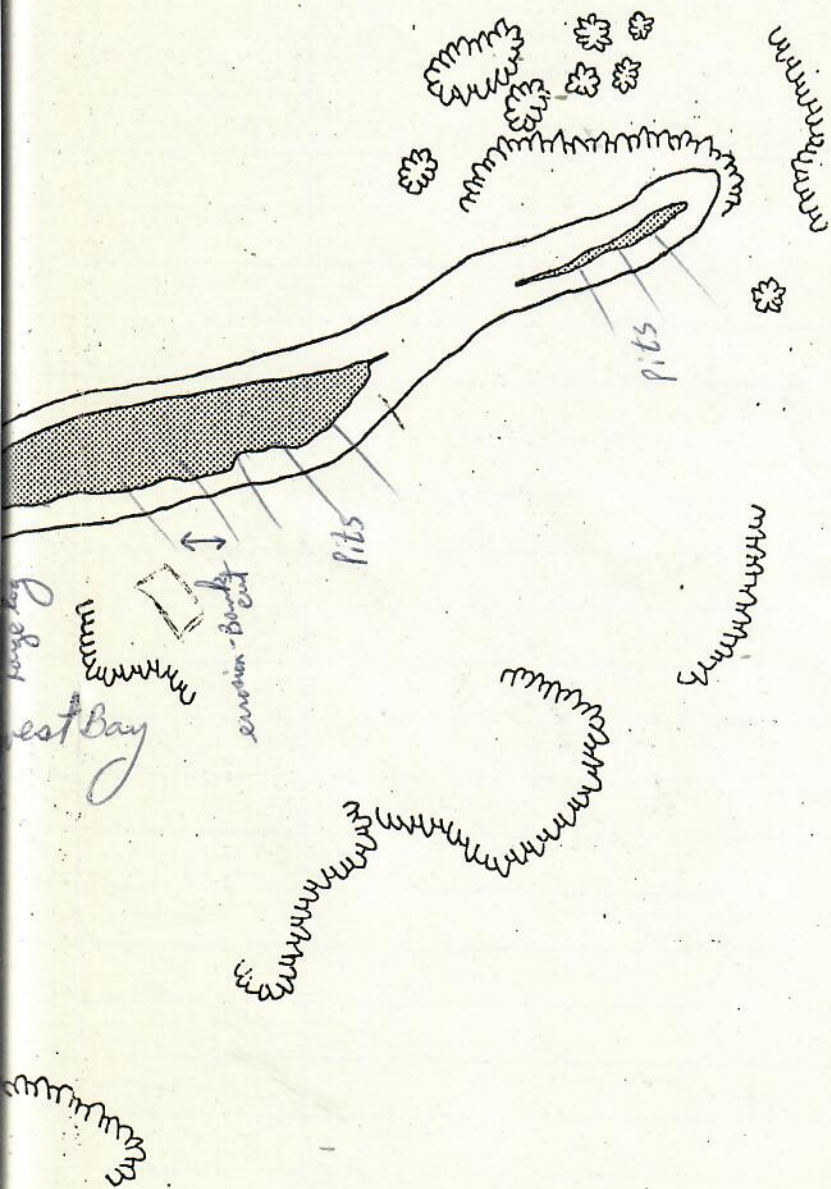


Figure 16. Whale-Skate Island, 10 January 1966. Redrawn from official U. S. Navy photograph.

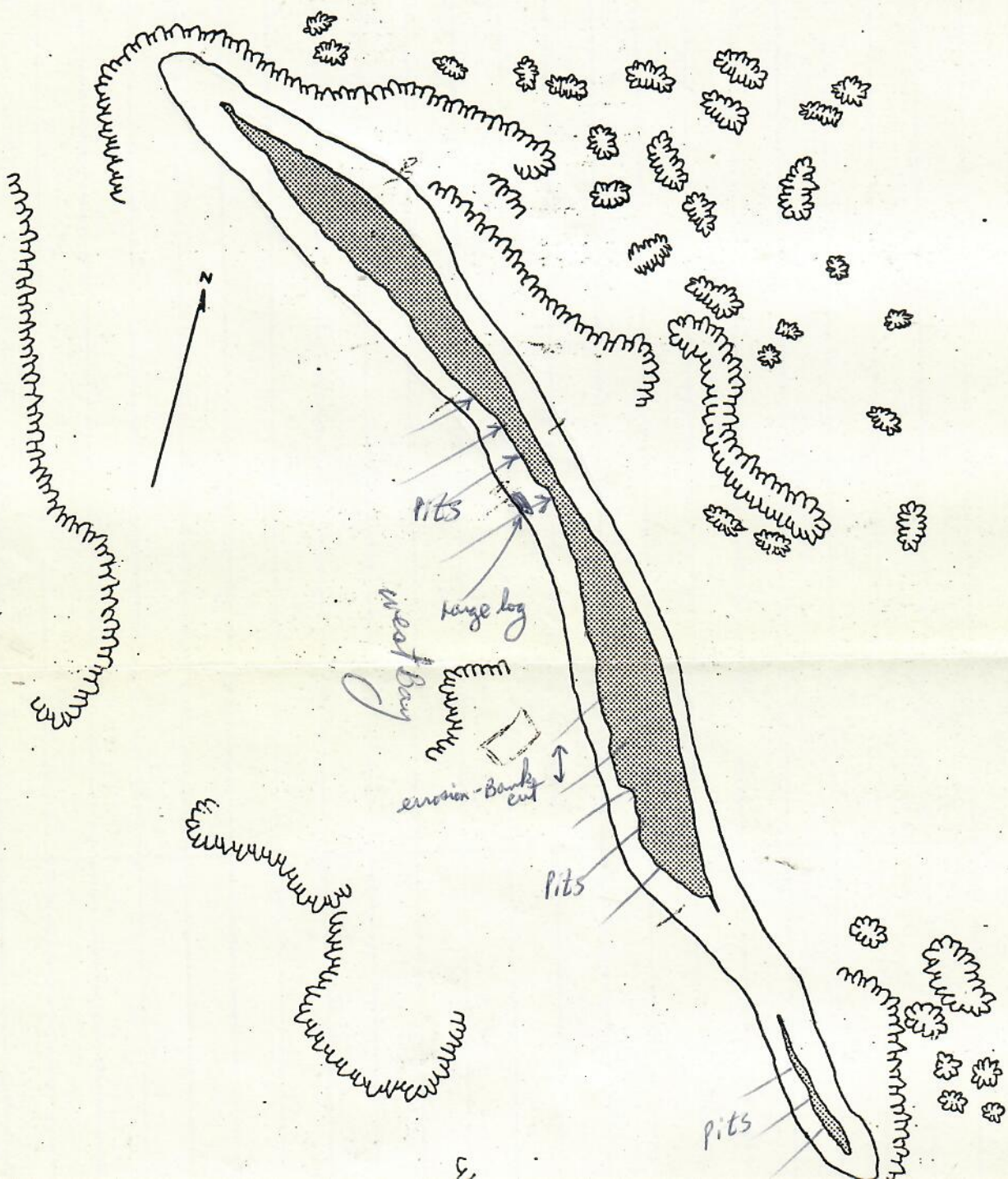
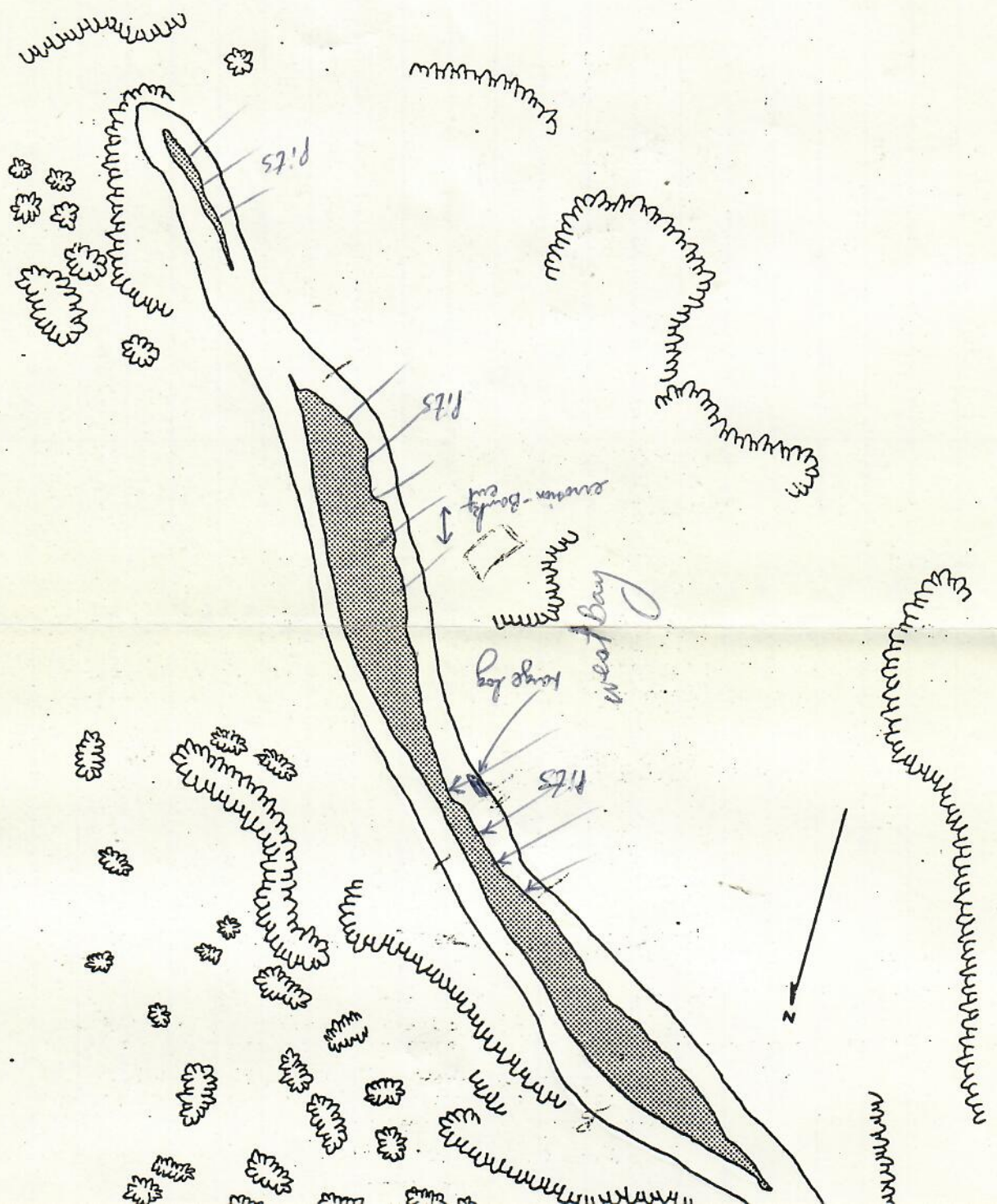
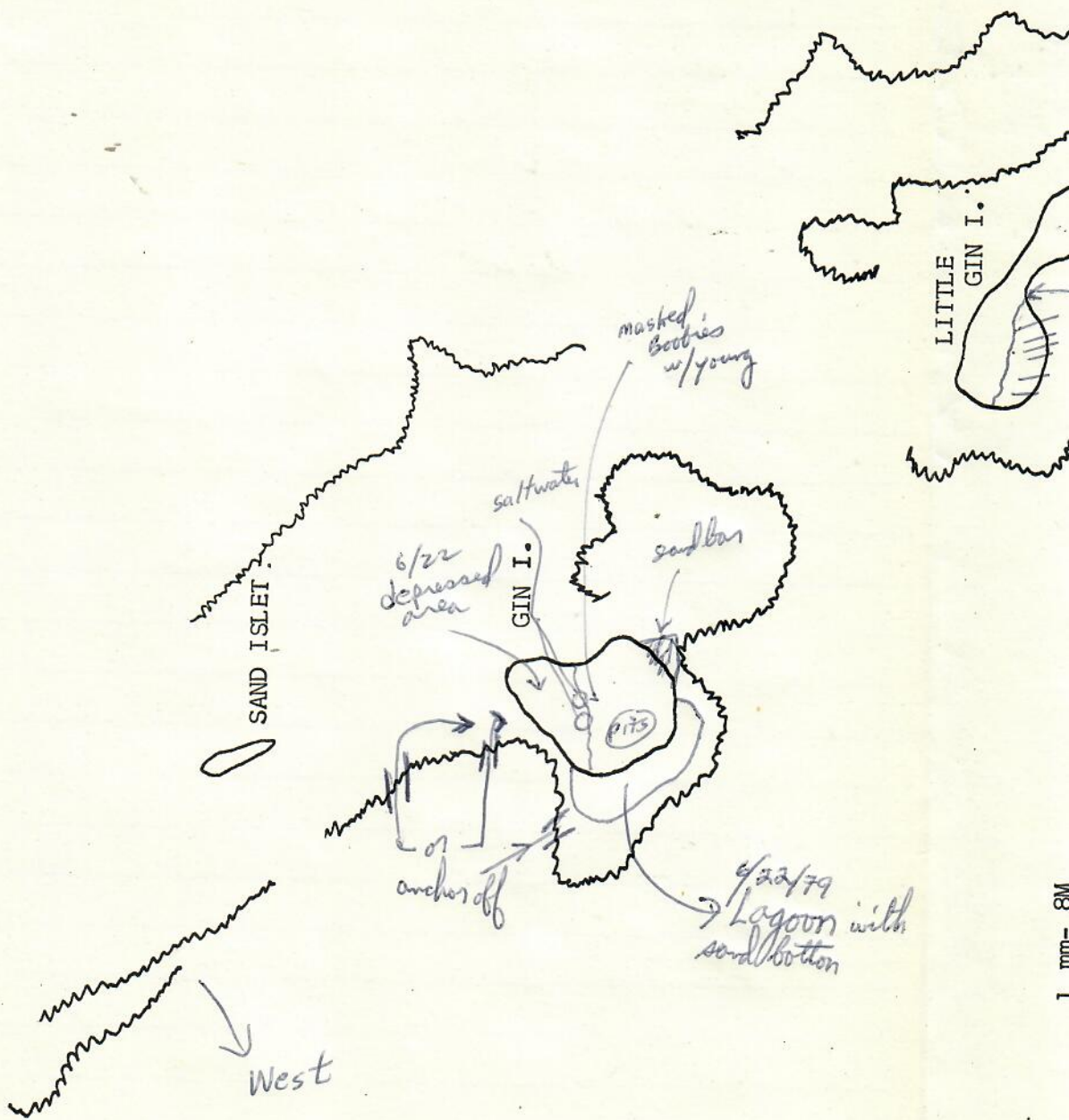


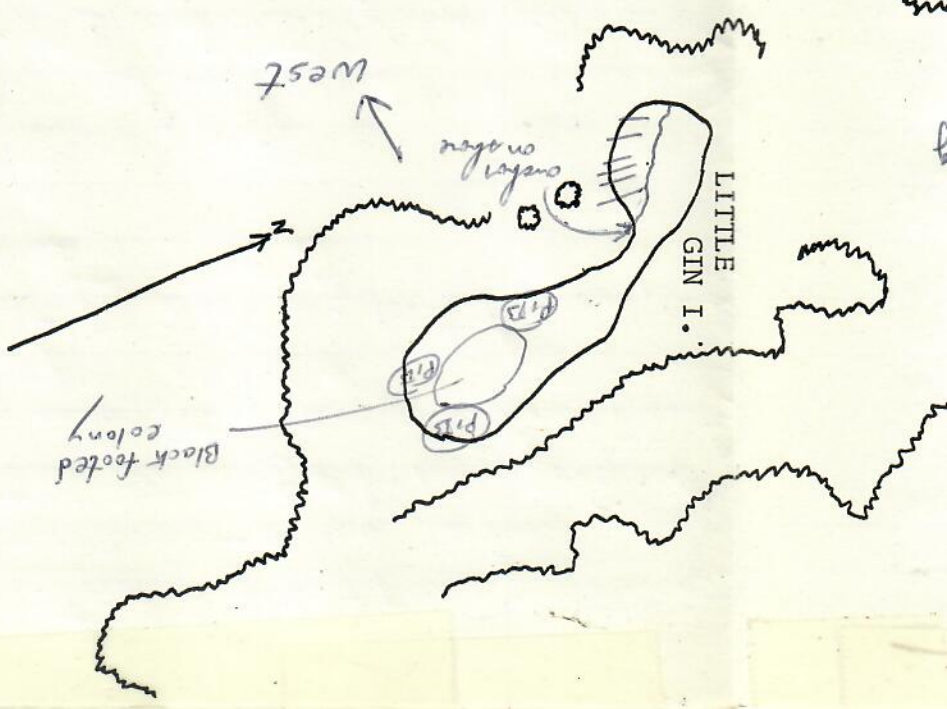
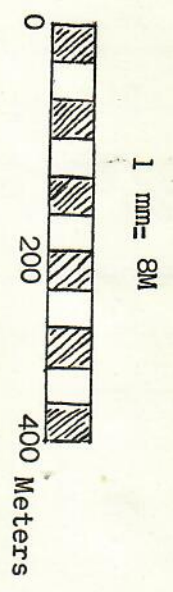
Figure 16. Whale-Skate Island, 10 January 1966. Redrawn from official U. S. Navy photograph.





1 mm - 8M

very good
Lagoon with
6/2/79



ISLAND PIT COUNTS

Thursday
6/14/79

TERN - south shore

East end to Sears - 1 good; Sears
to LORAN tower - 3 good, 12 false;
LORAN tower to west end - 1 good, 19 false
(ore dug into PVC of sewage treatment plant)

$$\frac{5 \text{ good}}{31 \text{ false}}$$
6/15/79
FRIDAY

TRIG

$$\frac{4 \text{ good}}{21 \text{ false}}$$

Eastern section - 3 good, 10 false; Central - 1 good, 9 false
West - 2 false

6/16/79
SATURDAY

EAST

Sand Point - at least 21 (can't tell which are good)

| | |
|------------|--------------------------------------|
| Areas 17 - | 3 good, 15 false |
| 16 - | 12 can't distinguish |
| 15 - | 2 " " |
| 14 - | 0 |
| 13 - | 1 good |
| 12 - | 1 good |
| 11 - | 0 |
| 10 - | 0 good & false |
| 9 - | 0 |
| 8 - | 2 good, 6 false |
| 7-5 - | 35 can't distinguish |
| 7 - | 0 |
| 4 - | 9 " " |
| 3 - | 5 " " |
| 2 - | 10 " " |
| 1 - | 3 " " |

$$\frac{125 \text{ total}}$$
6/16/79
Saturday

96

6/22/79
FRIDAY

6/22/79

6/26/79
TUESDAY

6/16/79 **Whale-SKATE** large log at boat anchorage to NW end
 Saturday - (west shore) - ~~34~~ total
 clockwise around islet
 NW end to log (east shore) - 10 total
 log to SW end (east shore) - 4 good; 19 false
 SW end to log (west shore) - 29 total
 96 total West shore of "whale" eroded - bank cut into

6/22/79 **GIN** 6 total, of which 3 may be good.
 FRIDAY Several sets of tracks back and forth across island; Depressed NW half has been washed over. Two pools of water in center depression. Photo on Roll 5. Soil sample taken.

6/22/79 **LITTLE GIN** 19 total along high rim.
 5 of these are older and were probably counted during May trip. Soil sample taken.

6/26/79 **Trig** - Noted about 10 new pits, 3 of which
 TUESDAY appeared good; pits are mostly at NW rim. After erosion is again cutting into humus of N and NW banks - noted old egg shells from clutch in cut bank. Soil sample taken. Fairly homogeneous soil extends down from 20" - 30". underlying stratum is medium coral particles - similar to Trig basking beach sample taken. In places, turtles have dug into bank, thereby hastening erosion.

NUMBER OF FEMALE TURTLES
PER NIGHT

NIGHT PM to AM

| DATE | No. OBSERVED | % SUCCESS | NEW OBSERVED | OF THOSE, NO. SUCCESSFUL | DAY ISLAND |
|-------------------------------|----------------|--------------------------------|-----------------|-----------------------------|------------|
| 6/16 - 6/17/79 SAT. - SUN. | 12 | $\bar{x} = 42.4\%$ $N = 13$ | 12 | 3 25 | ① EAST |
| 6/17 - 6/18 SUN - MON | 11 | | 1 | 5 45.5 | ② East |
| 6/18 - 6/19 MON - TUES | 8 | | 5 | 5 62.5 | ③ East |
| 6/19 - 6/20 TUES - WED | 3 | | 2 | 2 66.7 | ④ EAST |
| 6/20 - 6/21 WED - THURS | 6 | | 5 | 3 50 | ⑤ EAST |
| 6/21 - 6/22 THURS - FRI | 7 | | 4 | 3 42.9 | ⑥ EAST |
| 6/22 - 6/23 FRI - SAT | 8 | | 6 | 3 37.5 | ⑦ EAST |
| 6/23 - 6/24 SAT - SUN | 8 | | 4 | 4 50 | ⑧ EAST |
| 6/24 - 6/25 SUN - MON | 9 | | 4 | 5 55.6 | ⑨ EAST |
| 6/25 - 6/26 MON - TUES | 4 | | 3 | 1 25 | ⑩ EAST |
| 6/26 - 6/27 TUES - WED | 4 | | 3 | 1 25 | ⑪ EAST |
| 6/27 - 6/28 WED - THURS | 5 | | 3 | 2 40 | ⑫ EAST |
| 6/28 - 6/29 THURS - FRI | 6 to 4 rearing | | 3 | 3 50 | ⑬ EAST |

55 total = 4.2 Turtles/Night (11 PAC, 1 LONG ISLAND)

NIGHTS
EAST
TOTAL

- Later in season emergences may be more successful - check earlier data.

- Could "unsuccessful" turtles never have intended to lay a clutch in the first place?

2L, 4L, 10L

TC-3, 5, 9, 8L, 13L, 1, 6, 9L, 14L, 1L, 12, 11

caps new

TC-6L, 16L, 5L, 3, 17L, 18, 19L, 20L,

TC-16L, 21L, 22

TC-23L, 24, 24L, 25L, 26, 27L

TC-28L, 29L, 30, 27L, 25, 31, 18

if these didn't lay on East, what did they do with their eggs?
not seen again

TC-32L, 31f, 30, 33f, 34, 35, 36, 37L,

- Basking possibilities
- 1) Dead
 - 2) moved
 - 3) paint came off
 - 4) not basking - not laying
 - 5) didn't have eggs!

TC-33, 38L, 39, 35L, 36, 30L, 40, 41L,

TC-42L, 39, 31L, 43L, 44L, 39L, 45, 33, 40f

TC 46, 40L, 47, 48

several cold, hard rain squalls

TC-47, 49, 50L, 51

TC-52, 51, 53, 54L, 47L,

TC-49, 4, 56L, 48L, 57L, 55

EXPEDITION 83

SUMMARY OF NUMBERS TAGGED

| (Basking) | NEW | Recovery | ENCOUNTER TOTAL |
|-------------|--------------------|--------------------|------------------------|
| Trig | | | |
| Male - | 1 | 4 | 5 |
| Female - | 1 | 4 | 5 |
| Whale-Skate | | | |
| Male - | 5 | 7 | 12 |
| Female - | 21 | 3 | 24 |
| East | | | |
| Male - | 5 | 7 | 12 |
| Female - | 7 39 | 3 28 | 10 67 68 |

(Nesting)
East - 52 + 10 = 62

(41 + 11) = 52

11 of 62 encountered show 2-year cycle ∴ $\frac{11}{62} = 17.7\%$; 14 Recv. of 62 = $\frac{14}{62} = 22.6\%$
13 (excluding 50 19-tagged elsewhere)

JUVENILE CAPTURES -

8 captures, - of those, 2 Recoveries

13 turtles of the 62 (encountered) AT EAST examined, were found to have tags put on during previous years at French Frigate Shoals (20.1%).

11 of the 62 examined displayed a 2-year cycle (17.7%)
1 - 6 year cycle = 1.6%

Calculation/determination of reproductive cycles would involve counting the number of HMB tag recoveries and dividing by the total number examined (on east) - both TC nesters and baskers.

6/1
6/18
6/2
6/6

Bad or LOST TAGS (UNUSED)

- 6/17 PM (3144) lost in sand - East Island
 6/18. PM *3162 ³¹⁴⁸ did not cinch → USED 6/23 on W-S Juvenile
 (3159) " " " → 6/27 ^{used} juvenile at East
 (3156) " " " →
 6/21 *3180 " " "
~~Bad~~ *3186 " " "
 6/21. [3196 - 3200 lost on card out of my back pocket - W-S]
 6/27-6/28 *3251
 *3256

* Not used at FFS during June 1979 -
 returned to Honolulu with them for
 use at another location.

19 JUNE 79
TUESDAY

Note that in nesting areas on East (and other islets presumably), the soil has been turned over many times by nesting turtles (excavating and egg covering). During nonnesting periods, weather/ocean conditions would not alter this condition appreciably. In the Styrach & Perran paper for Ascension, substrate was sampled at different depths on an ocean formed beach. Possibly at such a location changes in substrate mixture could occur between seasons.

Note that for all last night high intensity light was on at west end of Tern - yellowish cast to light - very bright - this was apparently for buoy tender operations.

~1030 AM departed East for Tern after shooting one ^{50'} roll of 16 mm film - of seal with pup, basking turtles and panoramic view of East Island.

Bob Justman ^{Beech 118} landed ~ 11:15 with Brent, two FWS men, Capt. Robb and another USCG officer. Went over facility in preparation for transfer of property. Justman suggested that USAF or other helicopter

19 JUNE
TUESDAY

MK2

19 June 79
Tuesday

could be used to ferry trash out to deep ocean dump.

SA ORET asked "what difference does it make if junk is around ~~for~~ since people can't come out here to see it"??

Letter from Tim with photographs and indication from Brent that I would have a seat on June 30th airplane.

MKA

[Thom Knight
300 Richards Ave
PAXTOX, MASS 01612

Plane departed ~ 3:30 with Knight & Childs (been here ~ 5 days, with Loran C Honolulu).

Head maintenance man for Oahu FWS last name "Black" - just returned with Barry from cat hunt - killed ~ 135 on Jarvis - only a few on Baker (got all that they saw). Machis was used.

"Captain Robillard took CG to sweep it out and walk away". They had previously thought that they would have to rust proof engines and remove air condit'ors - board up some windows.

19 JUNE 79
TUESDAY

Tried to call Lin through Darrell, but DA - (no answer) - ^{DON'T} talked to Dad instead - He said that Linda Olsen had called to get our phone number.

Departed for Trig ~ 6 PM - just motored along North Shore (only 1 ♂ basker, also mother still with dead pup) -

Motored to Whale-Skate, anchored and tagged/counted basking turtles. Noted two small sharks in shallow water right along shoreline.

* Need - Concisely prepared table or graph showing Number of breeding females ^{on East} tagged during each of the years 1973 - 1979 (7 years), and the number of recoveries made during subsequent years:

This could be white nesting and basking

FOCUS ON REPRODUCTIVE CYCLES (if indeed they exist)

| year | Time | No. Turtles tagged | No. Tagged turtles recovered |
|------|------|--------------------|------------------------------|
| 1973 | | | |
| 1974 | | | |
| 1975 | | | |
| 1976 | | | |
| 1977 | | | |
| 1978 | | | |
| 1979 | | | |

also for males?

19 JUNE
TUESDAY

19 JUNE 79

TUESDAY

Subjective description of various colors present in carapace: Black; Nearly Transparent, either greenish or yellowish; Reddish; Brownish; Sunburst (Goldish radiations);

Plastron: yellow - to yellowish-orange, to orange.

Noted lots of shearwaters on the island at night - far more than during the day.
Lots of Black-footed albatross - seems that they are late to leave this year.

GREEN Turtles:

- 1) Most adult females seem to only have one reproductive season; Many only lay one clutch;
- 2) Growth in many areas seems to be exceedingly slow;
- 3) Tiger shark predation may be high on both adults and juveniles
- 4) Some don't seem to digest their food very well;
- 5) Many seem to be fixated on a small feeding pasture range;

20 JUNE 79
WEDNESDAY

What is the recruitment rate of females to the breeding colony?

This might be measured by number of small females (untagged) appearing each season, provided that reproductive capacity is size dependent. [Rate - 1% - 5% - 50% or ?]

Note that background noise of sooty terns and other birds may serve to mask my activities to seals and seals/pups.

NEED - Some assessment of how many turtles encountered show evidence of previous tag (ie "knot", missing piece, pink scar).

Aranda
~~Aranda~~ Air arrived over Shoals about 11:15 AM

→ There are more green turtles nesting on Tern Island than on all the major Hawaiian Islands.

Noted fledgling albatross surprise and disturb a juvenile (SA) seal. Also, nesting turtles may do this to seals with pups.

Noted that substrate on the surface of East is coarser than underlying layers. This is probably due to the effects of wind and rain removing small, fine (light) particles, primarily dark humus.

20
Wed

21 JUN
Thurs

20 June 79
Wednesday

At 3PM, noted two juvenile turtles feeding on East Reef - school of grey reef sharks close by.

- * Note that turtles tagged basking at Trig and Whale-Skate don't show up at East - need to check records for case of such movement recoveries.

Slept between 6:30 - 10:30 PM
2 AM - 4:30 AM; 6 - 8 AM

6/21

= 8½ total

21 June 79
Thursday

Walked to SEP at - 9 AM;
Noted 5 pups swimming and diving (and feeding?) on East Reef.

Seal with pup near Bulldozer - East Reef has abscess on back that is draining. Will this infect pup?

Noted seal 775 by fallen pole area 11, took photos, roll 4 and measurement on pole. This seal seen at Whale-Skate on 6/16/79 - If seal alternates between these two hauling islands, does this mean (or suggest) that it feeds in the intermediate waters?

- * Could it be assumed that adults derived from more productive (faster growth) feeding pastures would have a shorter reproductive cycle - i.e. 2 years or ?

21 June 79
Thursday

- Transmit to Whittow -

Possible mechanisms which stimulate basking:

1. Scarcity of underwater resting areas
2. Increase heat-air in digestion, etc. [Deliberate]
3. Reduce predation - mutilation
4. Speed up egg development - calcification -
5. Escape attention of males
6. For males - get near females - sense pheromones

Consider - why don't they bask in major islands?

Departed East ~ 12:30 PM for W-5 -
tagged baskers on W-5 - took black &
white photos.

Noted - Seal with large abscess
Seal with tar on chin and mouth
Seal with pup has torn places on
flippers (healed) when they were

Large (~6 feet) Gray shark swimming
very fast close to shore - passed
right by mother w/pup, adult seal, and
adult turtle, all in the water.

Recovered Depth Meter C - read 42' - "C"
in proper position.

1500h Proceeded to offshore N Trig - only
one male basker - dead pup still there,

21 JUN
Thurs

FN
CFireman

21 JUNE 79

Thursday

FN

(Fireman)

Andrew J Howle
 11740 Churchhill Rd.
 River Jct Mich 48277

Howe

Cut cables digging a hole with tractor; pipe punctured tire.

but mother appears to have left.

Proceeded to Tern. Call to Lin through Darrell at 5 PM. Saw one juvenile along seawall, but missed it with the net. Swim raft has been hauled out of the water for burning and burial.

Considers: Courtship biting during copulations may release blood that stimulates tiger shark attack.

Determine: If munitions, poison gas or other toxic substance dumping took place in or around French Frigate Shoals, or any ^{of the} other NHI.

Report that US66 has a drum of oil to dispose of.

Departed Tern at 6 PM - choppy, arrived at East at 7 PM.

22 June 79

FRIDAY

As during other years, shearwaters are commonly rescued from underground nests following collapse by moving and nesting turtles, and the movements of the turtle researcher. These birds are ^{usually} able to get their heads about ground, but not the rest of their body. There would seem to be survival value in digging a deep burrow.

At ~ 12 noon, observed a juvenile feeding on East Reef while a 5' gray shark passed nearby. There is a school of 10-15 grays right next to East Reef - No response observed due to this proximity.

* Considers nutrients leeching into water on islands used by seabirds. This might serve as a chemical cue to nesting turtles. Or, considers nutrients released by hatching eggs serving to draw turtles back to same island.

Islands regularly used by nesting seabirds are probably also safe for nesting turtles. Considers correlation for islets at O FFS.

LIST OF JUNK / DEBRIS SEEN ON ISLANDS
AT FFS

1. Glass bottles with lids on (all types)
2. Plastic bottles and jars (all types)
3. Plastic lids
4. Synthetic line (including large haulers)
5. Plastic motorcycle fenders
6. Slippers / sandals
7. fish floats (plastic & glass)
8. Light bulbs (round & neon)
9. Red toy truck
10. Clothes basket
11. Resin globes (two types)
12. Tar globules
13. Water pitcher
14. Leather shoe - rubber sole
15. Propane cigarette lighters
16. comb
17. aerosol cans (cheese spread, dog spray, etc)
18. styrofoam
19. toothbrush
20. Plastic construction helmet
21. thermos bottle
22. radio tube
23. wooden mop handle
24. thread spool
25. bottles w/ bible message
26. long lengths of PVC
27. 1/2 of a car tire - Boat dock fender - tire w/rim
28. logs
29. Water pitcher

22 June 79

FRIDAY

USC's personnel may be depressed because their "home" for a year is being ~~lost~~ abandoned, partly destroyed, burned, buried, and given away.

IMPORTANT ITEMS FOR USFWS CARETAKER

1. Lookout for vessels, using building tops
2. Lights kept at a minimum (no tennis court or high intens)
3. Don't disturb basking turtles (Discreet)
4. Prohibit glass ball removal!
5. Monitor VHF Channel 16 for emergencies

22 Jun
FRIDAY

22 June 79
FRIDAY

Departed East for Gin, L. Gin to count nests.

At Gin, noted that ^{small} reef enclosed lagoon has comparatively deep gree. This area may be tiger shark safe.

In this gree I noted a TC turtle - thought it was TC 3 - but apparently was wrong. Note³ that during fast seasons TC turtle have been seen at Gin Islands. East to Gin is _____ miles distance. Also noted copulation on reef 6/22/79.

Counted 32 Masked Booby young on Gin - no other bird species; no vegetation.

* Noted 3 fairly new RC cola cans - from USCG personnel?

Proceeded to Little Gin at 3:30 PM.

As shown in seal census, I noted a lot of hyl possibilities (5 out of 6 SAs).

Counted 155 Black-footed albatross young, and 6 dead.

Also: 13 Masked booby young

10-15 noddies, and one on egg.

~ 20 plants of vegetation (all same species)

on both of the above islands, sand samples were collected. Underlying sand was nice and moist.

Returned to East ~ 5:30 PM. Caught an

22 June 79
FRIDAY

ulua over "green" spot during return trip,
for use as shark bait.
After anchoring boat, two gray reef sharks
swam close by - very shallow water.

"A method of determining the maximum
diving depth of a [free ranging] sea
turtle." ~~Herpetological Review~~ (cite Landon?)

Perhaps greater reliance should be placed on
the durability of my original tags (Mongl),
at least for the present length of time they
have been turtles, 1973-76 (6-13 years).
Most of these turtles had 2 or 3 tags each.

Consider pheromones¹ released by turtles at breeding
islets as a clue to younger, inexperienced
turtles traveling to the area.

Also, soil particles blowing into to
ocean off of East Island (predominantly to
the west).

23 June 79
SATURDAY

At 0600 TC36 was depositing eggs in
area 5 - covering nest until ~ 7:30.
Took 16mm Movie Roll C₃ as well
as several color slides.

Set shark hook from bulldozer and
slept from 8-10 AM.

A method for recording the
maximum swimming depth
obtained by a sea turtle

23 June
SATURDAY

3148

23 June 79
SATURDAY

At ~ 1045 noted vessel in area of La
Lerouse. Using 250mm telephoto I
could see sharp bow, blue and orange/red
coloring. Appears to be awning over stern.
Notified watch stander USCG to inform Mr.
Heggens at 11AM. They checked from
roof top, but could not see it.

At ~ 11:30 the boat moved to the south
after going repeatedly back and forth by
LaLerouse.

At ~ 11:45 I departed for W-S
via Bare Island.

At W-S west Bay I scoop-netted a
juvenile, as follows:

3148 LFL (Right flap missing - ^{light} scar in area)

S - 16 $\frac{1}{8}$ x 12 $\frac{7}{8}$
40.6 / 32.7 /

C - 16 $\frac{7}{8}$ x 15 $\frac{1}{4}$
42.9 / 38.7 /

PL - 13 33.0 /

HEAD - 2 $\frac{1}{2}$ 6.4 /

TAIL - 3 $\frac{1}{4}$ 8.3 /

2 $\frac{1}{2}$ lbs

Nothing in mouth.

23 JUNE 79
SATURDAY

Depth Meter C observed basking
on W-S - reading of 20' - reset to 0.

Observed and photographed (roll 5) a seal
with $\sim \frac{1}{2}'' - \frac{5}{8}''$ diameter line snarl, one loop
of which was around its neck.

Grabbed a hold of it and pulled it off
before seal went into the water.

This entanglement probably occurred
very recently. Noted RC can on W-S.

Proceeded to Tern via offshore Trig
(only 1 or 2 baskers).

At Tern I noted that Turtle Club
is now being torn down - interior
gone.

Outdoor barbecue dinner and return to
East, arriving at 7:15 PM. Caught an
Alva along Round Reef for shark line.

— Reproduction (in) tagged Hawaiian monk seals
at French Frigate Shoals

24 June 79
SUNDAY

Could "no moon" be related to scarcity of basking taking place on Trig and W-5 during the past few days? No night feeding? ∴ less incentive to haul out; or need to feed during the day?
Note that movie film of TC 36 will demonstrate powdery hummus dust separation that takes place with nesting.

Tog 3008 TC 37 recovered nesting on East 6/23/79 was originally tagged while basking on Trig 5/21/79. This shows that some of the turtles basking on Trig travel on to East for nesting.

At 12:30 PM walked down to SNEP. Noted juvenile turtle in East Cove on the surface over deep water. Apparently is not fearful of shark attack at such an exposed location.

At low tide,
~~two~~ ^{three} iron posts are still present in reef at SNEP; also noted one near Bare Islands. There used to be one near boatwhaler anchorage, and one on a coral head between East and Round Islands. Were these markers for seaplane runways?

"Some Aspects of the Green Turtle Breeding Colony at French Frigate Shoals"

24 JUNE 79
SUNDAY

* Observation at SNEP: As the tide rises and wave wash get bigger at NEP, basking turtles get splashed by waves. A response to this appears to be departing NEP, swimming around SNEP point, and hauling out at SEP. I suspect that principal underwater sleeping is along the reef extending out from SNEP, and perhaps the "green" holes in the SNEP reef flat itself.

Need to devise a way of determining what feeding pasture location a particular nesting turtle originates from.

Epizotic - barroco, ^{skin} algae? coralline algae?

skin, fat or flesh characteristics resulting from diet.

More frequent return possible from more productive pastures - significant implications for NHT1 returns major egglands.

First-time monk seal mothers leave their pups earlier?

Spent about one hour at SNEP watching and photographing basking turtles.

Noted that population scabs and other details (deformities) are readily noticeable on basking turtles as they are washed clean. During nesting, poor light, soil and sometimes mud make it hard to see these characteristics.

* Note That a number of nesting turtles this season have been seen to have patches of pure white coralline algae on their carapace - NEP I.D. - possible source and range of algae

24 JUNE
SUNDAY

- Check for TC's among baskers on East occurs at least once every day - every other day for W-S. See "basker Census" 55 for details.

24 JUNE 79
SUNDAY

Do turtles from the major Hawaiian Islands bask at FFS during the breeding season?
Do turtles from only certain feeding pastures bask at FFS? * Need to check previous records to see if recoveries in majors were seen to bask. i.e. 2229 (1977 FFS recovered 1978 H16)
Brown Noddy terns feed their young in the same manner as albatrosses (?).

Noted copulation attempt at SNEP.

Noted that black-footed albatross adults seem to become lighter colored as the season progresses, particularly in the face and base of the bill.

* EMERGENCE OF TURTLES FOR NESTING SEEMS TO BE TIDE DEPENDENT ^(center of two daily tides) IN MANY CASES.

Noted that seals rise up high out of the water to get a good view/see further. I have seen this with seal approaching an island; and an adult ~ 1/2-1 mile off Whale-skate toward Trig.

Breeding colonies of Masked Boobies are not abundant at any Leeward Island location. Check ARB's.

25 June 79 Departed for Tern Island direct via Round
 MONDAY at ~ 12:30 PM. Intermittent heavy rain
 squalls.

Noted LYP green in front of club with
 cut front flippers.

Called Jim through Danell at 4:45 PM -

Then talked to Emmett Finch for about

10 minutes. He thinks North reef could be alive during
 his ternes.

About 6 PM I talked to Skip at Pearl
 and Hermes Reef - said that there were
 no nests at Southeast Island; "Area of
 55 nests of last year is grown over with
 vegetation." He only saw one turtle.

* At about 5:15 PM a turtle hauled out
 in area of fuel tanks - only got about
 half way up the beach - Jones and two
 other USCG were there to take photo -
 This may have caused her to return.
 I observed Jones walk over a LYP (green)
 and kick sand at it.

Seems like nearly all USCG hate birds,
 particularly Sooty Terns.

Returned to East (Gooney Bird Island)
 at ~ 7:15 PM.

Tried to free shark line - tangled on
 iron post - rod, ~ 5' gray reef is on
 hook.

26 June 79
TUESDAY
Several cold, hard rain showers last night.
No egg laying detected among the 4
turtles out for nesting. No turtles
out during the 5:30^{AM} walk around the
island.

Dried-up Remora (11" long) found
in vegetation zone of Area 1 a
few days ago. Note papers by Fretey
concerning Remora falling ^{off} leatherbacks when hauling
out to nest.

Untangled shark cable from boat -
re-baited with whole ulua.
Departed for Whale-Skate about 1130 AM.

Noted nest in area 12 during walk to
SNEP at 1030 AM.

Also pup was born at NEP - of
pregnant female that came ashore in
recent days.

At Whale-Skate I tagged female basking
with 3233 LFL - pliers did not unlock
and camera (BZ) got wet trying to relieve
them. Read Depth Meter "C" - 20'

Noted large school of Sholehole spread out
in shallow water around the southern end of W-S.

Noted SA seal previously seen with large

26 JUNE 79 "Boil" on its back. "Boil" has now opened
 TUESDAY exposing area of raw flesh/fat, with skin
 hanging to the side.

Returned to Tern Island to clean camera as
 best possible.

Walked along seawall with net and missed
 catching three juveniles.

On the way to Tern from W-5, noted
 an adult at the surface about $\frac{3}{4}$ mile
 of Tern. Coloration suggested that it
 might be the same turtle observed hauling
 out by fuel tanks on Tern yesterday
 afternoon. Fresh diggings and tracks
 were noted by fuel tanks. Turtle passed
 through rusted out area of retainer iron -
 may have deposited eggs in corner formed
 by fuel tank retainer wall and retainer iron.

- Does competition exist for underwater resting
 space during the breeding season due to
 the influx of turtles? Compensate
 by land basking?

Departed Tern ~ 1600 for Trig. Anchored and
 counted seeps - no basking turtles present.
 Noted that all bunchgrass is dried up -
 appears dead. Also that there are no
 Sootys on Trig. However, bunchgrass on
 W-5 and East appears healthy.

26 JUNE 79
TUESDAY

Proceeded to WS at 1700h - tagged some basking turtles; no sign of turtle "with piers".

- * Need to know the total number of tiger sharks fished from FFS in recent years (Taylor/Waftel MMC report plus ^(CATCH RATE DROP?) March 1979 research). Thus far I have seen no evidence of tigers around East Island, such as during other years. Ammunition casing (M-1?) found on whale-skate.
- * Monel tag durability may be better at certain feeding postures, such as in the NHI. For example, some of the large style monel tags recovered from "resident" turtles at FFS have held up very well, showing minimum signs of deterioration. Possibly an abundant supply of nutrient/higher metabolism causes faster corrosion.
- * On WS, noted wale^{recovery} 3077, 3078 with tail buried partly in sand. This is a noteworthy consideration for basking (see difference).

On East, noted that there are far more Messerschmidia plants than other years.

27 JUNE 79
WEDNESDAY

At this point I have ^{subsequently calculated at termination of study to be 11 of 61 or 18%} 9 recoveries from 1977 East Island tagging (38 total), which equals a 23% ^{nesting} recovery for a two year cycle. This is far higher

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WED.

recovery than for any previous seasons.
Is this due to the use of
Inconel tags?

Is the earlier low recovery rate
due to TAG LOSS or TURTLE LOSS?

Could ^{or PROTRACTED BREEDING CYCLE?} protective legislation now in effect
be responsible for the higher recovery rate?

Note that, as shown at east, turtles almost
exclusively back on the island where
they nest.

With respect to males, I can only detect
(make tag recoveries) if they back.

General presence can be detected
by direct observations of copulation and
persistence in inshore waters.

During afternoon I noted piece of turtle
laminae ~~was~~ incorporated into nest of
Common Noddy built in low scrub in area 15.

Between 2-3 PM, pregnant seal hauled
out by BW anchorage.

Observed her "root" forward.
Also "white spot" male came by her for
awhile.

Weight on land before parturition may be
bad for fetus(?)