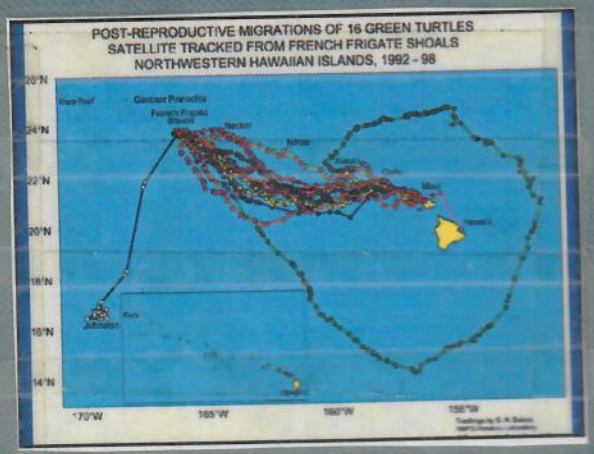
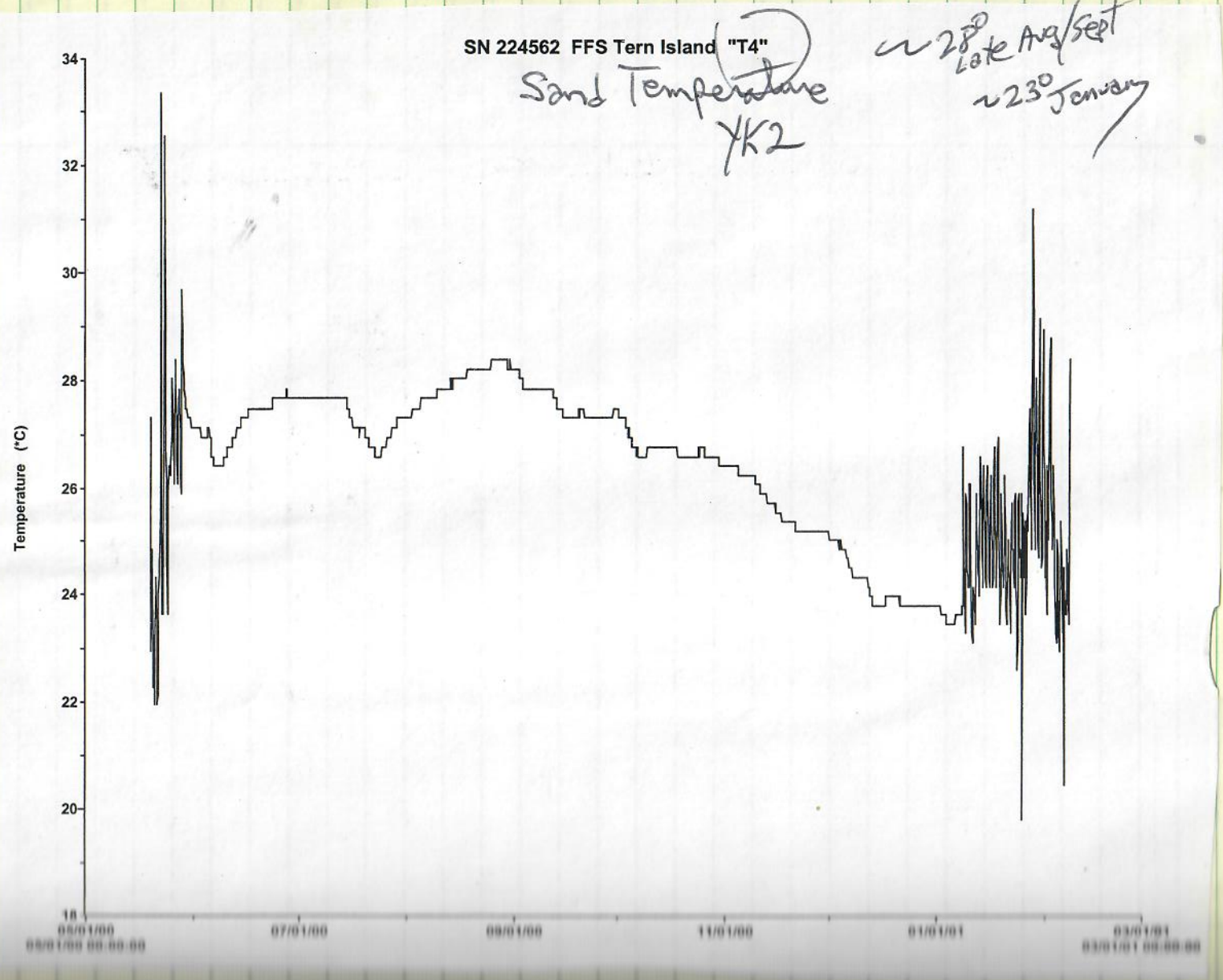
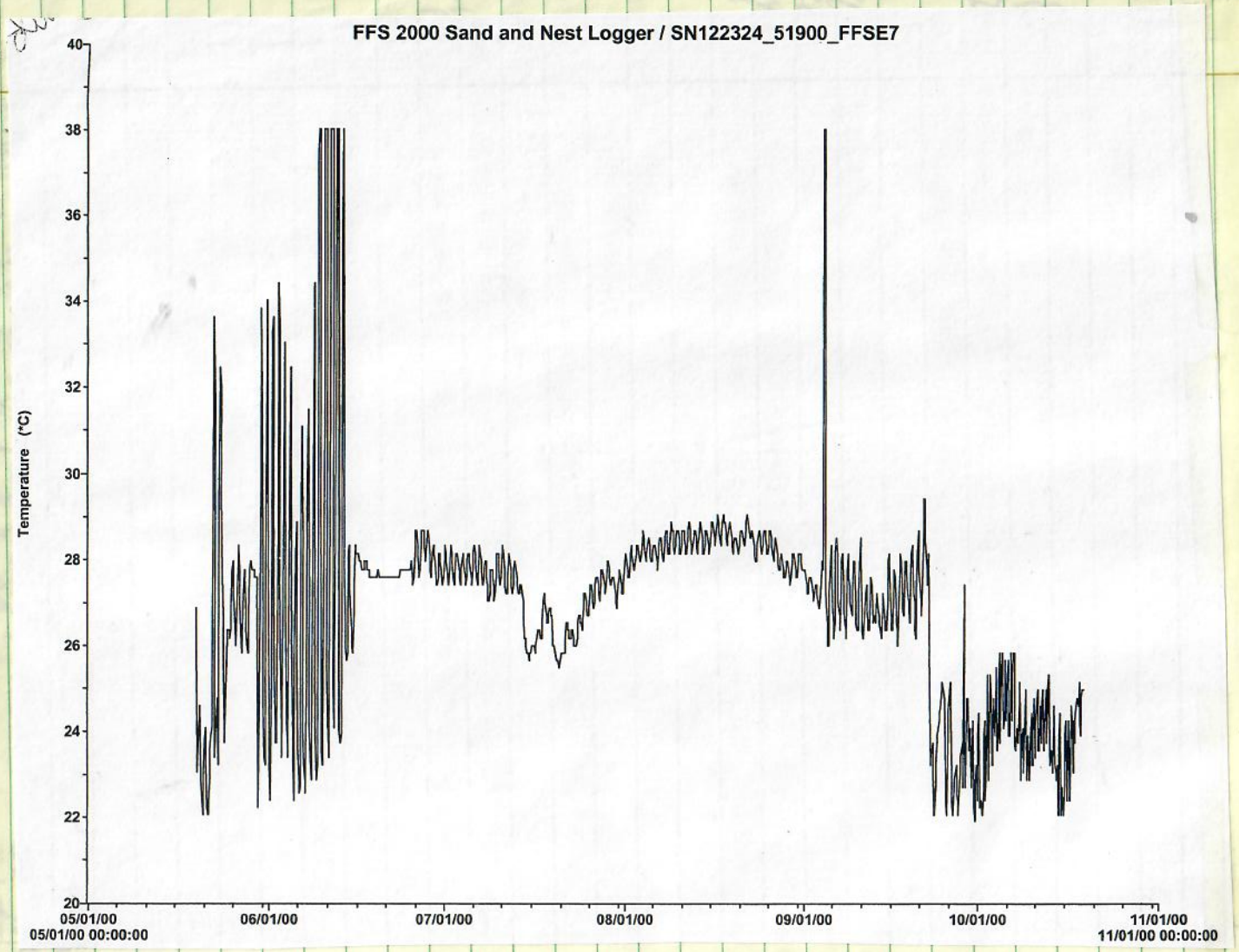
FFS 1999 26 Sea
2000 27 Sea
EAST 2001 21 Sea Hea
Depart 6-6-01 Wednesda
705Am
ISLAND Depart TERN 6-14-01
1115AM
FRENCH
FRIGATE
SHOALS

G. RALPH'S Log

2 OF 2




SN 224562 FFS Tern Island "T4"
Sand Temperature
YK2
~28° Late Aug/Sept
~23° January
Temperature (°C)
34
32
30
28
26
24
22
20
18
05/01/00
07/01/00
09/01/00
11/01/00
01/01/01
03/01/01


FFS 2000 Sand and Nest Logger / SN122324_51900_FFSE7
Temperature (°C)
40
38
36
34
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28
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22
20
05/01/00
05/01/00 00:00:00
06/01/00
07/01/00
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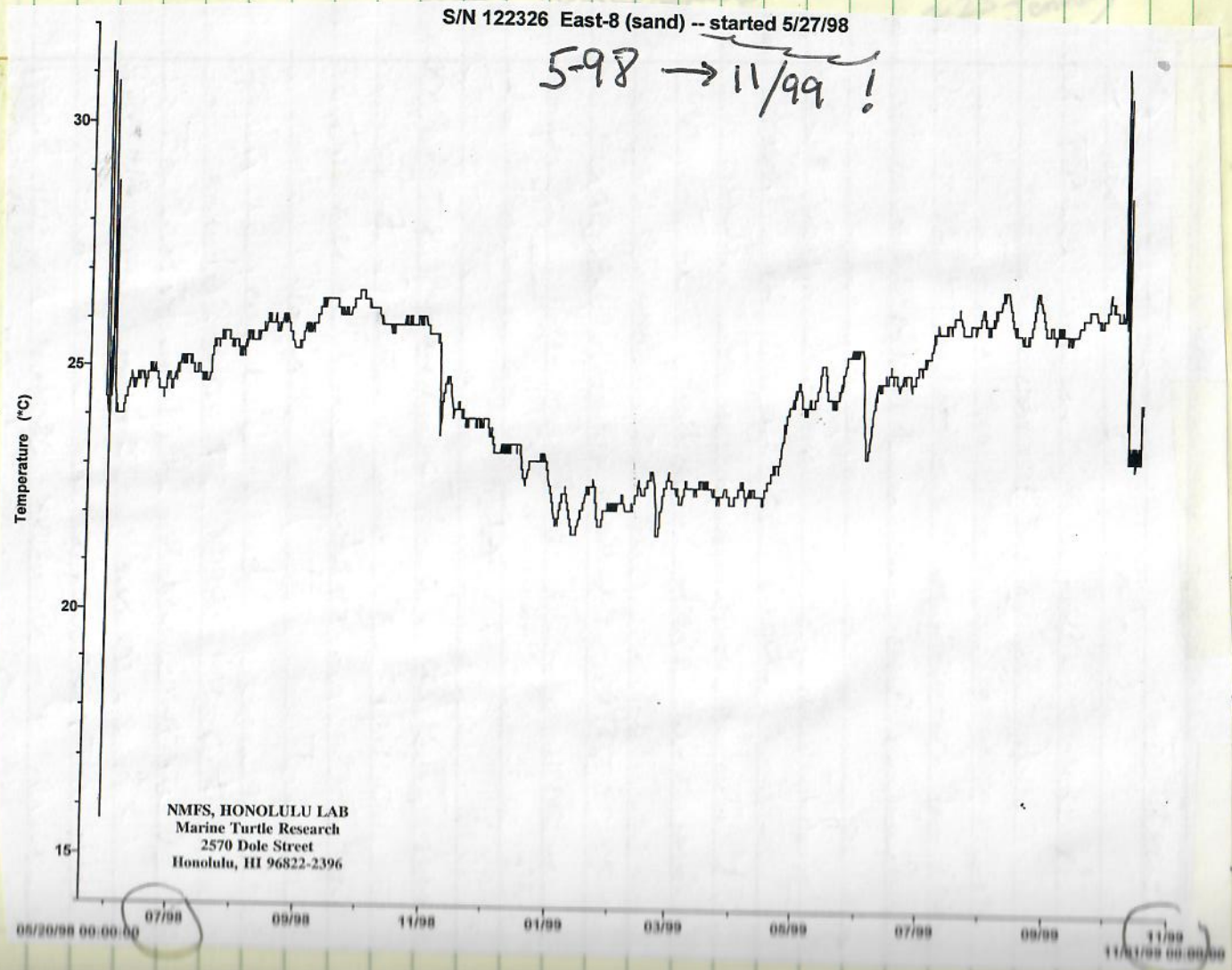
10/01/00
11/01/00
11/01/00 00:00:00

"Go to these waters" "There is a River



FFS June 6, 2001
xp.

6-6-01 my chartered flight
WEDNESDAY Bob Justman Depart Honolulu 705am from
28th nesting season of East Island
Monitoring. Me + Food & Co Pilot. Photos print
of Bob & I (By Dominique).

p.o. by me. Aaron Detrich flew up on 5-31-01 to set up camp, etc. FWS volunteer Matt Bettis already up there. Bob Justman's 512th flight.

6/6/01 wed. DAY 1 3 hrs, 15 min flight - CANP ~ 1010 AM
Video of East and Landing at Tern.
PM walk around Tern - Video
Tony & Jim took Frig and my gear to East where Aaron & Matt are camped. Brought + Matt Blackmer was with me 2-Nights
~ 50 turtles basking on East Beach (Sandbar) of Tern. Visited Shell and Crab Beach.
Walked around Island and Facilities Shooting Video.
Sunny, partial cloud, Light winds.

~ 9-1030 PM Night walk to East Beach 9-1030pm. Read tags
2 BASKER MALE - 5321 4FL
Print Photos taken w/ Olympus FLASH
" Female G799, G862
" " G165
" " F976, 948-I
Probably 30 Turtles - 5 nesting. No seals.
6 Baskers along South Beach of Tern
all males. Saw Male w/ shiners
No nesters up.
South Beach of Tern has vegetation w/ Birds large bushes low to water, Sand erosion, dense Scaevola in and out "paths", some sleeping seals. Would be very difficult to have full coverage monitoring of nesting turtles. However, East Beach is excellent for such purpose; Also, spot areas on South Beach could be accomplished -

"Thank you JESUS" "the glassy sea" "He Gave the promise" "To greet our loved ones" "Till we reach that other shore"

6-6-01 Wednesday (Continued) such as in front of Tennis Courts building.
Room at Tenby is in officers wing - has lights, Bathroom and Shower ("Sick Bay" room).

JUNE 7, 01 AM - Windy 15-20kt South wind - Thursday Light mist RAIN, threatening but didn't really ever rain hard.
11-1230pm Walked to East Beach via Shell and Crab. No turtles at latter nor nesting tracks from last night. East Beach has ~ 30 turtle basking. Completed video 60 min of them and various birdlife. called Dara on Stato's phone.
~ 4pm Departed for East - Tony Lopozo and Matt Bellino my gear (2 Pelican boxes + 1 buckets of "Waves of loneliness" 15-20kt East wind mainly - choppy but powerful outboard pushed us through fine. Arrive East ~ 5pm - unloaded and unpacked settled into turtle camp with Aaron. ~ 6pm walked to original campsite and took photo 35mm slide. Then walked around island videoing all aspects until about Sunset. "Weed" present in central part of island. Lots of Tribulus Area 9-10-11. Log formerly from WS lodged on East for years now cut loose in wave wash - another log next to it. They seem to be causing erosion to shoreline. ☐☐ Cement pods ☐☐ are now right next to drop off of bank. Tournefortia slightly to east now being undercut.
- SHOALS ARE SINKING? - or Sea Level RISING? TO P. 6

Flash Backs! Heaven Hell Amazing Grace was blind but now I see.

Mom's Here

On East

6/7 List of items for EAST = TP, WATER, Butter, Apple Juice, Wash Bowls for dishes, Frozen vegetables, Milk (cardboard), Measuring tape, COMPASS for data logger location.

"YOU DON'T NEED TO UNDERSTAND"

EAST = Did it to Prove I could do it when No one else was Newly Emerged Hatchling in-Hand Pitch-Black night held up, My Eye close to it's eye with stars shining bright in the sky above -

- UNchanging - 2 - Birds - Bird Noises - Sounds -
- Am Radio mid 1970s - JS radio program
- What was last year/date I walked around for night survey in June/July season? =
- Last satellite Track deploy walk-around =

SHOOT UP THE FILM! - Video, Print & Slide - Video light + Flash fm 35mm SLR

Confront your Demons, Meet your Angels

What will East look like in 60 years, considering lost 60? Headstarting needed to encourage new nesting areas?

East Beach Sand at Tern to be used for fill in reconstruction project?

- Days are soo Long, and oppressingly hot, especially when the wind stops.
- Forced to forget to retain sanity
- 6/11 ~ 11PM Moon not yet up "There ARE STILL STARS IN THE SKY!" Recall Capt. Cameron's Quote, Turtle.

"WHEN I LOOK AT THE ISLAND I SEE MYSELF"

EAST ON

7 JUNE 01 - "What a wonderful Savior- He was nailed to the cross for me" Lost her life saving father and brother.

Thursday

Consider seawater rise eliminating nesting habitat? Where will they go? Whale-Shale is gone - will it return? See Brenda or Thea for update this happened.

weed

- Have greater numbers on East in any way been related to W-S eliminations? Assumption has been that increase in Tern has come from W-S turtles.

- Survey -

6/7/01

~9:15pm First walk around East followed Aaron. Pitch black moon not up yet. Walked Counter Clockwise - toward sunset. ~10:45pm. one mother w/ pup on island - by log pier, + A few juveniles. But later in night other seals hauled up. Aaron wondered if turtles are resting to keep us away (?) Small colony of sooty Terns ~100-200 just east of tent. Nesting pits are clustered - major areas are/ seem to be Area 5, SP, Area 7 machinery, Areas 1-3/4, Areas 17-18, Places where nesting is sparse - Area 8-10 interior.

BLACK EAST at camp? Night ONE w/ AARON by seals

Second walk - Depart 11:15pm, return about 12:30am 6/8 I went to sleep, Aaron did the rest of walks. AT end of second walk 15 new turtles had been cataloged - perhaps 2-3 not done due to being closed to seals. Note a Number of Small CCL nesters

need class size Annual analysis

8 JUNE 01

FRIDAY

Up about 8am for radio call to Tony. Went back to sleep until about 10am. Light winds - Sunny. ~9am saw 4-5 males with Copulating pair right close to shore in front of tent.

called LM

AARON picked up ~ 6:15PM - now ALONE

EAST

8 JUNE 01

Friday

9 JUNE 01

Saturday

Slept

Next 136S

10 JUNE

Sunday

8 AM

6/10/01

6/10

6/10/01

6/11

EAST — Excellent weather - Light winds

8 June 01 Slept ~ 645pm - 830pm, first walk/patrol around Friday Island 915pm - Didn't get back until 1AM!
Two more walks - 3 total back at ~ 545am
9 June 01 Radio call at ~ 830am to Temple "Shark Tower"
Saturday Bob Braun and Brad on Trig watching for Galapagos sharks biting/taking seals.
Wrote up notes/data. Videod in the pm again. Brenda, Allen Ligon and Sean brought the new hand-held VHF for me. Did seal survey - are mothers and near-to-wean pup on island. Maybe 6 others at night.
Slept ~ 630pm - 830pm. Night 2 alone walk started at 915pm clockwise again. Back ~ 11PM. Out 3 more times during the night. MAZU print photos olympus and Pentax, using 87S (on hard point) and 151S Area 1
Next 136S
10 June Sunday 8AM At ~ 6am cut fish line strangulating RFF of 114S. Videod 111S digging w/ hind flippers and 147S
Stayed in body pit for ~ 4 hours at least.
Also video 9am 147S still lying in body pit after successful nesting - Decided to move her gut - sun getting hot. She then went back rapidly.
Walked around the island video - including ghost crab area 16/17. Slept from 10 AM - 2 PM. Shower/bath in ocean and freshwater rinse. Green Prell original formula works excellent.
45-50cm Buried 3 dataloggers TIDBITS #383506
6/10/01 1 - Tied to Iron stake by Brown mooring A7
6/10 1 # 381-367 Tied to Iron stake Center of island A6/A9
6/10/01 1 # Cement pad "Tomb" Tied to corner Iron
6/11 1 - Tied to Cement block A17 #381 366

— TUTU MAY BE HERE —

10 JUNE 2001 STATOS
SUNDAY Phone call to Peter and URSULA, Ayd
LIN ~ 415pm. Slight South surf.
Very light WINDS — HOT!
Weed Walked to SEP/NEP Videoed.
Read A651 on distal LFF of female-basker
"RFL missing" = RFF amputated then sealed
∴ Able to migrate to here w/ one FF
Slept ~ 630pm — 830pm.
out ~ 930pm.
New MOTO TOOLS this night = 1555-1685
= 14 only
Encountered Turtle, new Moto 1625 sat/out
Photos w/ Pentax 3-#1s LFF, 4-#2s LFF,
1-#3 Left jaw CCL 100cm
Jaw tumor is scabbed but smooth. Collected
2 #2s 1-#1 excised. 1/2 of
two to Jim Casey for Frozen PCR. One whole
and 2 halves to Terry Spraker in
10% formalin. All of these tumors have
surface of "coral stain." 4 eggs frozen
for PCR also.

MOTO TOOL 1625 TM424D712942LH

The Tutu Encountered new Moto 1595 CCL 105cm
MAY Area 5-6 U692 RH, A749 LFL
be Amazingly RFL tag loss, Nested
Tame LH 424E016932
Medium photos RH 424F053D47
Many photos

LH 424E016932

RH 424F053D47

June 11, 01
Monday

June 11, 01, 1595 back again Area 4' More photos off
Monday turn pentax w/ me - + bring the photo
night Lots of Stars! Apparently she didn't lay eggs
before Night of 6/10, Though I thought she did.
Determined did on this night for photos.
Encountered area 16, 485 CCL 98.5
Small #2 dried nasal skin appearance - bypass
whole MR - 1/2 frozen 1/2 formalin. NO PIT AS YET.

Turtle 535 Area 1 uncovered old data
loggers - sealed in plastic "E3" Hobo onset from 1997 season

The next morning I found 7 eggs at surface
4 are area 2 another and one another. All
marked all known for Jim Casey xrays.
Area 1925 CC40X small patch off fiberglass cloth! Photos
LH 4077472222; RH 4077347D07

12 June 01
Tuesday

JUNE 13, 81 Wednesday
video ~9AM Saw 2 large 8-10' Galapagos Sharks patrolling close to shore in front of Camp. ~2PM Video of basking Turtles SEP NEP. Saw Turtle, J/625 Jaw tumor that had been biopsied - Video of BASKing. Cleaned tent gear packed. Video of reading of Harry's eloque and poem on East. Cromwell arrived to off load some gear and two shark students of Brad & Chris Towe. At ~5pm Allen Ligon and Aaron arrived to take me off - leave Aaron on island. Depart ~530pm - great weather, light wind smooth trip back to Tem. Unpacked, cleaned, repacked all gear. Shower Dinner and went to bed dead tired. Rain during the night, but I didn't hear it. Called Lyn on STRATOS

JUNE 14, 81 Thursday
Up about 730AM. Photos/video by "Hank" FWS Boston Whaler I used in the 1970's.

Depart Tem w/Bob Braun - Copilot MAC 1115AM

Bob Stone

MAC Lands 5th flight
ERIN Coleman copilot
ERIN Green FWS volunteer

**Colorado Veterinary Diagnostic Laboratory**
**College of Veterinary Medicine and Biomedical Sciences**
**Colorado State University, Fort Collins, CO 80523**
**Phone: 970-491-1281 Fax: 970-491-0320**

**DL#:** 012-14380
**Date:** 8/7/01

**Vet/Clinic:** George Balazs/National Marine Fisheries Service
**Owner:** National Marine Fisheries Service
**Animal ID:** 162S, 148S **Date Specimen Taken:** NA
**Species:** Green Sea Turtle **Breed:** NA **Age:** NA **Sex:** F

**History:** Two adult female green sea turtles were found on French Frigate Shoals that had tumors. Animal #162S had three tumors which were biopsied and Animal #148S had one tumor that was biopsied.

**DIAGNOSIS:**
Animal #162S - Fibropapillomas x 3.
Animal #148S - Fibropapilloma.

**REMARKS:** Four fibropapillomas were examined from two adult nesting female green sea turtles. Turtle #162S had at least 3 tumors that were biopsied. Animal #148S had 1 tumor that was biopsied. These tumors in both of these turtles were very similar in that they had very little evidence of pseudoepitheliomatous hyperplasia of the epidermis, which is a relatively prominent feature of tumors in younger turtles. Also, the degree of cellularity of the fibroblastic portion of the tumors was extremely low in these tumors compared to the more actively growing tumors in the younger turtles. In my opinion, these tumors were probably either static or undergoing slow resolution or regression. These tumors did not appear to be actively growing tumors. The loss of the extensive degree of pseudoepitheliomatous hyperplasia and lower cellular density of the fibroblastic portion of the tumor all suggest that these tumors are either static or slowly regressing.

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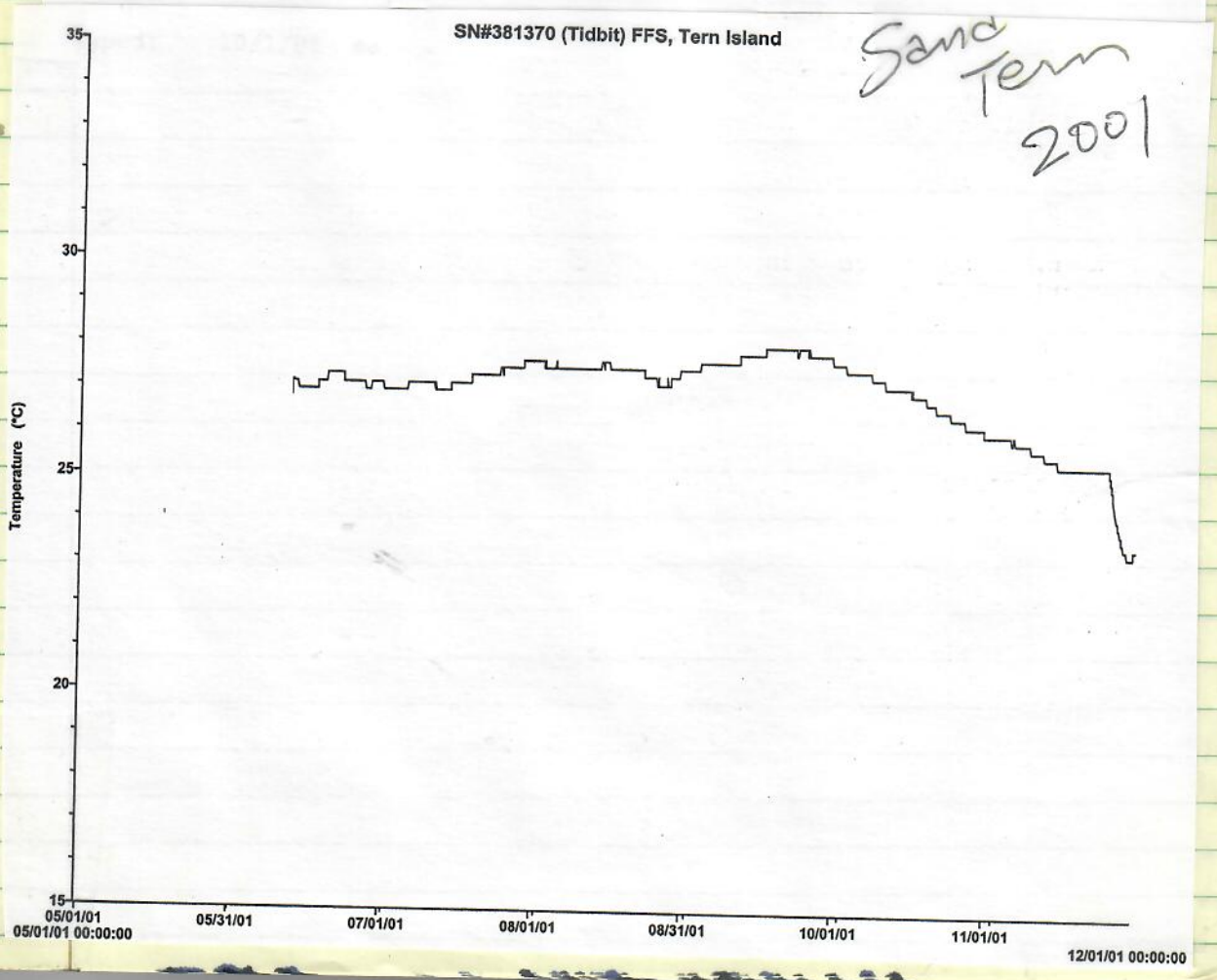
**HISTOPATHOLOGY:** Slides 1 through 3 - These three tumors are from Turtle #162S that were collected on 6/10/01. These three tumors are all relatively similar. Tumor #1, however, did have an extensive amount of necrosis on the surface and this tumor had one mitotic figure within the epidermis. The tumor itself had extremely low cellularity but was relatively dense as typical of fibropapillomas. There was a mild degree of lymphocytic cuffing of vessels within the tumors, however, there was an increased number of vessels or neovascularization within the tumors. It is suspected that these tumors were not at least actively growing tumors but were either static or slowly regressing.

DL. 012-14380
Page 2

Slides 4 and 5 - Animal #148S had one tumor. This tumor was bisected and examined on Slides 4 and 5. This tumor was nearly identical to the tumors on Animal #162S except there was no evidence of necrosis of the epidermis on this particular tumor. The tumor mass was also extremely low cellularity but was composed of dense collagen. There were a few vessels within the tumor that were cuffed with lymphocytes and there also appeared to be a slightly increased number of vessels within the tumor.

Terry R. Spraker, DVM/PhD DACVP



BALAUS

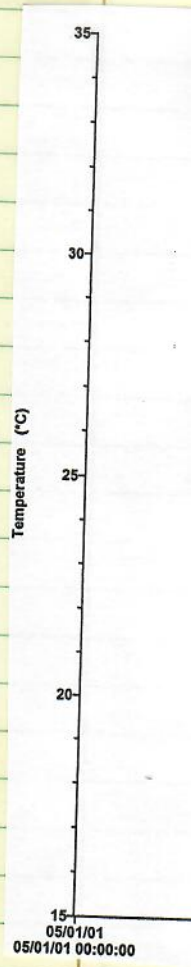
DAILY TOTALS (PM-AM) FOR ADULT FEMALE GREEN TURTLES NESTING AT EAST Is. FRENCH FRIGATE SHOALS

2001

NMFS, HONOLULU LAB
Marine Turtle Research
2570 Dole Street
Honolulu, HI 96822-2396

RETURN

| DATE | TOTAL NO. TURTLES UP | NO. OF NEW TURTLES IDed | NUMBER OF NESTS N/P/M | YOUR NAME | COMMENTS |
|---|---|---|---|---|---|
| 6-4 | 10 | 10 | ØN/~~1~~ØP/ØM | AD | 1st night training Matt. - not a full night |
| 6-5 | 21 | 18 | 1N/2P/ØM | AD | 2nd ~~Ø~~Night training- " |
| 6-6 | 28 | 19 | 5N/3P/6M | AD | 1st full night |
| 6-7 | 25 | 21 | 2N/1P/5M | AD | George + Myself on walks |
| 6-8 | ~~40~~37 | 28 | 2N/ØP/9M | GB | 1ST NIGHT GB ALONE. Clear skies - MILD WINDS |
| 6-9 | 32 | 19 | 6N/ØP/ØM | GB | |
| 6-10 | 30 | 14 | 10N/ØP/1M | GB | |
| 6-11 | 36 | 24 | 9N/ØP/ØM | GB | |
| 6-12 | 36 | 19 | 12N/ØP/ØM | GB | |
| 6-13 | 20 | 8 | 1N/5P/1M | AD | not a full night, readjusting (sorry) |
| 6-14 | 27 | 18 | 3N/1P/1M | AD | ok, back in the saddle again! |
| 6-15 | 30 | 16 | 3N/3P/~~Ø~~2M | AD | moons getting smaller and later, miss the light |
| 6-16 | 35 | 15 | 3N/ØP/5M | AD | getting 2nd nesters |
| 6-17 | 37 | 4 | 5N/5P/3M | AD | rainy and windy |
| 6-18 | 28 | .2 | 3N/2P/3M | AD | more seals than usual esp. weeners. few squals |
| 6-19 | 32 | 3 | 2N/3P/3M | AD | lots of squals |
| 6-20 | 41 | 6 | 4N/1P/6M | AD | kinda big night / very ti still plenty seals / need re: |
| 6-21 | | | | | night off |
| 6-22 | | | | | night off |
| 6-23 | 39 | 7 | 2N/ØP/6M | AD | stormy/heavy rains + wind about 3 complete walks tota |
| 6-24 | 43 | 9 | 2N, ØP, 2M | AD | more rain + wind |
| 6-25 | 48 | 4 | 2N, 1P, 6M | AD | here comes the rain again |
| 6-26 | 36 | 4 | 3N, ØP, 2M | AD | mellow night, 1st third nester |
| 6-27 | 40 | 2 | 3N, 4P, 3M | AD | |
| 6-28 | 26 | Ø | 1N, ØP, ØM | AD | squals through the night |
| 6-29 | 29 | 1 | ØN, ØP, 4M | AD | |
| 6-30 | 28 | 4 | 1N, 3P, 3M | AD | |
| 7-1 | 23 | Ø | ØN, Ø, M [illegible] | AD | got sick, not a full night |



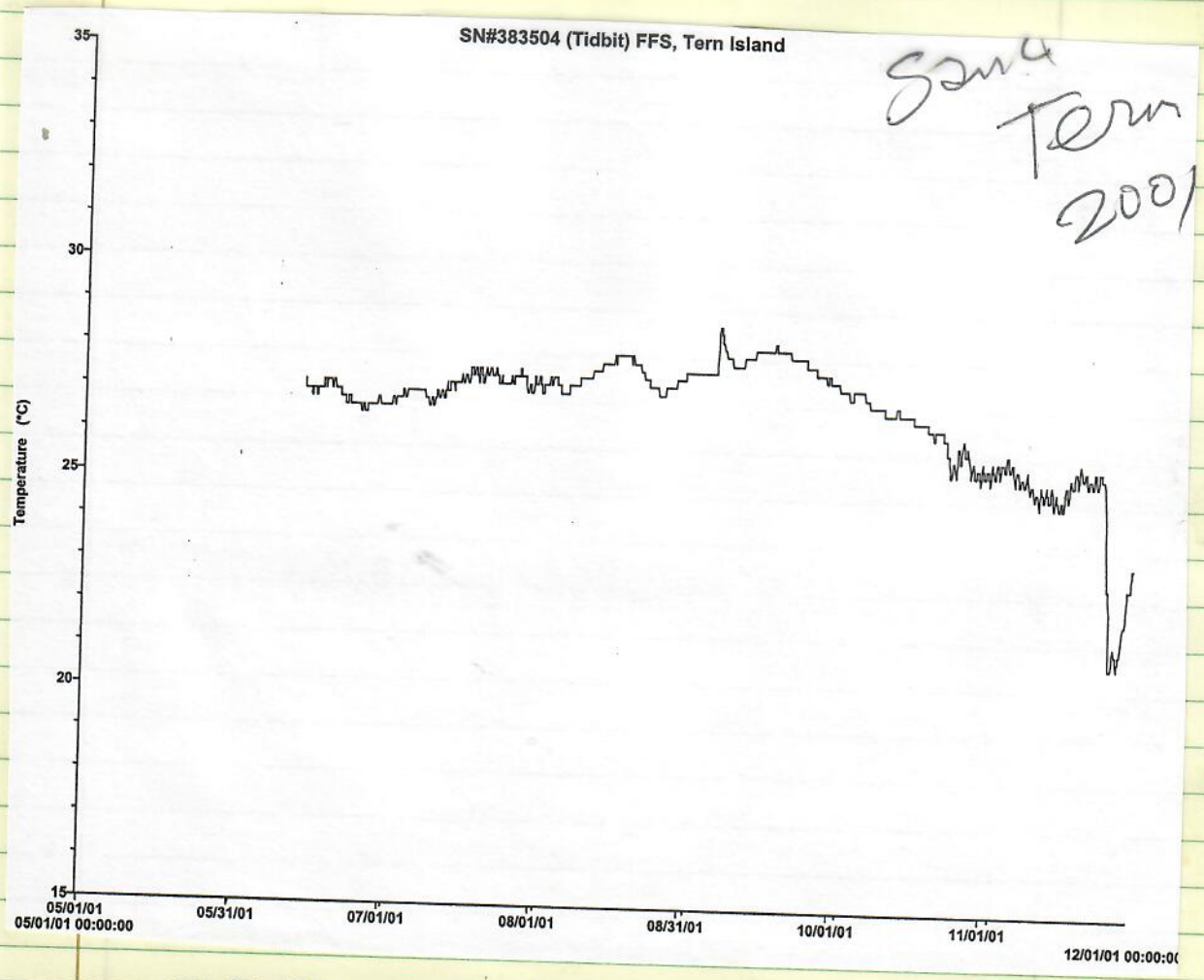
BALLAS 2001

DAILY TOTALS (PM-AM) FOR ADULT FEMALE GREEN TURTLES NESTING AT EAST Is. FRENCH FRIGATE SHOALS

NMFS, HONOLULU LAB
Marine Turtle Research
2570 Dole Street
Honolulu, HI 96822-2396

RETURN

| DATE | TOTAL NO. TURTLES UP | NO. OF NEW TURTLES IDed | NUMBER OF NESTS N/P/M | YOUR NAME | COMMENTS |
|---|---|---|---|---|---|
| 7-2 | 39 | 6 | 3N, 4P, 1M | AD | |
| 7-3 | 45 | 3 | 4N, 4P, 4M | AD | |
| 7-4 | | | | | day off |
| 7-5 | 47 | 7 | 3N, 3P, 3M | Matt | |
| 7-6 | 41 | 2 | 3N, 5P, 3M | Matt | |
| 7-7 | 40 | 2 | 0N, 4P, 9M | Matt | |
| | | | | | |
| | | | | | |




Sand Tern 2001

Marine Turtle Research
NMFS HONOLULU LAB
2570 Dole Street
Honolulu, HI 96822-2396

# FY 2001 - Fourth Quarter Milestone Report

**Submitted by:** Jerry Wetherall and George Balazs, Honolulu Laboratory

**Title of Accomplishment/Milestone:** Determine number of green turtles nesting at East Island, French Frigate Shoals, during the 2001 nesting season

**Current Status:** Completed.

**Background Information:** The number of green turtles nesting at East Island, French Frigate Shoals, in the Northwestern Hawaiian Islands has been estimated annually since 1973. The estimate is based on a partial-season survey of nesting activity conducted collaboratively by the Honolulu Laboratory and the U.S. Fish and Wildlife Service. Survey statistics are extrapolated by the Honolulu Laboratory to estimate the total number of females nesting during the survey year. Extrapolation procedures are based on statistical methods developed by the Laboratory during a series of saturation surveys conducted from 1988-92. The estimates of nesting activity at East Island are used to provide an index of abundance for the Hawaiian green turtle population and to monitor population recovery.

**Purpose of Activity:** Provide quantitative basis for monitoring the abundance of the Hawaiian green turtle population in support of the Recovery Plan for U.S. Pacific Populations of the Green Turtle.

**Description of Accomplishment and Significant Results:** The survey was conducted for 31 nights during the period 4 June - 7 July 2001. A total of 1,029 nesting emergences were observed during the survey, involving 295 individual nesters identified using PIT tags. Based on models of emergence patterns developed during the saturation surveys, the probability that a member of the year's nesting population would have emerged at least once during the 31 nights of surveying and be identified in the census is about 0.94. Thus, the season's total nesting population is estimated as 295/0.94 = 314 nesters, with a coefficient of variation of 2%. This is slightly lower than last year's estimate of 353 nesters.

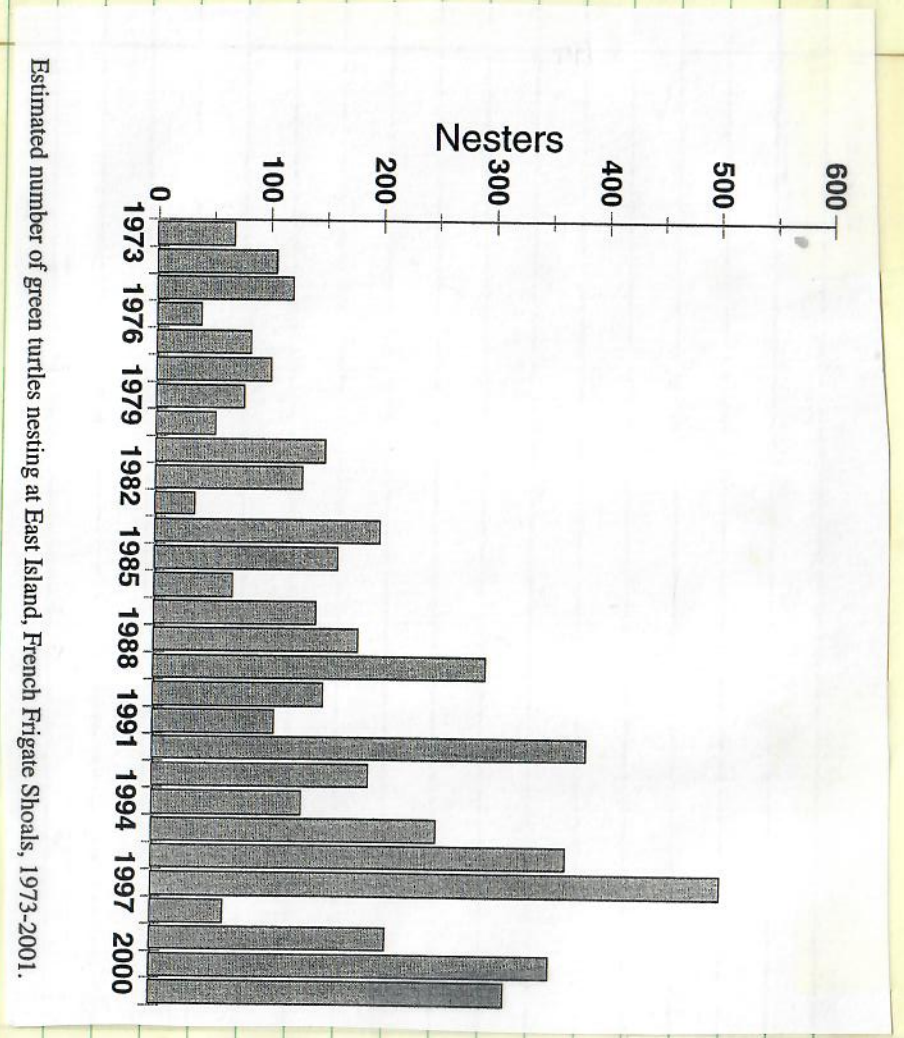
**Significance of Accomplishment:** The results extend the time series of East Island green turtle nesting population estimates to 29 years, providing a sound basis for monitoring recovery.

**Key Contacts:** Jerry Wetherall (808) 983-5386; George Balazs (808) 983-5733

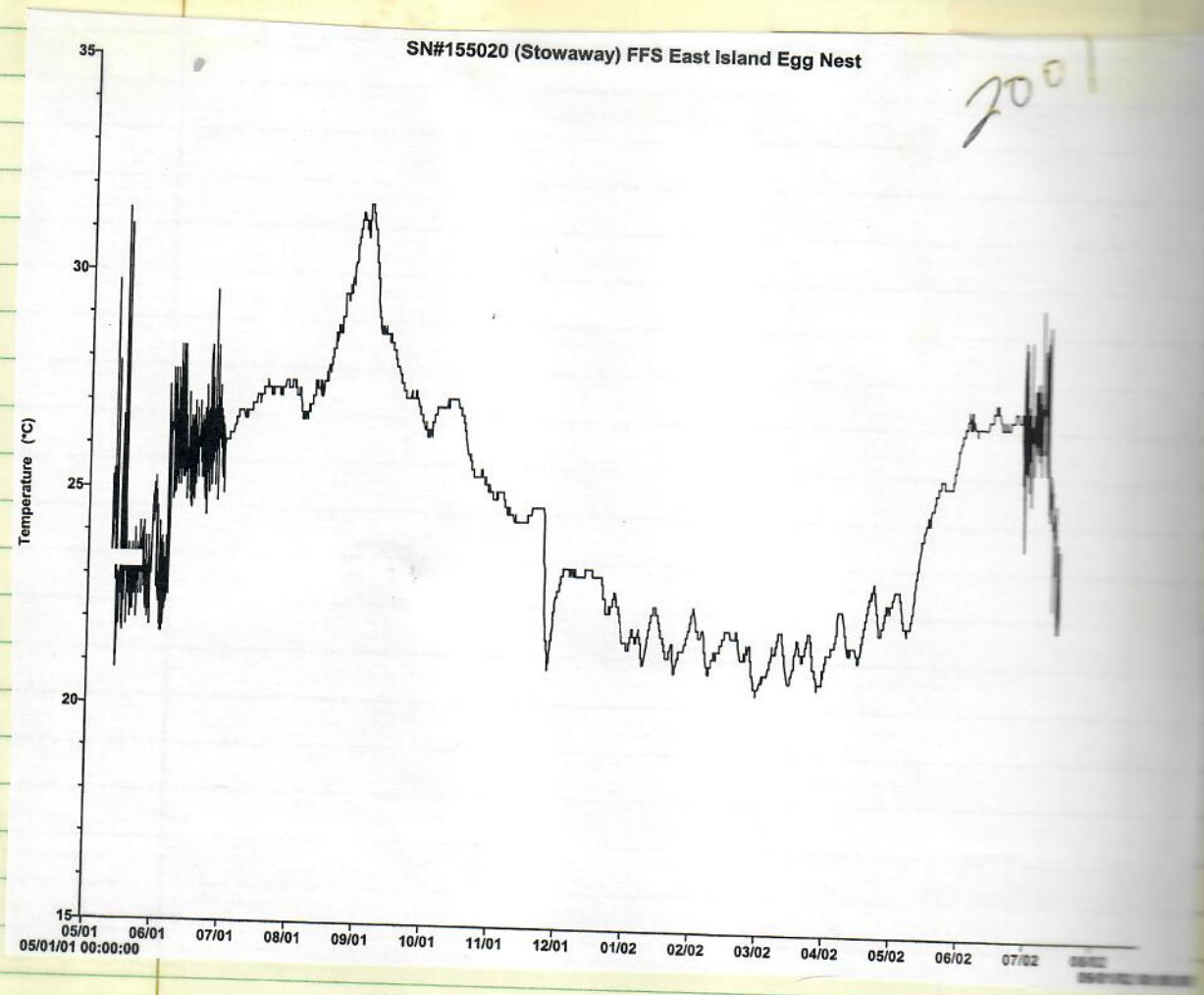
Estimated number of green turtles nestin

| Year | Survey nights | Estimated nesters |
|---|---|---|
| 1973 | 43 | 67 |
| 1974 | 59 | 105 |
| 1975 | 30 | 120 |
| 1976 | 13 | 39 |
| 1977 | 9 | 82 |
| 1978 | 11 | 101 |
| 1979 | 13 | 77 |
| 1980 | 20 | 52 |
| 1981 | 23 | 149 |
| 1982 | 19 | 130 |
| 1983 | 17 | 35 |
| 1984 | 20 | 199 |
| 1985 | 18 | 162 |
| 1986 | 29 | 69 |
| 1987 | 26 | 143 |
| 1988 | 101 | 180 |
| 1989 | 143 | 294 |
| 1990 | 133 | 150 |
| 1991 | 119 | 107 |
| 1992 | 129 | 384 |
| 1993 | 31 | 191 |
| 1994 | 26 | 132 |
| 1995 | 31 | 252 |
| 1996 | 31 | 367 |
| 1997 | 33 | 504 |
| 1998 | 32 | 64 |
| 1999 | 31 | 209 |
| 2000 | 33 | 353 |
| 2001 | 31 | 314 |

JAW
27 August 2001




Estimated number of green turtles nesting at East Island, French Frigate Shoals, 1973-2001.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2001
Temperature (°C)
35
30
25
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15
05/01
06/01
07/01
08/01
09/01
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07/02
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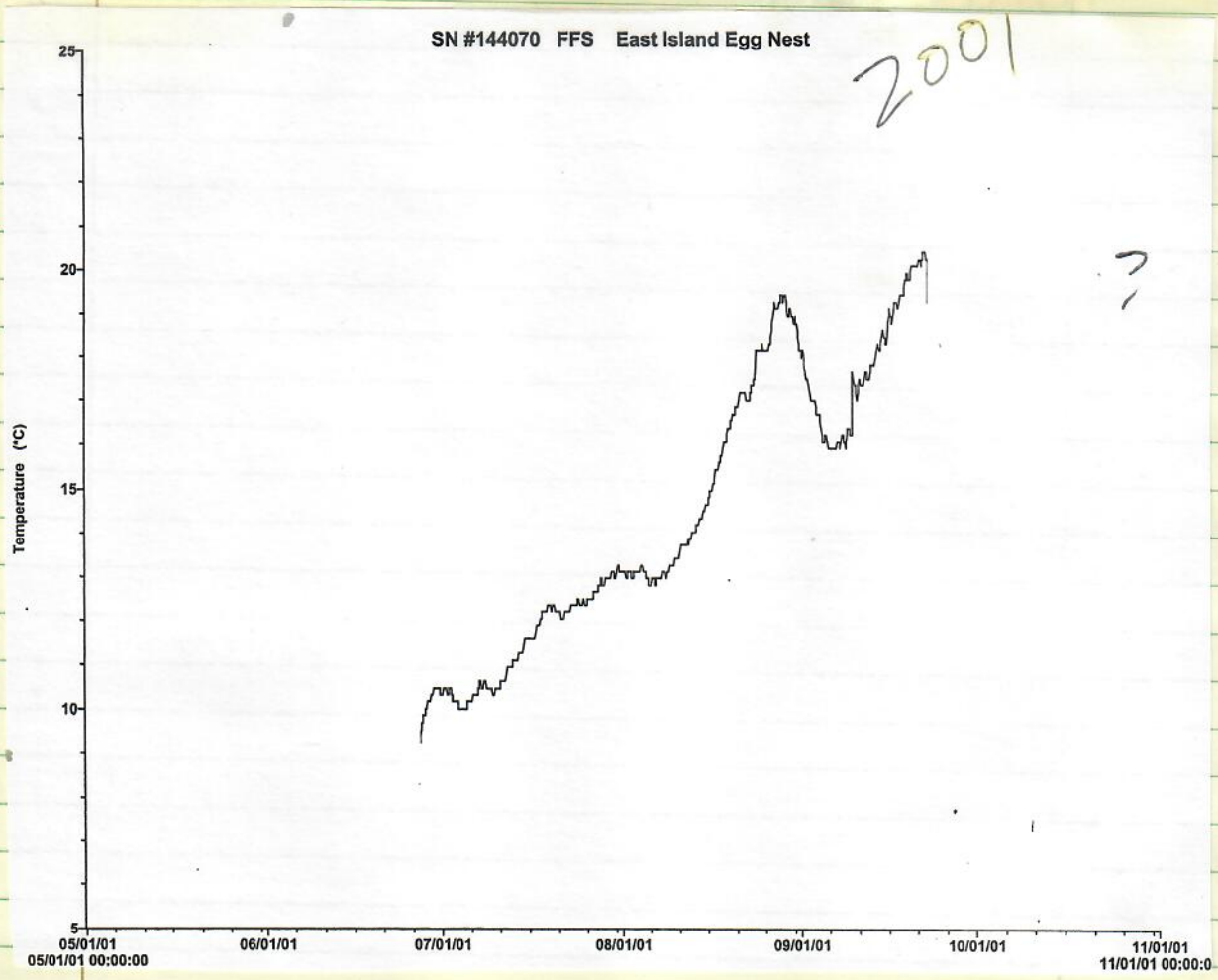
SN #144070 FFS East Island Egg Nest
2001
Temperature (°C)
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20
15
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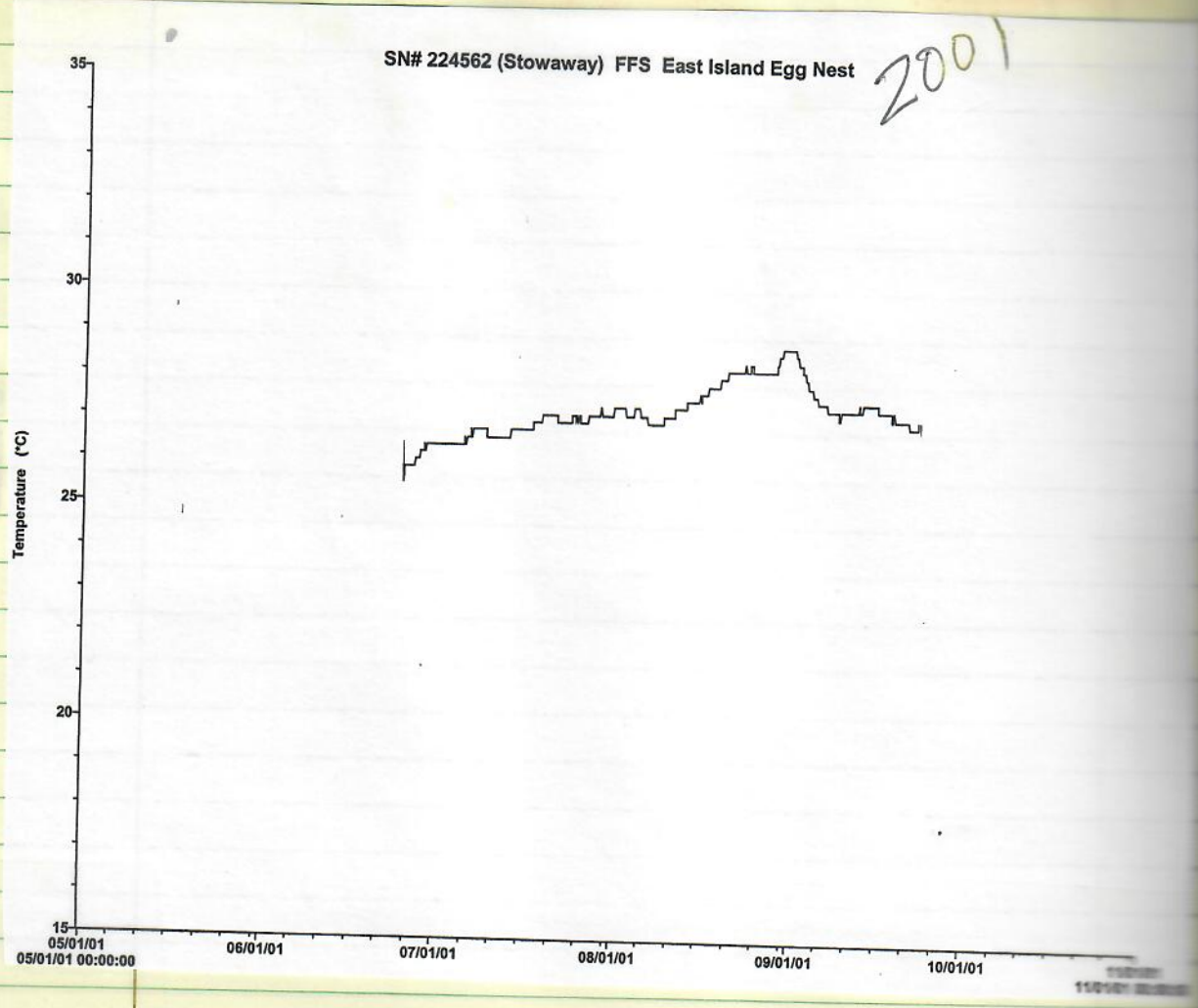
11/01/01 00:00:0


SN# 224562 (Stowaway) FFS East Island Egg Nest
2001
Temperature (°C)
35
30
25
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05/01/01
05/01/01 00:00:00
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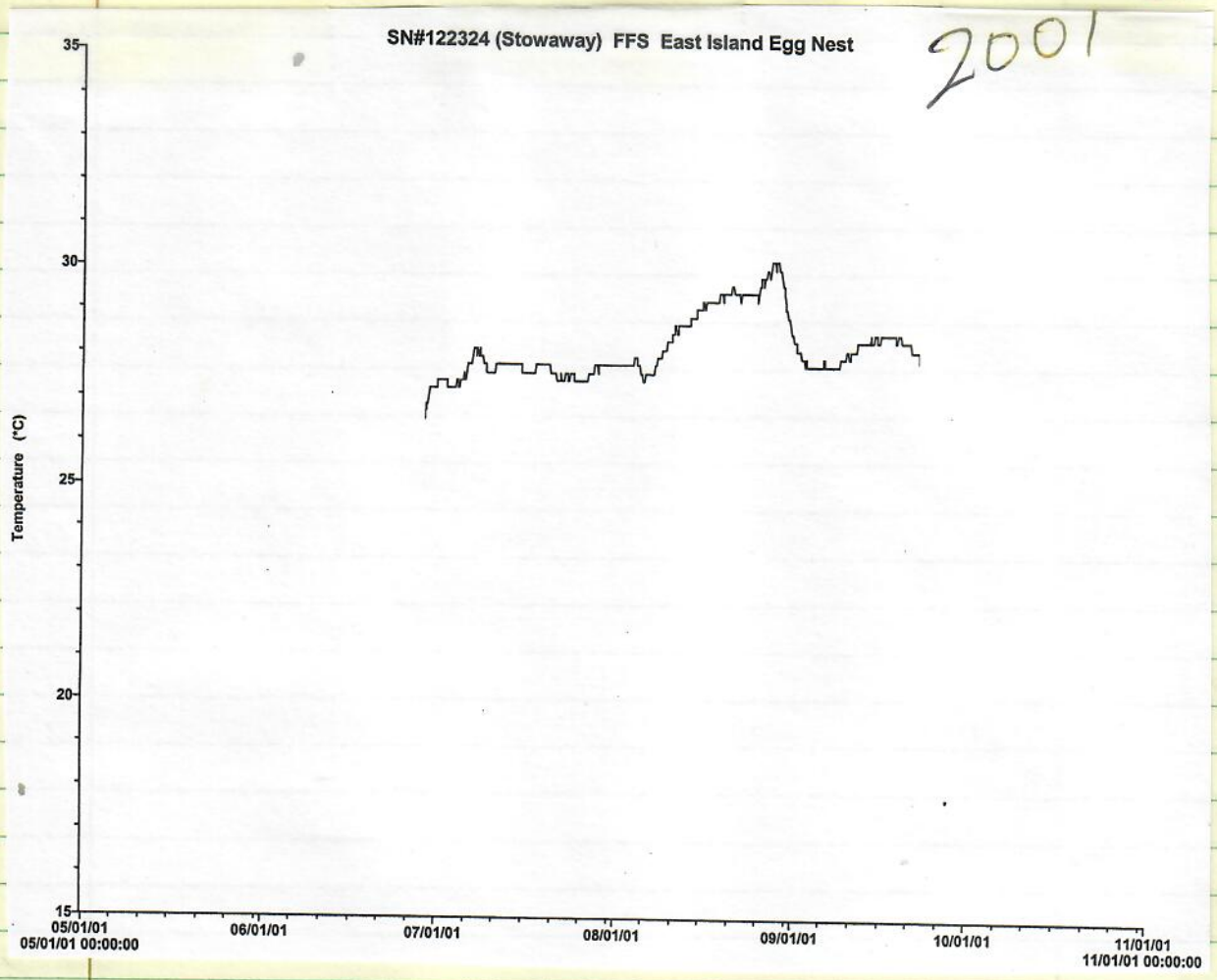
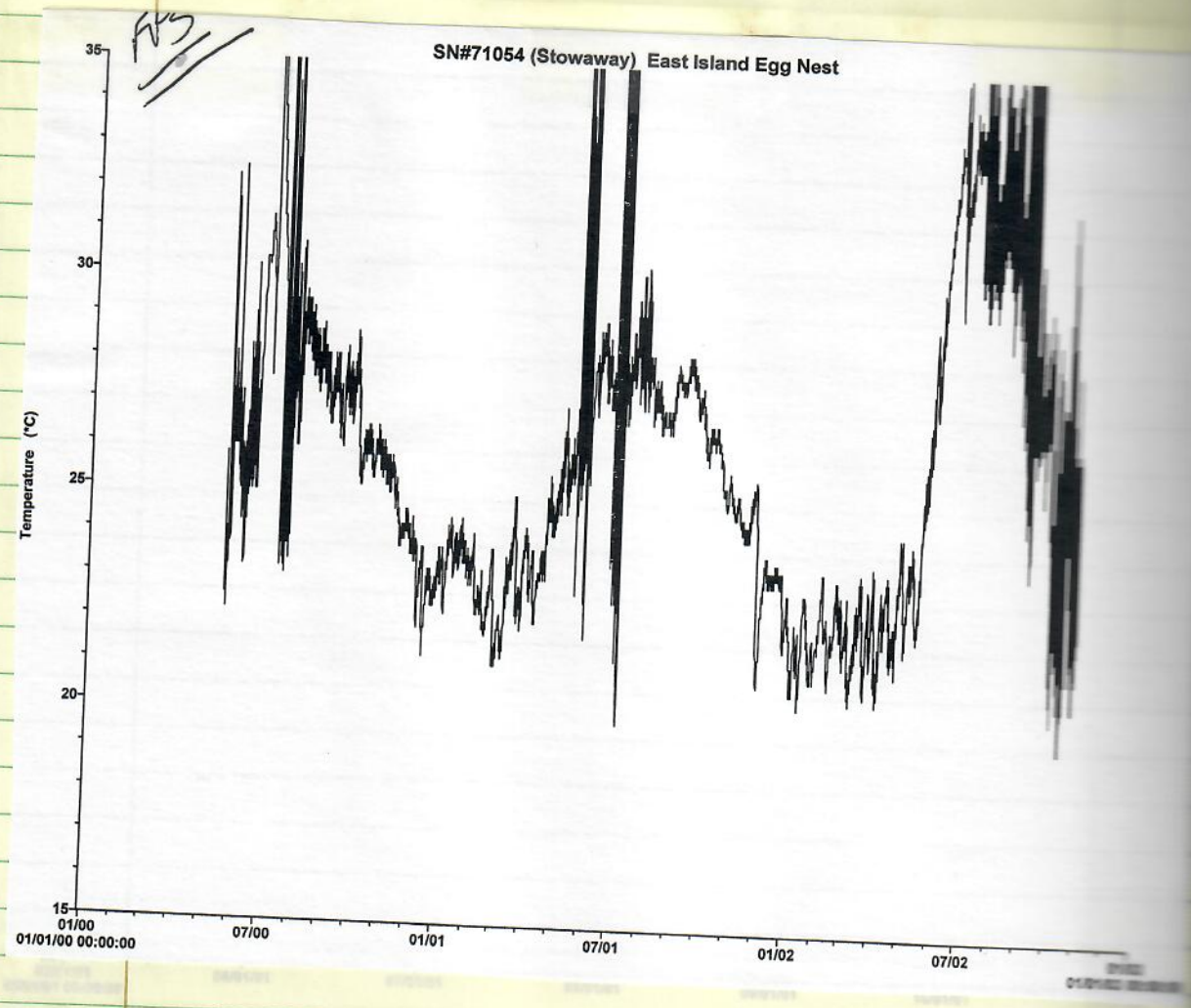
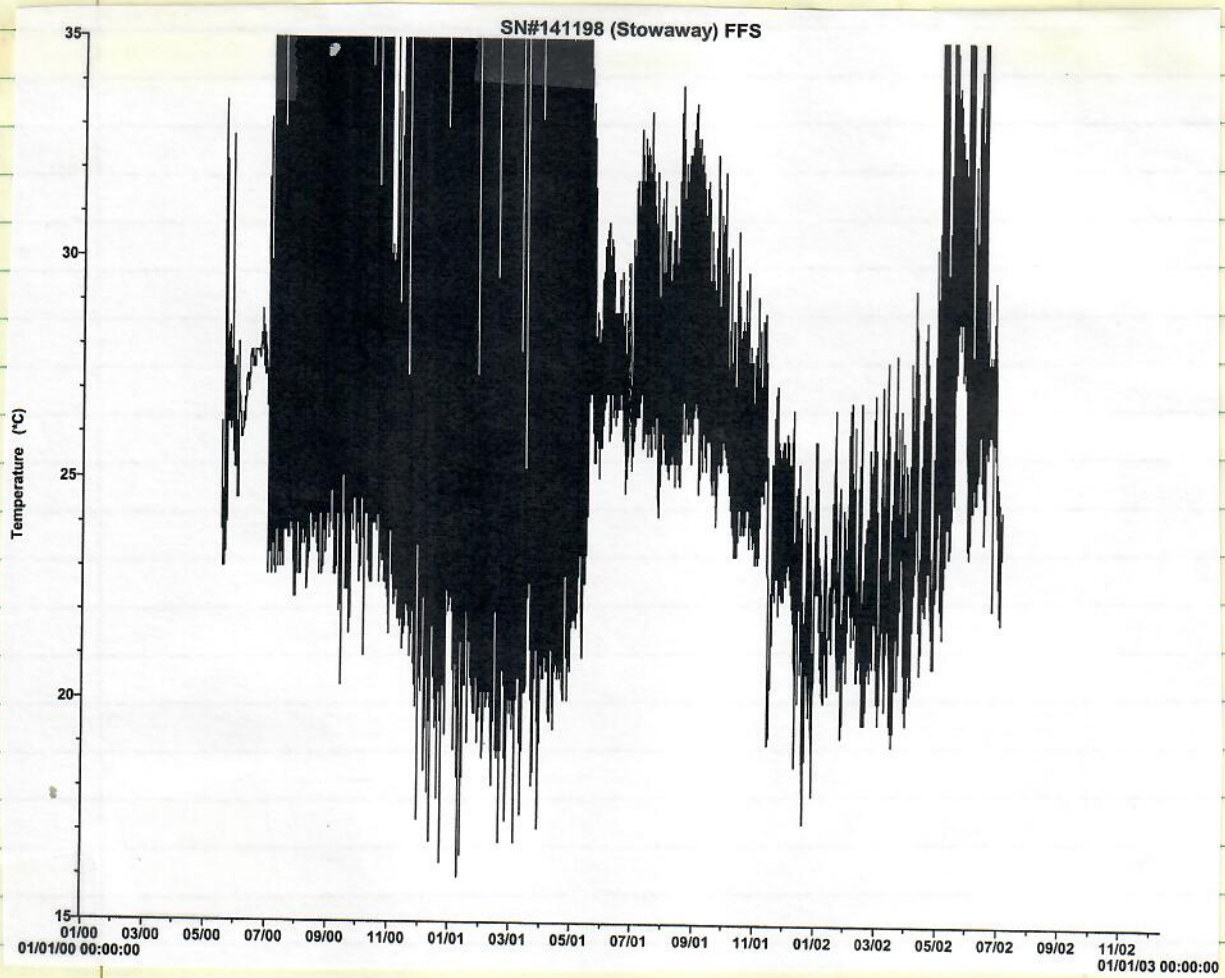
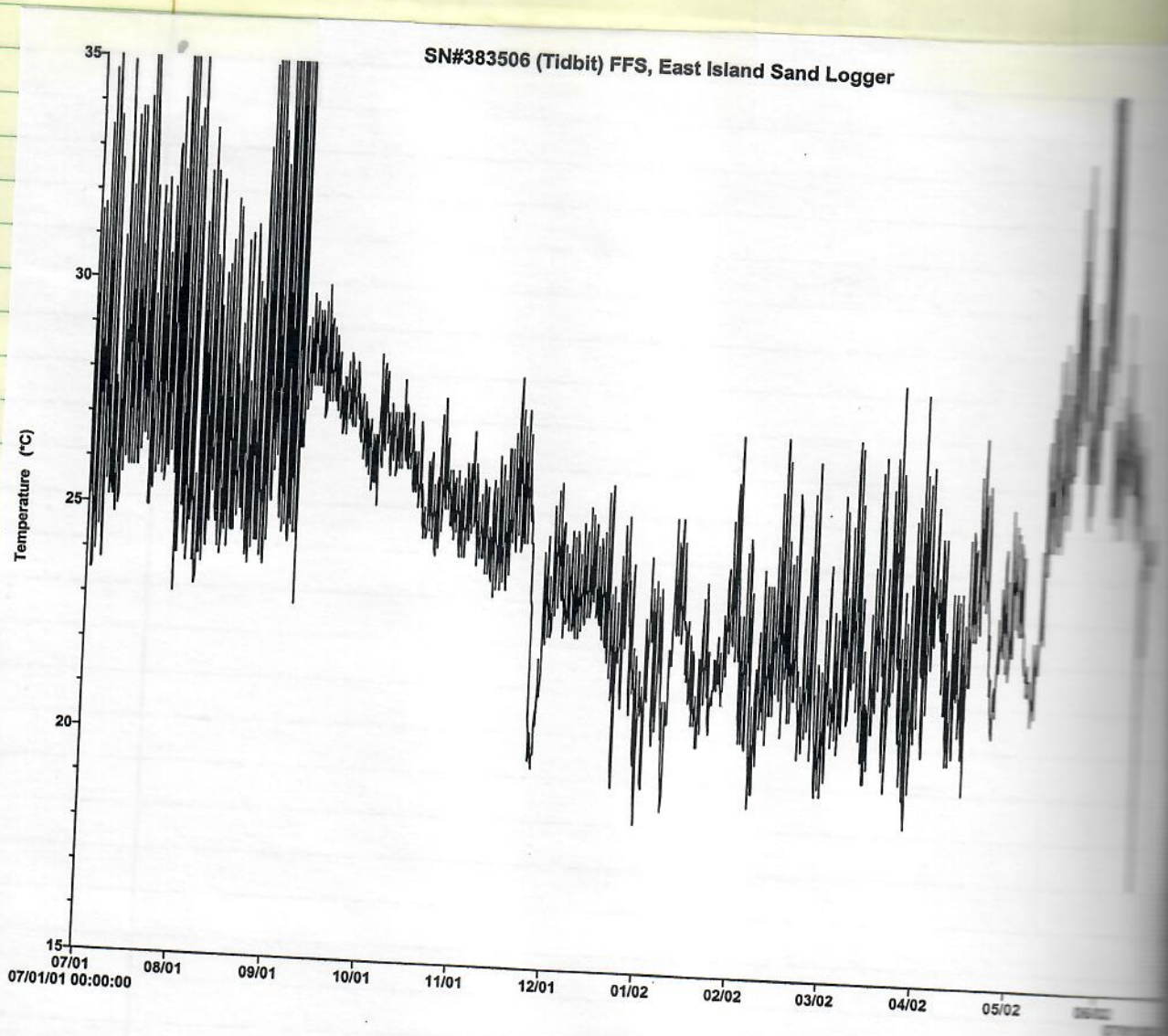
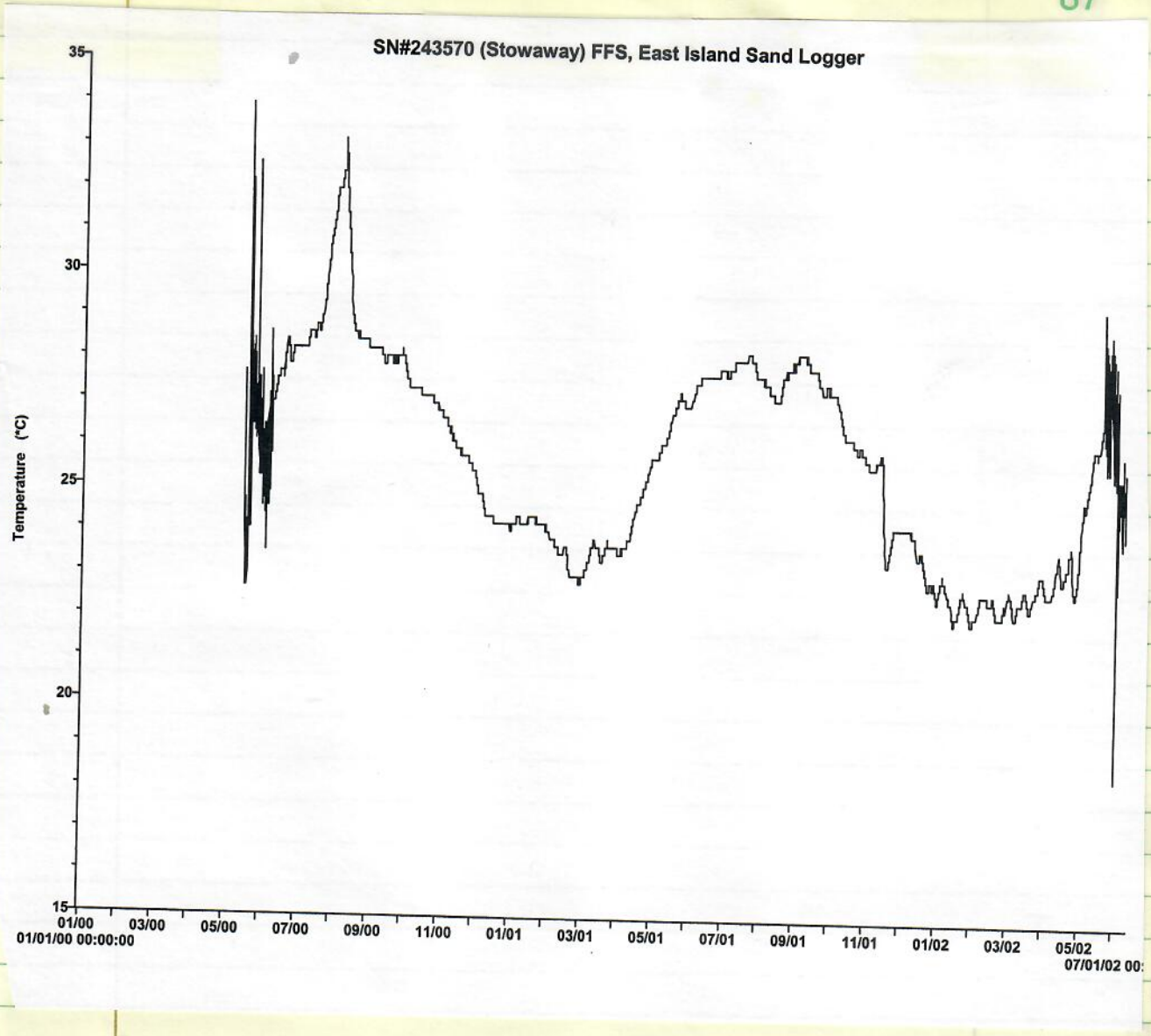
09/01/01
10/01/01

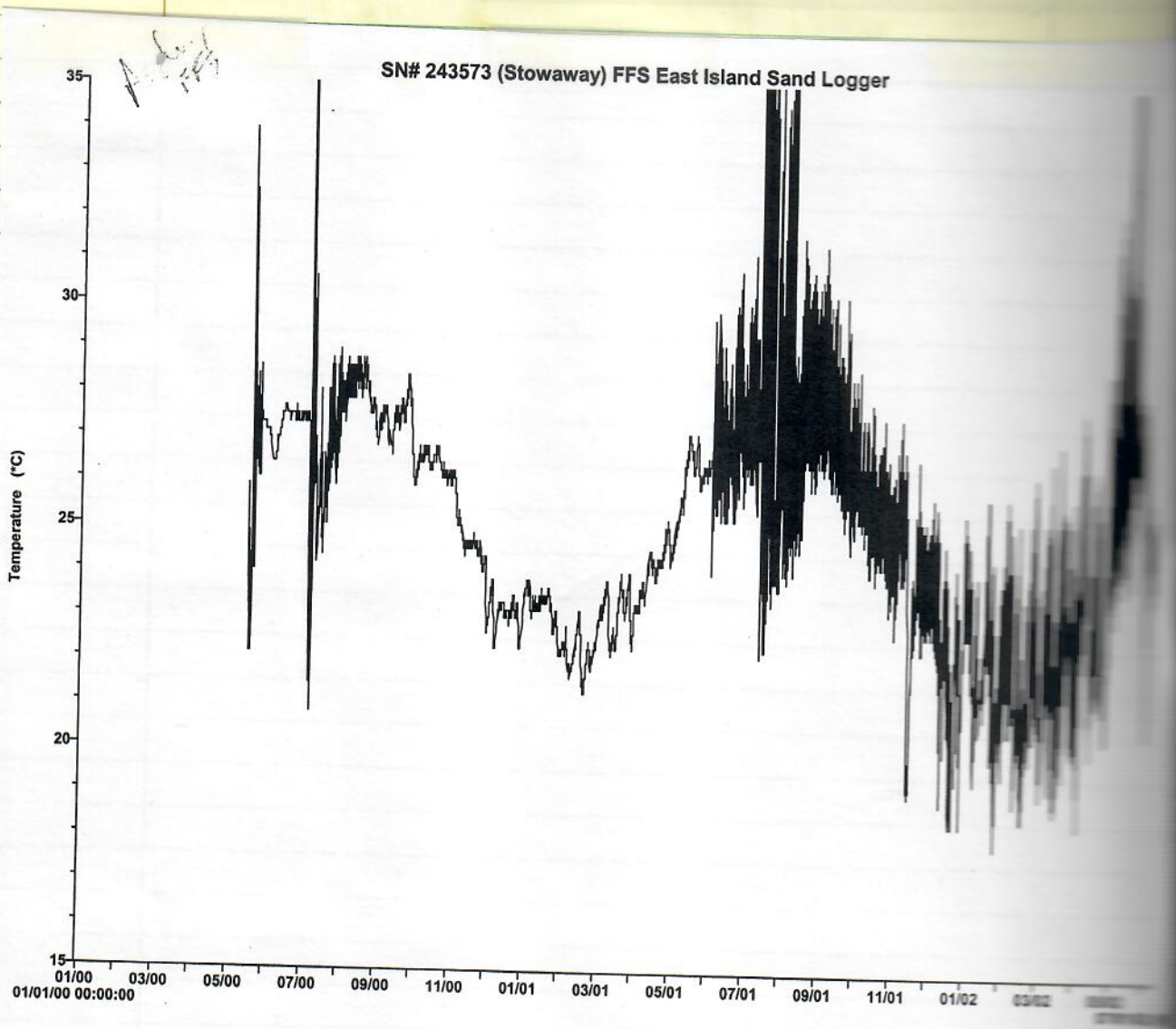

SN#122324 (Stowaway) FFS East Island Egg Nest
2001
Temperature (°C)
35
30
25
20
15
05/01/01
05/01/01 00:00:00
06/01/01
07/01/01
08/01/01
09/01/01
10/01/01
11/01/01
11/01/01 00:00:00

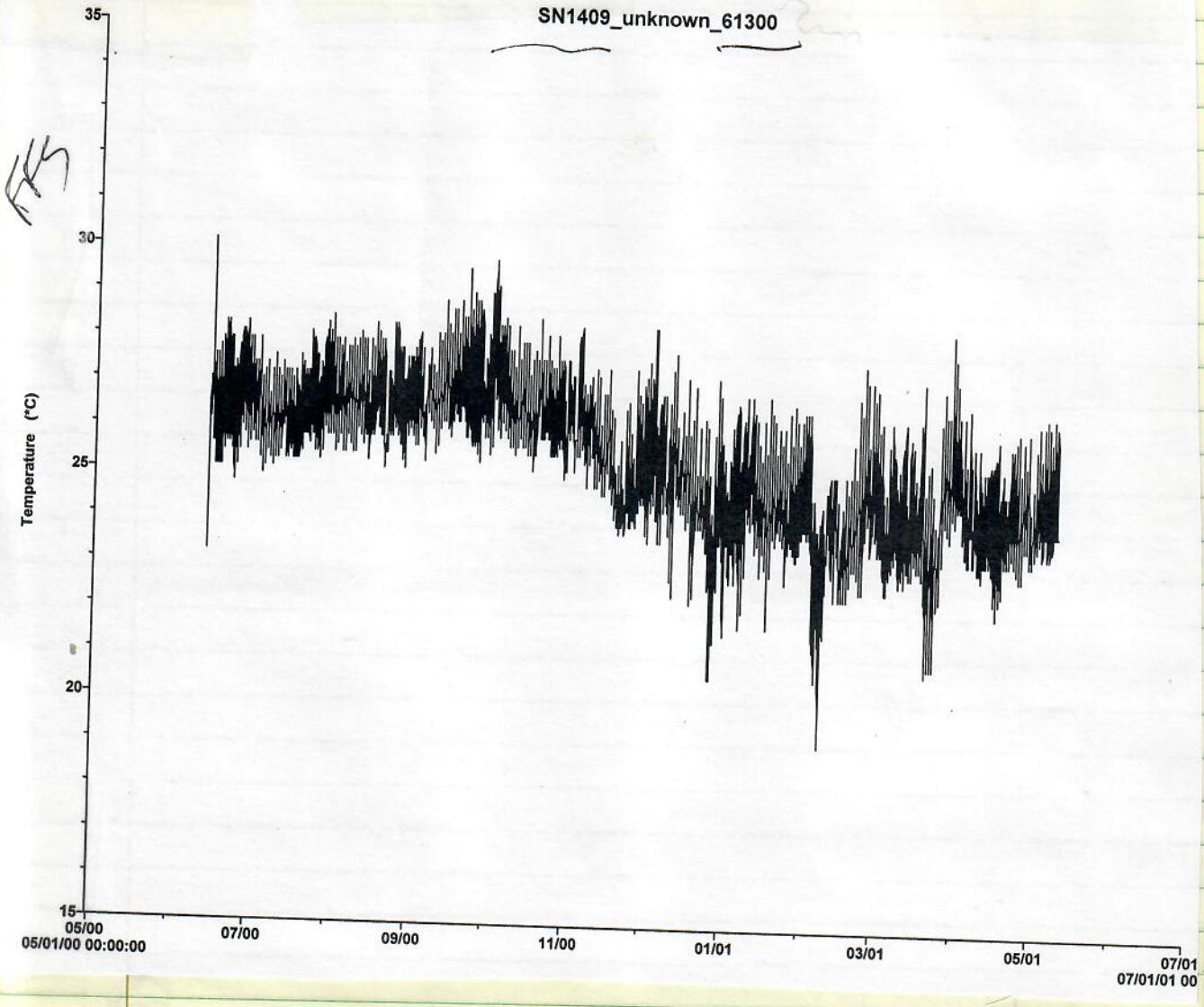

SN#71054 (Stowaway) East Island Egg Nest
Temperature (°C)
35
30
25
20
15
01/00
01/01/00 00:00:00
07/00
01/01
07/01
01/02
07/02


SN#141198 (Stowaway) FFS
Temperature (°C)
35
30
25
20
15
01/00
03/00
05/00
07/00
09/00
11/00
01/01
03/01
05/01
07/01
09/01
11/01
01/02
03/02
05/02
07/02
09/02
11/02
01/01/00 00:00:00
01/01/03 00:00:00


SN#383506 (Tidbit) FFS, East Island Sand Logger
Temperature (°C)
35
30
25
20
15
07/01
07/01/01 00:00:00
08/01
09/01
10/01
11/01
12/01
01/02
02/02
03/02
04/02
05/02


SN#243570 (Stowaway) FFS, East Island Sand Logger
Temperature (°C)
35
30
25
20
15
01/00
03/00
05/00
07/00
09/00
11/00
01/01
03/01
05/01
07/01
09/01
11/01
01/02
03/02
05/02
01/01/00 00:00:00
07/01/02 00:


SN# 243573 (Stowaway) FFS East Island Sand Logger
Temperature (°C)
35
30
25
20
15
01/00
01/01/00 00:00:00
03/00
05/00
07/00
09/00
11/00
01/01
03/01
05/01
07/01
09/01
11/01
01/02
03/02


SN1409_unknown_61300
Temperature (°C)
35
30
25
20
15
05/00
05/01/00 00:00:00
07/00
09/00
11/00
01/01
03/01
05/01
07/01
07/01/01 00

Date: Tue, 19 Jun 2001 07:12:47 -0700
From: Denise Parker <Denise.Parker@noaa.gov>
To: George H. Balazs <gbalazs@honlab.nmfs.hawaii.edu>
Subject: Re: 24192?

24192 - deployed 9/2/98 on East. At that time she was 99.7 cm CCL and they gave her a mototool D100 (I don't have her flipper tags on my record), she settled in an area off Kahului, Maui before her transmitter stopped 5/99.

The Argos ID that stopped 1/3 of way to Main Is was 24197 deployed in 1997, w/ tags 746T to 749T.

"George H. Balazs" wrote:
>
> Spent about an hour with her on East while she dug and laid eggs. Only
> reason I knew it was her (a sat tagged turtle) was the dime-size piece
> of cloth and resin on her carapace!
>
> Isn't this the turtle that stopped signals about 1/3 of the way to the
> main islands from FFS?
>
>

**********

"Life on that islet of French Frigate Shoals delighted us all, especially the baby, who crawled and tottered and capsized, to the accompaniment of excited crowing, into the yielding sand. How I wish I could cruise again to that good place, once more to see that clear sky and enjoy that perfect weather! It would add ten years to my life to escape from the red tape that enmeshes us civilized men, to flee from police, tax-collectors, landlords, swindlers, innumerable parasites that suck our blood. None of them infested our world of islands. At French Frigate Shoals, praise God, sharks were fish, not humans."

Captain John Cameron
Spring 1894

6/01 East Bland


Frosted blueberry is my favorite!

92 IQ

# Photo log

6/11 PM 1695 ? PenTAX ○ CCL 92.5 Tumors LH 424F2C4765

6/11 1775 U368, U367 CCL 104 Right shoulder Photo?

6/12 AM 1855 41362BH711 RH - CCL 101 large Barn

6/12 AM 1895 U214 63 Dorsal barns 2 photos Olympus
slashes in head

6/12 1485 CCL 98.5 1 #2 cut off
before & after pictures.

6/12 1665 Tidbit 383507 w/eggs

6/12 1355 & 1325 photo nesty near each other

6/12 1929 Area 1 LH 4077477222 CCL 101
Patch of fiberglass

6/12 PM 1985 2 photos olympus

6/13 AM 2085 olympus photo of 3756 CCL 100.5

6/13 AM Slide photos 6397, 6398 ~~#~~ on 2095

E3 Hobo Recovered This TRIP!

June 11-12, 2001 Deployment of Temperature Loggers Tidbits

Area 7 - Tied to IRON STAKE A short distance east of Existing Crankshaft. #383506

Area 5-12 Loggers Tied to IRonstake -- #381367

" Tombs" Tied to southern eastern corner of southern eastern Pad Area 3 #381-364

Area 1 Cement blocks - #381366

EGGS Area 1 6/12 AM Tidbit #383507 at ½ way egg layers Turtle 1665 - Tied to large orange float.

EGGS ONEP 6/12/01 PM TIDbit #381371 Turtle 1945 CCL 98a #381371

EGGS Area 17 6/13/01 AM TIDbit #381365 w/ eggs of 2085 Tied to Large Blk float. Olympus print photos

EGGS Area 2 6/13/01 AM Tidbit #383500 Egg of Turtle 1925 Tied To Two floats.

4800 ST3 Found on bottom 11/6/02 KBAy GB & DMP

21.48302N
157.83474W

Date: Thu, 07 Nov 2002 11:50:46 -0800
From: Denise Parker <Denise.Parker@noaa.gov>
To: George H. Balazs <gbalazs@honlab.nmfs.hawaii.edu>
Subject: Re: Two items (fwd)

Just have to put it down in print - Transmitter is 4800 old ST-3, deployed East Island FFS 8/6/92, transmitter lasted 5 months to 12/24/92, Turtle Tag U260, went to Kaneohe Bay here is last "good" position we had on turtle (Just curious - Does it match up w/ GPS?). Exciting stuff!!!

```
04800  Date : 05.12.92 06:43:16  LC : 1
       Lat1 : 21.489N  Lon1 : 157.823W  Lat2 : 15.931N  Lon2 : 176.947E
       Nb mes : 005  Nb mes>-120dB : 000  Best level : -127 dB
       Pass duration : 547s   Dist track :  12
       Calcul freq : 401 649933.1 Hz   Altitude :    0 m
             216           37           141          149
              00           00
```

# PIT TAGS N=82 APPLIED BY GHB

8-13 JUNE 2001

TRUTH & BEAUTY & GRACE

PEACE 8-9 JUNE 2001 EAST

79S MOTOTOOL 502E204B08

108S= 42501A3308

109S= 424E3D3C2C

423F292232

110S= 424F253A5D

42506B6C4A

111S= 423F542A21

112S= 500E075B6D

116S= 4250112C19

~~109S~~ 502E545877

122S 424D7D1001

423A27570B

123S 424E27410B

131S 424E524513

132S= 424F2D324C

133S= 42500C622B

134S= 424F362808

135S= 424F003020

89S 9-10 JUNE 2001 EAST 42502E5226

114S 424320347B

121S 424D0A2B48

125S 424E2A2E75

140S 424F30681A

141S 423C055750 RH

141S 425000011D LH

143S 424F157219 LH

142S 423A294C18

146S 423F336B72

149S 424F297F46

154S 42500C4632

10-11 JUNE 2001

117S 500E146B0F

155S 424E6A5D07

156S 4250030E25

42502F4541

158S 423F2F7F21

159S 424E016932

424F053D47

ATTEMPTED 160S 424D1F1307 LOST IN SAND

RH 160S 424F377269

161S 424F37017A EGGS + TUMOR BIOPSIES

LH 424D712942 TMR

162S 424D025450 TMR

163S 424E2C5365

164S 42500E7D79

165S 4250471E36

423F337673

TWO APPROACH

166S

11-12

143S

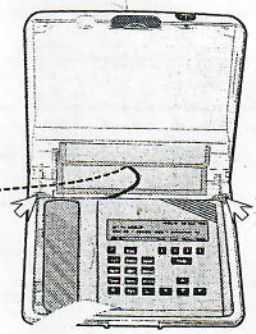
424D

WorldPhone Portable cont'd

### *Setting up*

**1** Open the WorldPhone.

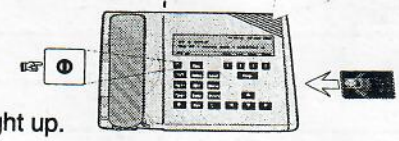
**2** If needed, release the telephone and lift it out.
Check that the antenna coax cable is properly connected.
*Swing out the handle in the lid for antenna support.*
*The coax cable permits the antenna to be placed up to 3 metres away from the Telephone Unit.*



**3** Insert the SIM card (if SIM operated).

**4** Press and hold the ON/OFF key for 2 seconds.

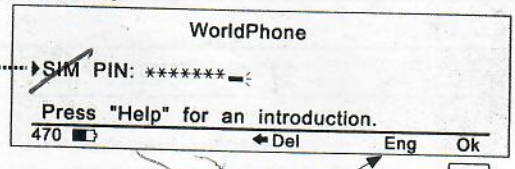
The display should light up.



**5** Check for sufficient battery capacity.
If low, connect the WorldPhone for recharging from external source, *see* ***appendix C***.

**6a** Enter the SIM PIN code, and press **Ok**:

If necessary, adjust display brightness:




*When selecting another display language, **Eng** appears for easy restoring of English, see **"Phone setup: Language setup and Language reset"** in chapter 2. Operation.*

**6b** If no SIM card is inserted, the "Phone PIN" will be prompted for.
*Default Phone PIN: 1 2 3 4 5 6*



4250315E3E

424F2B4D68

424E4C7962

424D6C2D7B

424F2C4765

423B331E13

424E6A641F

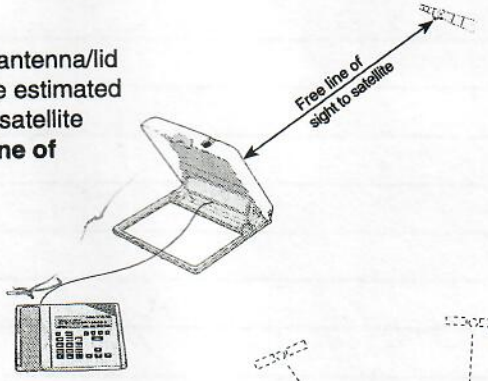
4243503461

**7** During the satellite search, beep tones will be heard from the loudspeaker (provided the **Tone** is ON, *see next page*):

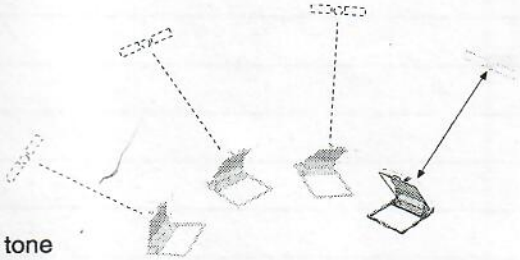
- slow intermittent tones when searching for **any satellite.**
- rapid intermittent tones when searching for a **specific satellite** *(faster when searching for a single satellite).*

**8** To find the correct vertical angle to the satellite, try with the antenna adjusted to 60°, 30° or 0° as indicated.


**9** Aim the antenna/lid towards the estimated position of satellite with **free line of sight.**




Or make a slow scan across the hemisphere.

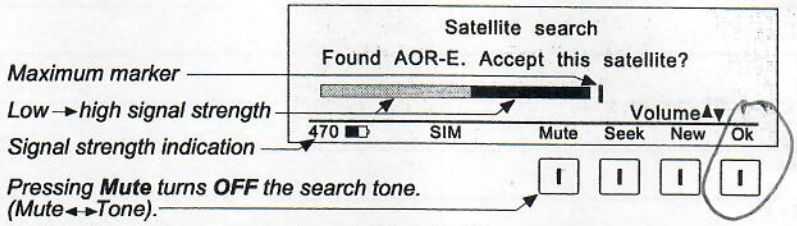


When receiving a satellite signal, a short tone will sound. If it is an Inmarsat satellite, a continuous tone will sound with varying frequency *(provided the **Tone** is ON, see next page).*

*The WorldPhone always starts with **Tone off** and **"any satellite"** search. See step 10.*

When closing in on a satellite, turning the antenna/lid horizontally and adjusting its vertical angle, the tone should increase in frequency.

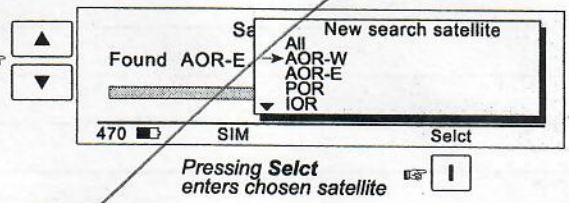
**10** A shaded signal strength bar will appear in the display.
The longer the signal bar or higher the signal strength indicator value, the better the signal quality. The bar becomes solid when the signal strength value reaches 400.
The maximum marker indicates the highest signal strength achieved during the current search.




**11** Pressing the **Seek** function key starts the search again.

**New** allows selection of a specific satellite:

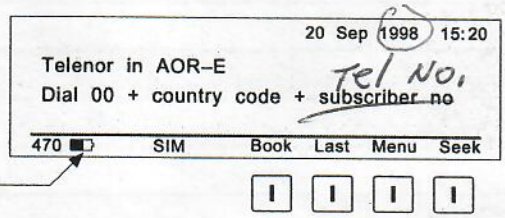
Scroll down to desired satellite and select:




*Note! Searching for a **New** satellite should be done under special circumstances only. Searching for **any satellite** is the normal mode of operation (default).*

**12** Pressing **Ok** initializes the system.

**13** The equipment is ready for use when the **Main window** appears:






424F104452
42502E1D14
423A2C0332
424D1D4070
424D4F6D66
424D12317F
424D257C7D

100



SKYWATCH

# Red planet will sparkle in the June sky

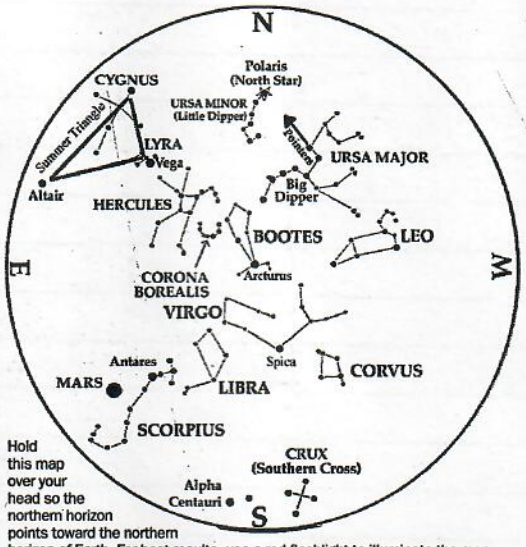
By Mike Shanahan
Bishop Museum Planetarium Manager

As Jupiter, Saturn and Mercury slip away from the late spring sky, the bright orange spark of Mars gains prominence. One of several Hawaiian terms for Mars is Hōkū'ula, "red star" (a term also used for the star Antares). The red planet was identified with the god of war in Greco-Roman culture, perhaps because its ruddy glow suggested the color of blood.

Mars will be the only planet visible in the evening sky this summer, but it will be spectacular. The last time Mars was this bright was during the summer and fall of 1988.

No other planet varies in brightness as dramatically as Mars. When it is on the far side of the sun from us, Mars is nearly 200 million miles away, and dimmer than many stars. When in "opposition," the planet can be as close to Earth as 35 million miles, outshining even the brightest of stars.

Oppositions of Earth and Mars occur every 26 months. During this time, a straight line can be drawn between the sun, Earth and Mars, and the two planets are as close to each other as they will ever get.




Hold this map over your head so the northern horizon points toward the northern horizon of Earth. For best results, use a red flashlight to illuminate the map. Use at about 9 p.m. early in the month and 8 p.m. late in the month.

## Unusually bright glow

However, because Mars orbits the sun in an elliptical pattern, the distance between Mars and the sun changes a lot. Mars is 155 million miles from the sun at one end of its orbit ("aphelion"), and only 128 million miles from the sun at the other end of its orbit ("perihelion").

Earth is about 93 million miles from the sun. If an opposition occurs when Mars is at its furthest point away from the sun, Mars is still over 61 million miles away from us. If an opposition occurs when Mars is at its closest point to the sun, the planet is just 35 million miles from Earth.

During this current opposition, Mars is not exactly at perihelion, its nearest point to the sun, but it is close. Mars will be 42 million miles away from Earth in mid-June, and will shine at minus 2.35 magnitude. The day of the opposition is June 13, and Mars will be at its brightest then. However, Mars will be closest to Earth on June 21.

The next opposition, in 2003, will occur during Mars' perihelion, and the planet will glow even more brightly then.

## All-night attraction

When a planet is in opposition, it rises at sunset and is in the skies the entire night. For this reason, Mars will be hard to miss.

At the start of the month, it will rise in the southeast around 8:15 p.m., one hour after sunset. By June 13, the night of opposition, it will rise at 7:30 p.m. and set at dawn. By the end of the month, it will be about 20 degrees above the sou east horizon when it gets da enough to see the red planet, a will remain in the skies until daw

## Encounter with Antares

Planets also start to go "reti grade" when in opposition. Throu June, Mars will move slowly towa the west, which is opposite from normal direction of motion. Tl means that it will get closer to t red star Antares in the constellati Scorpius. Antares has an orange color similar to Mars, and its na means "rival of Mars" in Greek.

At the start of June, Mars is degrees east of Antares; by Ju 30, it will be only 8 degrees to t east. However, Mars will definit outshine Antares.

## Glimpses of polar caps

Take advantage of a golden reddish) opportunity in June to serve Mars by telescope. T month will offer a good chance try to pick out the polar caps an few surface features.

Mars is tilted like Earth, and h seasons like we do. June 17 is t first day of Martian autumn. I cause no part of Mars will be til away from the sun and Earth, should be able to see the planet month. With the southern her sphere of Mars just emerging fr winter, there should be a promin southern polar cap.

In the second week of June large V-shaped dark spot call Syrtis Major will be well-placed observation. This was the first f ture of Mars ever observed wit telescope. Mars's day lasts hours and 39 minutes, very simi to our earthly day.

---

Date: Fri, 4 May 2001 11:00:14 -1000
From: Shawn Murakawa <smurakaw@honlab.nmfs.hawaii.edu>
To: George H. Balazs <gbalazs@honlab.nmfs.hawaii.edu>
Cc: Shandell Eames <seames@honlab.nmfs.hawaii.edu>
Subject: Skippy voicemail msg (fwd)

June 97 Terr Nest

He left me a msg at 6:58am (he also said that he was trying to get a hold of you and left a message). There was a turtle stranded with tags and tumors. It was also shark bitten. Tag# 766T LHF, 767T RHF. CCL=95.5cm, CCW=87.0cm. Skippy mentioned that he will be calling MPD to call Public Works to pick up the carcass. I just got a hold of Van and she said that Skippy's in a meeting at the Maui Ocean Center all day.

---

2000

DAILY TOTALS
NESTING GREEN TURTLES
FRENCH FRIGATE SHOALS, ~~1999~~ 2000

Island: EAST

Vanessa

ARROW

| Date | # Turtles Up | # New Turtles IDed | # Nests | Invest. | Comments |
|---|---|---|---|---|---|
| 29 May | 21 | 21 | 2M/0P/0N | VP | training night for AD 2 tags |
| 30 May | 23 | 12 | 0M/0P/2N | AD | AD's first walks 1/2 night |
| 31 May | 43 | 29 | 4M/0P/3N | VP | 1st full night I'd guess ~50 up - couldn't get to all - SEALS |
| 1 June | 40 | 16 | 3M/6P/2N | VP | 115# peed when I PIT tagged her! |
| 2 June | 45 | 28 | 1M/1P/4N | VP | new moon |
| 3 June | 34 | 8 | 6M/3P/1N | VP | crappy night - squalls thruout. |
| 4 June | 30 | 17 | 3M/1P/2N | AD | heavy squalls after 4am |
| 5 June | 32 | 18 | 1M/2P/3N | AD | rain mostly all night |
| 6 June | 37 | 16 | 5M/1P/2N | AD | lots of rain and pretty low tide |
| 7 June | 32 | 18 | 7M/0P/1N | AD | nice night, just enough moon! |
| 8 June | 25 | 12 | 3M/2P/0N | VP | 21 of 2 tags used 252 unused 2 misapplied 4 missing nice night |
| 9 June | 41 | 25 | 11M/3P/4N | VP | nice night - mabo hatching night |
| 10 June | 37 | 16 | 7M/3P/1N | VP | very little wind - plenty of ID & sightings forms |
| 11 June | 38 | 17 | 12M/2P/3N | VP | nice night only got to spit last 3 wks - seals |
| 12 June | 41 | 12 | 5M/5P/0N | AD | no wind |
| 13 June | 34 | 4 | 2M/1P,2N | AD | no wind, killer hot, kinda slow, lotsa moonlig |
| 14 June | 38 | 6 | 0M/3P,3N | AD | hot, no wind, lotsa light, jumpy turtles after dips |
| 15 June | 31 | 1 | 3M,3P,2N | AD | Seals had time cut off from most of the island |
| 16 June | 34 | 7 | 3M,5P,4N | VP | wind picked back up - saw a shark in a.m! shark & albie! |
| 17 June | 43 | 7 | 13M,2P,2N | VP | FULL MOON 1st fledge not impressive saw 2 sharks |
| 18 June | 45 | 5 | 7M,2P,3N | VP | 4M+P pairs on island |
| 19 June | 39 | 5 | 9M,2P,4N | VP | 5 M+P pairs on island - I think |
| 20 June | 38 | 6 | 5M,0P,3N | AD | definately 5 m+p pair, seals everywhere |
| 21 June | 50 | 5 | 4M,4P,4N | AD | * 1st hatchling seen busy night Assistant Manager, Tony, on first two + last walk |
| 22 June | 42 | 4 | 4M,1P,3N | AD | slowing down a little |
| 23 June | 40 | 1 | 2M,1P,5N | AD | exactly half moon, windy, mellow |
| 24 June | 53 | 2 | 10M,1P,3N | VP | nice night |
| 25 June | 44 | 2 - 1 | 9M,4P,3N | VP | a few squalls. nice not very windy |
| 26 June | 55 | 4 | 11M,1P,0N | VP | mild night - hardly any wind - a few squalls |
| 27 June | 57 | 2 | 1M,2P,6N | AD | lotsa turtles, little moon |
| 28 June | 65 | 5 | 4M,2P,3N | AD | big night, slammed early and all over |
| 29 June | 46 | 3 | 7M,1P,2N | AD | slowed a lot, few hatchlings * |
| 30 June | 50 | 3 | 5M,5M,2N | AD | Lots + Lots of hatchlings tonight / No Moon |

(HENCE APRIL NESTING)

Marine Turtle Research
NMFS HONOLULU LAB
2570 Dole Street
Honolulu, HI 96822-2396

4 sand on east
4 on Tern
All others in egg nests

22

# Onset Optic Stowaway Temperature Data Loggers
## FFS 2000 - Set up for 3 hours and 12 minutes

23?

| DATE STARTED | SERIAL NUMBER | TIME STARTED | |
|---|---|---|---|
| 5/19/00 | 224562 | 1356 | T4 |
| 5/19/00 | 243573 | 1357 | T1 |
| 5/19/00 | 243570 | 1357 | N5 |
| 5/19/00 | 243571 | 1358 | N7 |
| 5/19/00 | 224566 | 1359 | N13 |
| 5/19/00 | 122324 | 1400 | T2 |
| 5/19/00 | 243575 | 1401 | N12 |
| 5/19/00 | 141199 | 1402 | N9 |
| 5/19/00 | 295520 (NEW) | 1403 | N2 |
| 5/19/00 | 243577 | 1404 | N4 |
| 5/19/00 | 243581 | 1406 | N1 |
| 5/19/00 | 141201 | 1407 | E7 |
| 5/19/00 | 198448 | 1408 | T3 |
| 5/19/00 | 243574 | 1408 | N6 |
| 5/19/00 | 141200 | 1409 | E4 |
| 5/19/00 | 141202 | 1410 | N3 |
| 5/19/00 | 243583 | 1412 | |
| 5/19/00 | 141198 | 1413 | E1 |
| 5/19/00 | 71054 | 1413 | N10 |
| 5/19/00 | 81755 | 1414 | N11 |
| 5/19/00 | 309440 (new) | 1419 | N8 |
| 5/22/00 | 243572 | 0800 | E5 |

EAST
2001

| | TOTAL UP | NO. NEW |
|---|---|---|
| 4-5 JUNE | 10 | 10 |
| 5-6 JUNE | 21 | 18 |
| 6-7 JUNE | 28 | 19 |

Comments
NOT FULL Nights ( AD/MB TRAINING MATT BETTIN
" " "
FIRST FULL Night AARON DeFREIGHT

Marine Turtle Research
NMFS HONOLULU LAB
2570 Dole Street
Honolulu, HI 96822-2396

**List of Pictures Taken for G. Balazs - 2000**

| Picture # | Picture of: |
|---|---|
| 1 & 2 | Picture of 134U and blue plastic flipper tag (BBA40) ~~Taken 6/17.~~ |
| 3 & 4 | 223U "Shredder" with old tag #s U-200, A-241, A-240. ~~Taken 6/20.~~ |
| 5 & 6 | 224U - example of datalogger placement in egg chamber, N # 11; datalogger # 81755. Taken 6/20. |
| 7 | 223U"s nest. Taken 6/21. |
| 8 & 9 | 260U with old tag #s U-248, U249, G-645, G646. Taken 6/21. |
| 10 | Picture of a turtle. |
| 11 & 12 | 281U with old tag #s 122-C, 123-C, 324-C. Taken 6/22. |
| 13 & 14 | 353U nest laid at water's edge, example of a poor nesting location and pretty scenic picture (sunrise) Taken 6/22. |
| 15 & 16 | Unknown turtle that was too close to mom and pup to ID, caught her crawling to water. Took pictures because she had a large hole in ceter/right side of carapace. |
| 17 | 309U Missing all but shoulder of right front flipper, bone exposed but looked healed over - possibly semi-old wound. |
| ~~17~~ or ~~18~~ 18 | 358U Turtle with 20 cm X 13 cm divet in carapace. Taken 6/24. |
| ~~18 & 19~~ 20 | 256U with old tag #s excavating. Taken 6/25 |
| ~~20 & 21~~ 22 | 256U crawling (scenic). Taken 6/25. |
| ~~22~~ 23 | 360U picture of turtle with no RFI. Taken 6/25. |
| ~~23 & 24~~ 25 | 278U laying eggs. Taken 6/25. |
| 26 | hatchling |

Disposable Camera
First three pictures taken from the "sawed off" t-pole stump around the perpendicular log. The rest were taken from the telephone pole or either ends of the island.

2001 DAILY TOTALS - GB ON EAST

| | TOTAL ID | NEW ID | Thurs/Fri | Comments |
|---|---|---|---|---|
| 7-8 JUNE 01 | 25 | 21 | Thurs/Fri | AD & GB (GB partial) |
| 8-9 JUNE (1) | 40 | 28 | FRI/SAT | GHB ALONE |
| 9-10 JUNE (2) | 31 | 19 | SAT/SUN | " " |
| 10-11 JUNE (3) | 31 | 14 | SUN/MON | " " |
| 11-12 JUNE (4) | 34 | 24 | MON/TUES | " " |
| 12-13 JUNE (5) | 35 | 19 | TUES/WED | " " |
| | | 104 TOTAL | | |

2000 season

## East Island, FFS Datalogger Locations

Data loggers that are buried, but not in nests. They are in historical positions (i.e., positions previously used in past years) and we kept their historical numbers to facilitate retrieval of dataloggers.

E1 14.4m @ 15° from booby rock.
E4 20m @ 212° from SW tomb corner.
E5 7.5 m due south from sawed-off telephone pole; 12.5m @ 244° from the end of the perpendicular log.
E7 4.6m @ 325° from north end of southern-most desalinator gen.

Nest dataloggers have been measure off of permanent objects located on the island. The datalogger string was attached to a piece of marine debris (i.e., a fishing float, glass bottle, or plastic jug), spray painted white on the side and the nest number was written on the object.

N1 21m @ 200° from the telephone pole box.
N2 25m @ 195° from the small *Tournefortia* south of the large Tournefortia along the parallel log.
N3 11m @ 100° from the small *Tournefortia* west of T1 (*Tournefortia* 1); 18m @ 6° from booby rock. **DUG UP!!! NO LONGER N3 IS N15.**
N4 21.9m @ 242° from the corner of the cement blocks closest to the nest; 19.4m @ 180° (due south) from the telephone pole box.
N5 18.7m @ 228° from T4.
N6 19.9m @ 73° from the NE corner of the tombs; 17.2 m @ 301° from the telephone pole.
N7 4.5m @ 318° from the *Tournefortia* to the north of the telephone pole.
N8 13.5 m @ 165° from the inland end of the perpendicular log; 24.8 m @ 212° from the NE end of the parallel log.
N9 17.5m @ 158° from the small *Tournefortia* west of T1.
N10 1.8m @ 32° (or NE) from the south side of the southern-most desalinator.
N11 29.7m @ 150° from the inland end of the perpendicular log; 30.5 m @ 218° from small *Tournefortia* along the parallel log.
N12 14.5m @ 182° from SE corner of the tombs.
N13 2.5m @ 90° from the cut-off telephone pole (direct line between cut telephone pole and the perpendicular log).
N14 3.4m @ 315° from the gens gear box (only part that isn't patina).
N15 17.5m @ 156° from the small *Tournefortia* along the parallel log.

Date: Mon, 25 Jun 2001 18:44:46 EDT
From: Hinwr@aol.com
To: gbalazs@honlab.nmfs.hawaii.edu
Subject: Great Visit!

Hi George,

Pardon my delay in replying to your email, but AOL has be extremely difficult to make connects. I really enjoyed your visit to FFS. Thanks for the wine and good cheer! I would like, at the very least, to have lunch with you to discuss a wide range of turtle topics. As we discussed, I've been motto tooling and pit tagging rescued turtles at Tern. I'm up to T-2, so spread the word. I've got East turtle numbers from Aaron and suspect you'd like those emailed back to you. Let me know if this is the case and I'll draft and send an email with those numbers. Aaron took two nights off, the 21 and 22nd to recuperate. Last night he had 43 total came up over at East. Aaron sounded good, albeit, tired this morning.

Aloha,
Tony and crew

Turtle Temperature Datalogger Deployment
FFS/2000 Year 2000

| Date In | Time In | Logger # | Location | Turtle # | Nest # | Date Retrieved | Comments |
|---|---|---|---|---|---|---|---|
| 5/28/00 | 1517 | 243573 | T 1 | | | | |
| 5/28/00 | 1505 | 122324 | T 2 | | | | fnd 6/8 or 9; replace 6/15 @ 1258 |
| 5/28/00 | 1450 | 198448 | T 3 | | | | |
| 5/28/00 | 1432 | 224562 | T 4 | | | | |
| 6/4/00 | 1455 | 141198 | E 1 | | | | |
| 6/4/00 | 1439 | 141200 | E 4 | | | | |
| 6/4/00 | 1431 | 243572 | E 5 | | | | |
| 6/4/00 | 1414 | 141201 | E 7 | | | | fnd up 6/28; replaced 7/1 @ 1045 |
| 6/1/00 | 303 | 243581 | EAST | 110U | N 1 | | |
| 6/2/00 | 148 | 295520 | EAST | 138U | N2 | | |
| 6/9/00 | 56 | 141202 | EAST | 247U | N3 | | fnd dug up 6/28 now N15 |
| 6/9/00 | 304 | 243577 | EAST | 257U | N4 | | |
| 6/10/00 | 2351 | 243570 | EAST | 73U | N5 | | |
| 6/11/00 | 125 | 243574 | EAST | 217U | N6 | | |
| 6/14/00 | 315 | 243571 | EAST | 85U | N7 | | |
| 6/14/00 | 5 | 309440 | EAST | 62U | N8 | | |
| 6/18/00 | 513 | 14119 | EAST | 196U | N9 | | |
| 6/19/00 | 111 | 71054 | EAST | 197U | N10 | | |
| 6/20/00 | 140 | 81755 | EAST | 224U | N11 | | |
| 6/21/00 | 2250 | 243575 | EAST | 344U | N12 | | |
| 6/27/00 | 248 | 224566 | EAST | 363U | N13 | | |
| 6/29/00 | 2320 | 243583 | EAST | 178U | N14 | | |
| 6/29/00 | 530 | 141202 | EAST | 134U | N15 | | |
| | | | | | | | |

# Planetarium and astronomical calendar for June

## Astronomical highlights

➤ **Solar eclipse over Africa:**

On June 21, a total solar eclipse will occur over southern Africa. The total phase of the eclipse will touch down in Angola at 2:36 a.m. Hawaiian Standard Time. Over the next 90 minutes, the moon's shadow will pass over Zambia, Zimbabwe, Mozambique and Madagascar.

No part of this eclipse will be visible in the Pacific basin or in North America. Bishop Museum is planning a program to tie in to a live Webcast. Call the astronomy hotline at 848-4136 after Friday for details.

NASA site for the June 21 eclipse:

umbra.nascom.nasa.gov/eclipse/010621/rp.html

Fred Espenak's classic eclipse page:

sunearth.gsfc.nasa.gov/eclipse/eclipse.html

➤ **First day of summer:**

Summer begins at 9:38 p.m. June 20, Hawai'i time. In Universal Time, summer starts at 7:38 a.m. June 21.

## The planets in June

**Mercury** is fading from the evening sky. Look for it around just above the horizon at 7:45 p.m. in the west northwest in early June. Mercury will emerge as a morning star at the end of June, rising in the east about 5 a.m. Mercury generally appears near sunset or sunrise. Its Hawaiian name reflects this: Ukaliali'i, "follower of the chief" (i.e. the sun).

**Venus** is spectacular in the morning skies all month, rising in the east at 3:15 a.m. Venus reaches a brilliant minus 4.24 magnitude at the start of the month. This means that Venus is six times brighter than Mars when Mars is at its brightest. The brilliance of Venus is reflected in one of its Hawaiian names, Hōkūloa, "long star."

**Jupiter** may be visible just above the sun at sunset on Friday, but it is almost lost in the sunset glow. By the end of the month, look for Jupiter as a morning star, rising in the east about 5:30 a.m.

**Saturn** rises about 5 a.m. on June 10 and about 4:10 a.m. at the end of June. Saturn forms the bottom of a triangle with the Pleiades and Venus.

**International Space Station**

For viewing information:

■ Heavens-Above.com: www.heavens-above.com/

■ NASA Web site: www.spaceflight.nasa.gov/

## Moon phases for June

➤ **Full:** June 5

➤ **Third Quarter:** June 13

➤ **New:** June 21

➤ **First Quarter:** June 27

## "Sky Tonight"

7 p.m. June 4. Reservations are recommended: Call 847-8201, 9 a.m.-4 p.m. There is no late seating.

## Daily Planetarium schedule

➤ **"Explorers of Mauna Kea"** (30 minutes): 11:30 a.m., 3:30 p.m.

➤ **"The Explorers"** (45 minutes): 1:30 p.m. "The Explorers" (in Japanese, 35 minutes): 12:30 p.m.

The observatory is open 2:30-3:15 p.m. every day, weather permitting.

**Special programs**

➤ **Family Sunday, June 24:** Brief "Sky Show" programs will be presented every half hour from 9:30 a.m. to 4:30 p.m. (no shows at 12:30 or 1 p.m.)

## Hawaiian Astronomical Society

The Hawaiian Astronomical Society meets at 7:30 p.m. June 5. This free meeting is open to all. For information, see: www.hawastsoc.org/

*Bernice Pauahi Bishop Museum, the State Museum of Cultural and Natural History, was founded in 1889. It is open daily, 9 a.m.-5 p.m. Admission is $14.95 for adults and $11.95 for children (4 to 12 years). Children under 4 are free. Kama'āina rates are available. The museum is at 1525 Bernice St. For information, call 847-3511. For planetarium information, call Sky Information Lines: 848-4136; 848-4162 for planetarium office.*

*The Bishop Museum Planetarium Web Site: www.bishopmuseum.org/bishop/planet/sky.html*

GB 6 NIGHTS ON EAST ISLAND - 5 alone

# June 2001

JUNE

*Hapu'u - Hawaiian Grouper*
*by Ed Robinson*

| Sunday/Lāpule | Monday/Pō'akahi | Tuesday/Pō'alua | Wednesday/Pō'akolu | Thursday/Pō'ahā | Friday/Pō'alima | Saturday/Pō'aonō |
|---|---|---|---|---|---|---|
| | | | | | R 5:49AM S 7:10PM 6 AM NOON 6PM **1** | R 5:49AM S 7:10PM R 4:23PM S 3:32AM 6 AM NOON 6PM **2** |
| R 5:49AM S 7:10PM R 5:20PM S 4:12AM 6 AM NOON 6PM **3** | R 5:49AM S 7:11PM R 6:18PM S 4:54AM 6 AM NOON 6PM **4** | R 5:49AM S 7:11PM R 7:15PM S 5:38AM 6 AM NOON 6PM **5** | R 5:49AM S 7:12PM R 8:10PM S 6:25AM 6 AM NOON 6PM **6** | R 5:48AM S 7:12PM R 9:03PM S 7:15AM 6 AM NOON 6PM **7** | R 5:49AM S 7:12PM R 9:52PM S 8:06AM 6 AM NOON 6PM **8** | R 5:49AM S 7:13PM R 10:37PM S 8:59AM 6 AM NOON 6PM **9** |
| 1:42AM 0.9 7:48AM -0.3 | 3:04PM 2.0 9:54PM 0.2 | 2:25AM 0.8 8:17AM -0.3 | 3:40PM 2.1 10:45PM 0.2 | 3:08AM 0.6 8:46AM -0.3 | 4:16PM 2.2 11:33PM 0.2 | 3:50AM 0.5 9:17AM -0.0 | 4:53PM 2.2 | 12:21AM 0.1 4:35AM 0.5 | 9:48AM -0.1 5:30PM 2.1 | 1:08AM 0.1 5:22AM 0.4 | 10:22AM -0.1 6:09PM 2.1 | 1:56AM 0.1 6:17AM 0.4 | 10:58AM 0.1 6:50PM 2.0 |
| R 5:49AM S 7:13PM R 11:18PM S 9:51AM 6 AM NOON 6PM **10** | R 5:49AM S 7:13PM R 11:57PM S 10:42AM 6 AM NOON 6PM **11** | R 5:49AM S 7:14PM R None S 11:32AM 6 AM NOON 6PM **12** | R 5:49AM S 7:14PM R 12:33AM S 12:22PM 6 AM NOON 6PM **13** | R 5:49AM S 7:14PM R 1:07AM S 1:12PM 6 AM NOON 6PM **14** | R 5:49AM S 7:15PM R 1:41AM S 2:02PM 6 AM NOON 6PM **15** | R 5:49AM S 7:15PM R 2:16AM S 2:55PM 6 AM NOON 6PM **16** |
| 2:44AM 0.1 7:23AM 0.4 | 11:38AM 0.2 7:32PM 1.8 | 3:30AM 0.1 8:44AM 0.5 | 12:29PM 0.3 8:17PM 1.7 | 4:10AM 0.1 10:07AM 0.6 | 1:40PM 0.5 9:03PM 1.5 | 4:45AM 0.1 11:15AM 0.8 | 3:16PM 0.6 9:50PM 1.4 | 5:15AM 0.0 12:05PM 1.0 | 4:57PM 0.7 10:39PM 1.2 | 5:44AM 0.0 12:46PM 1.3 | 6:25PM 0.6 11:28PM 1.1 | 6:11AM -0.1 1:23PM 1.5 | 7:37PM 0.5 |
| R 5:49AM S 7:15PM R 2:53AM S 3:50PM 6 AM NOON 6PM **17** | R 5:49AM S 7:16PM R 3:34AM S 4:48PM 6 AM NOON 6PM **18** | R 5:50AM S 7:16PM R 4:19AM S 5:49PM 6 AM NOON 6PM **19** | R 5:50AM S 7:16PM R 5:09AM S 6:53PM 6 AM NOON 6PM **20** | R 5:50AM S 7:16PM R 6:06AM S 7:57PM 6 AM NOON 6PM **21** | R 5:50AM S 7:16PM R 7:08AM S 8:58PM 6 AM NOON 6PM **22** | R 5:51AM S 7:17PM R 8:14AM S 8:54PM 6 AM NOON 6PM **23** |
| 12:17AM 1.0 6:41AM -0.2 | 1:59PM 1.8 8:38PM 0.4 | 1:06AM 0.9 7:13AM -0.2 | 2:37PM 2.0 9:32PM 0.3 | 1:55AM 0.8 7:48AM -0.3 | 3:16PM 2.2 10:24PM 0.2 | 2:44AM 0.7 8:26AM -0.3 | 3:58PM 2.4 11:15PM 0.1 | 3:36AM 0.6 9:06AM -0.3 | 4:42PM 2.5 | 12:05AM 0.1 4:30AM 0.6 | 9:50AM -0.3 5:27PM 2.5 | 12:56AM 0.0 5:30AM 0.5 | 10:37AM -0.2 6:14PM 2.4 |
| R 5:51AM S 7:17PM R 9:19AM S 10:45PM 6 AM NOON 6PM **24** | R 5:51AM S 7:17PM R 10:23AM S 11:31PM 6 AM NOON 6PM **25** | R 5:51AM S 7:17PM R 11:25AM S None 6 AM NOON 6PM **26** | R 5:52AM S 7:17PM R 12:24PM S 12:14AM 6 AM NOON 6PM **27** | R 5:52AM S 7:17PM R 1:22PM S 12:54AM 6 AM NOON 6PM **28** | R 5:52AM S 7:18PM R 2:18PM S 1:33AM 6 AM NOON 6PM **29** | R 5:52AM S 7:18PM R 3:15PM S 2:12AM 6 AM NOON 6PM **30** |
| 1:47AM 0.0 6:38AM 0.6 | 11:30AM 0.0 7:02PM 2.3 | 2:36AM -0.1 7:56AM 0.6 | 12:31PM 0.2 7:52PM 2.0 | 3:23AM -0.1 9:21AM 0.8 | 1:48PM 0.4 8:43PM 1.8 | 4:07AM -0.1 10:42AM 1.1 | 3:27PM 0.6 9:35PM 1.5 | 4:48AM -0.1 11:49AM 1.3 | 5:16PM 0.7 10:30PM 1.3 | 5:27AM -0.2 12:44PM 1.6 | 6:56PM 0.7 11:27PM 1.0 | 6:03AM -0.2 1:31PM 1.8 | 8:16PM 0.5 |

(PARTIAL) (FIRST NIGHT AROUND) MATT

ARRIVE

GB 6 NIGHTS

(1) GB

(2) GB

(3) GB

(4) GB

(5) GB

(6) GB

OFF

(1) GB

(2) GB

(3) GB

(4) GB

(5) GB

(6) GB

25 full nights

JULY 1 2 3 4 5 6 7 8 9

OFF

PLANE

106

**Report on the Deployment of Temperature Data Loggers and the Results of the Techniques Tested to Insert Identifying PIT Tags into Hind Flippers of Nesting Green Turtles During the 2000 Green Turtle Nesting Season at French Frigate Shoals, Hawaii**

**In fulfillment of NOAA Requisition Number 40JJNF000175**

**By Vanessa E. Pepi**
**September, 27 2000**

**Results of data logger deployments on East and Tern Islands:**

Temperature data loggers were deployed on East and Tern Islands to monitor sand and nest temperatures during the 2000 green turtle (*Chelonia mydas*) nesting season. A total of 23 data loggers were buried between the two islands. Eight data loggers (4 on each island) were buried in the sand on Tern and East Islands in locations that have been used since 1995. Tern Island data loggers were designated T1-T4. East Island data loggers were designated E1, E4, E5, and E7. The remaining data loggers were placed among the eggs of nesting turtles during the nightly monitoring on East Island. These data loggers were designated N1-N15. This is the third consecutive season that data loggers have been placed in nests.

Data loggers were attached to a 3 meter line that was either tied to a stake (Tern Island) or to a piece of marine debris (East Island). On East Island, the end of the line was tied to a piece of marine debris such as; large plastic fishing floats, Styrofoam floats, or large glass bottles. The float or bottle was then spray painted white and marked with a nest number using permanent black ink. All data loggers had a piece of duct tape placed over the blinking active light to avoid any interference with the hatchlings' navigational cues while they are in the nest. Sand data loggers were buried at a depth of 40-50cm. Nest data loggers were placed on top of the eggs after the turtle had laid approximately half her clutch, causing the data logger to be completely surrounded by eggs when the turtle was done nesting.

Sand and nest data logger designation numbers, serial numbers, deployment dates and times are listed below for Tern and East Islands.

| Date In | Time In | Logger # | Location | Turtle # | Nest # |
|---|---|---|---|---|---|
| 5/28/00 | 1517 | 243573 | T 1 | | |
| 5/28/00 | 1505 | 122324 | T 2 | | |
| 5/28/00 | 1450 | 198448 | T 3 | | |
| 5/28/00 | 1432 | 224562 | T 4 | | |
| 6/4/00 | 1455 | 141198 | E 1 | | |
| 6/4/00 | 1439 | 141200 | E 4 | | |
| 6/4/00 | 1431 | 243572 | E 5 | | |
| 6/4/00 | 1414 | 141201 | E 7 | | |
| 6/1/00 | 303 | 243581 | EAST | 110U | N 1 |
| 6/2/00 | 148 | 295520 | EAST | 138U | N2 |
| 6/9/00 | 56 | 141202 | EAST | 247U | N3 |
| 6/9/00 | 304 | 243577 | EAST | 257U | N4 |
| 6/10/00 | 2351 | 243570 | EAST | 73U | N5 |
| 6/11/00 | 125 | 243574 | EAST | 217U | N6 |
| 6/14/00 | 315 | 243571 | EAST | 85U | N7 |
| 6/14/00 | 5 | 309440 | EAST | 62U | N8 |
| 6/18/00 | 513 | 14119 | EAST | 196U | N9 |
| 6/19/00 | 111 | 71054 | EAST | 197U | N10 |
| 6/20/00 | 140 | 81755 | EAST | 224U | N11 |
| 6/21/00 | 2250 | 243575 | EAST | 344U | N12 |
| 6/27/00 | 248 | 224566 | EAST | 363U | N13 |
| 6/29/00 | 2320 | 243583 | EAST | 178U | N14 |
| 6/29/00 | 530 | 141202 | EAST | 134U | N15 |

Year 2000

**East Island, FFS Datalogger Locations**

Data loggers E1-E4 are in historical positions (i.e., positions previously used in past years) and we kept their historical numbers to facilitate retrieval of dataloggers.

E1 14.4m @ 15° from booby rock.
E4 20m @ 212° from SW tomb corner.
E5 7.5 m due south from sawed-off telephone pole; 12.5m @ 244° from the end of the perpendicular log.
E7 4.6m @ 325° from north end of southern-most desalinator gen.

Nest dataloggers have been measured off of permanent objects located on the island. The datalogger string was attached to a piece of marine debris (i.e., a fishing float, glass bottle, or plastic jug), spray painted white on the side and the nest number was written on the object.

N1 21m @ 200° from the telephone pole box.
N2 25m @ 195° from the small *Tournefortia* south of the large Tournefortia along the parallel log.
N3 11m @ 100° from the small *Tournefortia* west of T1 (*Tournefortia* 1); 18m @ 6° from booby rock. **DUG UP. NO LONGER N3 IS N15.**
N4 21.9m @ 242° from the corner of the cement blocks closest to the nest; 19.4m @ 180° (due south) from the telephone pole box.
N5 18.7m @ 228° from T4.
N6 19.9m @ 73° from the NE corner of the tombs; 17.2 m @ 301° from the telephone pole.
N7 4.5m @ 318° from the *Tournefortia* to the north of the telephone pole.
N8 13.5 m @ 165° from the inland end of the perpendicular log; 24.8 m @ 212° from the NE end of the parallel log.
N9 17.5m @ 158° from the small *Tournefortia* west of T1.
N10 1.8m @ 32° (or NE) from the south side of the southern-most desalinator.
N11 29.7m @ 150° from the inland end of the perpendicular log; 30.5 m @ 218° from small *Tournefortia* along the parallel log.
N12 14.5m @ 182° from SE corner of the tombs.
N13 2.5m @ 90° from the cut-off telephone pole (direct line between cut telephone pole and the perpendicular log).
N14 3.4m @ 315° from the gens gear box (only part that isn't patina).
N15 17.5m @ 156° from the small *Tournefortia* along the parallel log.

Maps Tern Island and East Island showing all locations of deployed data loggers is attached to the end of this report.

**Techniques tested to insert identifying PIT tags into the hind flippers of nesting green turtles.**

During the nest monitoring season of 1998 and 1999 PIT tags were inserted into the hind flippers of nesting green turtles in the manner below:

The hind flipper tag should be injected 2-3 scutes above (proximal to) the hind flipper claw and about 1/3 the flipper width in (medial) from the outside flipper edge. Palpating the flipper will help in determining a suitable location. Tags should be placed between the 2nd and 3rd bones medial to the outside edge. The object is to place the tag in a fleshy part of the flipper, but away from any bones.

During the 2000 season monitoring effort it was decided that the PIT tag would be inserted 1.5-2 scutes above the 1998-99 insertion area. This decision was made because of concern that perhaps PIT tags were slipping out of the turtle's flipper due to that area being less fleshy. In the beginning of the season we tried the new area. We noticed more incidences of hitting the bones because they are closer together farther up the flipper and it was very difficult to palpate the flipper

in order to find a suitable location. When PIT tag insertion attempt occurs the turtle generally jerks its hind flipper towards its body in a reflex motion. It is very difficult to attempt to hold the flipper in place. More occurrences of the tagger (human) punching the carapace or in attempt to avoid punching the carapace having the turtle pull its flipper off of the needle. Another attempt at tagging would have to occur and thus cause more disturbance to the turtle. In order to save our index fingers and reduce turtle disturbance we reverted to the previous PIT tag sight by the second week of the monitoring season. 1998-99 insertion sight is easier to palpate and find a suitable location, easier to insert the needle, punching of the carapace rarely occurs and, with increased experience at PIT tagging, we rarely had lost PIT tags during the tag verification period. It also disturbed the turtle less to have the PIT tag lower while trying the read the tag with the reader. The lower half of the flipper is usually sticking out from underneath the carapace so it is easy to just place the reader above the flipper and get the reading. With the tags placed higher we either had to forcefully wedge the reader under the carapace or pull the flipper out from under the carapace to get a reading. This would generally disturb the turtle. During the 2000 season there were four turtles observed nesting that had been previously tagged during the 1998 nesting season. Those tags were applied at the lower spot on the flipper. It was very easy to read the tags with the scanner and both sets of PIT tags were read. Therefore, I recommend that during future monitoring years field technicians use the methods described during the 1998-99 nesting seasons.

-2001- – BASKING CENSUS – East Island

7 JUNE-Thurs. 6PM SEP=75; NEP=~8; PREP 4-5 Log Pier = ~10

8 JUNE Friday

9 JUNE Sat. 6PM NEP+ SEP=89 " " = 14 +4 else where (see video)

10 JUNE SUN (see video)

11 JUNE MON. (see video)

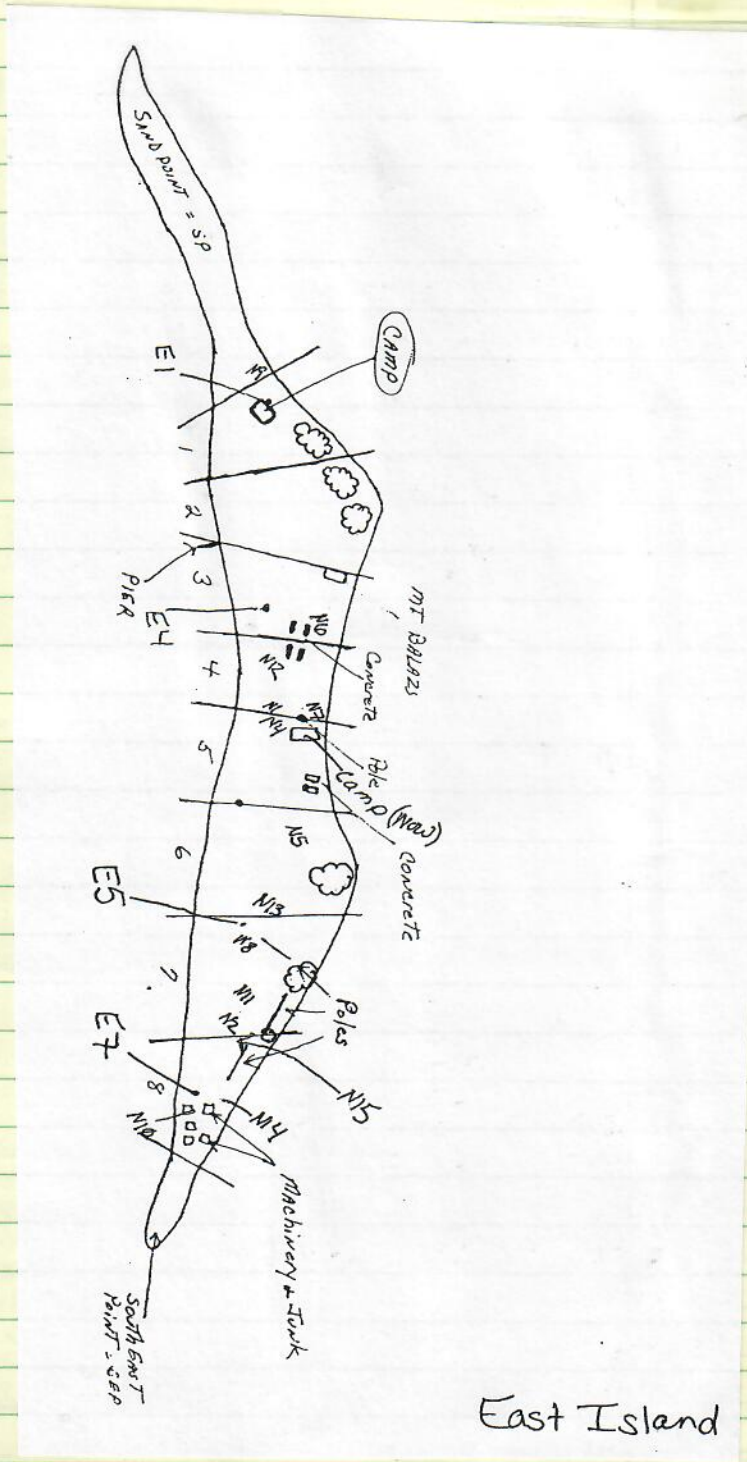
12 JUNE TUES.

13 JUNE Wed.

Date: Fri, 13 Jul 2001 13:48:43 -1000
From: Thea Johanos-Kam <Thea.Johanos-Kam@noaa.gov>
To: George H. Balazs <gbalazs@honlab.nmfs.hawaii.edu>
Cc: Thea Johanos-Kam <tjohanos-kam@s360.swfc2.nmfs.gov>
Subject: Re: Whale-Skate Island

Hi George,
Sorry to not get back to you sooner. Here's what I have.
Aloha, Thea

WhaleSkate
1985-1996 Dry sand islet, 30 pups born/year on average. In November 1996 waves first wash over island.
1997 Island awash during exteme tides, 21 pups born.
1998 Island frequently awash, no pups born.
1999 Island frequently awash, 2 pups born (1 disappeared perinatally, 1 weaned).
2000 Island frequently awash, no pups born.


Sand point = sp
CAMP
E1
1
2
3
PIER
E4
4
5
6
E5
7
E7
8
N1
N2
N3
N4
N5
N6
N10
N11
N13
N14
N15
Mt Baldy
Concrete
Bike camp
(wall)
Concrete
Poles
Machinery + Tank
South East
Point = SEP

East Island

East Island Turtle Report, 2000
U.S. Fish and Wildlife Service

Vanessa E. Pepi
Aaron Dietrich

Moto tools 40U - 377U

## I. General Monitoring

The 2000 turtle season was a short season consisting of only one month of monitoring. There were 338 nesting green sea turtles (*Chelonia mydas*) identified on East Island during this time as calculated from the ID data.

Turtle Camp began on May 29, 2000 and went through June 30, 2000 consisting of 33 nights of monitoring. The first two nights were training nights. Each night ideally consisted of six turtle walks around the island at 21:00, 23:00, 1:00, 3:00, 5:00, and 7:00 (sunset through sunrise). Due to the duration between walks, it is possible that some turtles that were up crawling or digging false pits were not seen. However, it is unlikely that those turtles that actually nested were not recorded as being up.

There were 316 possible nests recorded on East Island during the season. Eggs were witnessed for 81 of these nests. Turtles were seen covering egg chambers (putty-caking) for 68 nests and backfilling 167 nests.

These are nests!

## II. Data Notes

Identification data is recorded in the DBASEIII file EASTID00.DBF. This includes tag numbers applied and measurements taken for nesting females in the 2000 season on East Island. It also includes tumored turtle information. Sighting information is recorded in the DBASEIII file ESTSIG00.DBF. This file contains the turtle activity for each night of monitoring.

Moto-tool numbers 40U through 377U were used during the 2000 season. Internal, magnetically coded PIT tags were used for the third season at French Frigate Shoals. No external tags were applied. PIT tags were applied in both the left and right hind flippers. PIT tags were not in series, but most tags this season began with 4135-, 4136-, 4137-,413E-, 5005-, 5031-, 500E-, 500F-, 502E-, and 502F-. Tags were verified using a portable PIT tag scanner after the second week of turtle camp. Verified tag numbers are recorded in the file ESTSIG00.DBF under the heading ✕ vertagno ✕.

There were sixty turtles this year that received only a left hind PIT tag but could have received both ( i.e., both hind flippers were intact and could be tagged). There were seven turtles that received PIT tags in the left hind flipper but not the right because of injury (missing or cut/scarred) to the right hind flipper. Their numbers were 80U, 100U, 120U, 222U, 255U, 357U, and 358U. Three turtles: 76U, 106U, and 243U, received only a right hind PIT tag for the same reason (injury to the left hind flipper). One turtle, 97U, did not get PIT tagged in either hind flipper because of injury to both. Due to an oversight, 226U received two PIT tags in her right hind flipper (500F1F6309 and 500F24087D). This year was the first year that resights of

2 year cycle

previously PIT tagged turtles occurred on East Island. Turtles 108U, 143U, 223U, and 323U had all been PIT tagged during the 1998 nesting season. Five tags (500E0C476B, 500E1F553E, 500F2C3E79, 413E245F0B, AND 502E264C6E) were misapplied and not recovered. The needle pierced the flipper but the tag was not injected. One needle was dented so tag 4135362341 could not be injected. One tag, 500E18362C, was lost when the turtle lurched forward when tagger was attempting to insert the tag. There were two tags with the plunger missing (502E617B00 and 5019481475). The needles were inserted into the turtle, but due to the missing plunger the tags could not be injected.

**III. Tumors**

Need Severities TS1, 2, 3

Sixty-two turtles had tumors this year, or 18.34% of the nesting females on East Island. The tumored turtles were 40U, 45U, 46U, 55U, 66U, 68U, 87U, 88U, 91U, 93U, 106U, 109U, 112U, 126U, 128U, 130U, 141U, 151U, 154U, 167U, 172U, 177U, 179U, 185U, 189U, 193U, 194U, 200U, 210U, 212U, 217U, 218U, 220U, 222U, 230U, 233U, 235U, 237U, 246U, 247U, 250U, 251U, 254U, 256U, 259U, 266U, 269U, 272U, 276U, 295U, 301U, 302U, 318U, 320U, 323U, 324U, 325U, 333U, 337U, 345U, 354U, 376U. Tumor sizes and locations are recorded in the ID database file.

**IV. Data loggers**

Four data loggers were buried on East Island and Tern Island to measure sub-surface temperatures during the nesting and hatchling season. East Island data loggers were designated E1, E4, E5, and E7. Tern Island data loggers were designated T1 - T4. The data loggers were buried 45-55 cm deep at various locations around the islands. The dates they were buried are as follows: 28 May 2000 on Tern Island and 4 June 2000 on East Island . Also, fourteen data loggers were placed directly into turtle nests during the season. Each data logger is tied to a stake or piece of marine debris. A list of data loggers and their deployment times as well as a map and a description of approximate locations accompanies this report . The data loggers were left in the ground at the termination of turtle camp to be recovered at a later date.

**V. Miscellaneous Notes**

Need

Turtle 199U had fiberglass from an old satellite tag. The scute looked normal where the tag would have been.

Turtle 329U had a light blue tag at L34 with the numbers and letters BB4A40. Need

One turtle was discovered dead on Gin Island this year by NMFS personnel on 19 June. No reason for her death was obvious. A biopsy was not performed since she was not discovered for at least 24 to 48 hours after her death and was extremely bloated. This year the femurs and humeri were collected for G. Balazs.

**Recommendations**

To ensure safety and to maintain positive attitudes for the turtle techs while working alone for many hours on East Island we would like to make several recommendations for future seasons. It is very important that there is adequate shelter, edible food, and reliable radio communications with Tern Island.

need

The tent that is used on East Island is used for only one month a year and each year it is cleaned and repaired by the turtle techs for the next season. The tent is a very important on East Island because it is the only shelter and storage area for equipment the turtle tech has. Eventually the tent and tent fly does need to be replaced as was evidenced this year by the tent fly shredding during a night of heavy squalls. It had been recommended by the turtle techs the previous year that the tent fly did need to be replaced.

In 1998 the portable refrigerator that was on East Island broke down. The turtle techs in 1998 recommended that the refrigerator either be replaced or repaired. However, during the 1999 and 2000 seasons all the turtle techs had was a cooler with ice. It is very warm on East Island during the month of June and a cooler cannot maintain ice for even 48 hours. In 1999 the turtle tech on East Island had several food poisoning events due to inadequate storage of food. During the 2000 season the food situation was changed. We believe that it is a due to the addition of the large chest freezer on Tern. There was very little palatable non-perishable food on Tern Island this year. There were a lot of old soups, crackers, Poptarts, and Nutrigrain bars that were old on Laysan and then passed on to Tern Island. We were reduced to eating peanuts, pasta sauce and spaghetti, and macaroni and cheese that was an odd color. We lost weight and became irritable. We do not believe that a refrigerator on East Island would be an extravagance. It would help provide the turtle tech with nutritionally adequate food while working all night.

We would like to recommend that the radio communications are set up previous to the arrival of the turtle techs. The turtle techs generally arrive on Tern Island and head over to East Island in one to two days. This past season radio communications weren't really working until halfway through the season. To ensure the safety and the morale of the person on East Island, there absolutely must be reliable radio communications.

They wear my Mark.



# Nature's sovereignty

BY HELEN ALTONN
Star-Bulletin

NEW species of marine sponges, rapidly growing alien weeds, shipwrecks, golden-sand beaches, big-headed ants and abundant sea life.

Those are only a few of the findings being reported almost daily by state and federal scientists surveying ecological resources in the Northwestern Hawaiian Islands.

Their discoveries are greatly altering the picture of the remote islands and reefs that span 3,523 square miles.

"We expected surprises," said Barbara Maxfield, chief of the Division of External Affairs, Pacific Islands Ecoregion, U.S. Fish and Wildlife Service. "They're finding new species, which is absolutely wonderful."

The research expedition to the islands began Sept. 8, with the marine scientists traveling aboard the Townsend Cromwell, a National Oceanographic and Atmospheric Administration vessel. They were joined later in the month by researchers aboard the chartered ship Rapture.

The Rapture will return next Thursday and the Cromwell in late November after cleaning up marine debris in the islands.

The reef system in the Northwestern Hawaiian Islands includes Nihoa and Necker Islands, Gardner Pinnacles, Maro Reef, Laysan Island, French Frigate Shoals, Lisianski Island, Pearl and Hermes Atoll, Midway and Kure Atolls and Emperor Seamounts.

Invertebrate zoologist Ralph DeFelice identified 10 new species of colorful marine sponges in one location at Pearl and Hermes Reef.

He acknowledged it's hard to get people excited about sponges. But they are the oldest multicellular animals on earth and living filters in the ocean, he said. They act as the sea's "vacuum cleaners," drawing in and pumping out water. They also contain chemicals valuable in medicine.

Hawaiian Islands Wildlife Refuge manager David Johnson and wildlife biologists Chris Depkin and Eric Lund, meanwhile, mapped alien weeds and other vegetation on Southeast Island at Pearl and Hermes Atoll.

Aggressive weeds, such as verbesina or golden crown beard, have grown rapidly on the island, covering native vegetation. The scientists are concerned this may affect seabird breeding because the weeds are too high and dense for birds to nest.

*A school of ulua swims near Pearl and Hermes Atoll in the Northwestern Hawaiian Islands. Below, one of Ralph DeFelice's new sponge discoveries.*

Photo courtesy of the Bishop Museum

IT'S important to protect the little 34-acre island because it "is serving a huge ocean ... providing the only place for some of these sea birds to come back to, breed and care for their young," Johnson said.

The researchers also found shipwrecks scattered around Kure Atoll — "monuments to nature's ultimate sovereignty" — as well as a "healthy number" of groupers, jacks and sharks at the remote islands. This is in "stark contrast to the shy, scarce populations surviving in the main Hawaiian islands."

"Humans take their toll — fishing, pollution, habitat destruction," Stephanie Holzwarth, of the National Marine Fisheries Service, reported from the Townsend Cromwell.

"This makes me glad that the president and others are committed to preserving treasures like these intact coral reef ecosystems. That is why we are working our tails off to survey these reefs in the most complete manner possible."

The Paradise Queen II, a longline fishing vessel shipwrecked two years ago on Kure Atoll, is continuing to break apart and deteriorate in Green Island waters, the scientists said. Underwater photographers documented the vessel's impact on the pristine waters.

"Although the wreck doesn't appear to be causing continued harm to marine life, it remains a physical scar and reminder of the effects human impacts can have on wildlife sanctuaries such as Kure," said Ethan Shiinoki, a wildlife expert with the state Department of Land and Natural Resources.

Scientists had both bad and good news about Kure Atoll's 260-acre Green Island, a State of

START 115

2001 TAG Recoveries

40S - W210
41S - U176, U177
42S - W664, U796
U793
45S - A945, A946
A947 + PIT
46S - G106, U164
U683, 5340
+2 PITS
47S - G745, G746
507C, 454C
48S - 2 PITS
49S - U914, U915
+2 PITS
51S - 333C
53S - 1 PIT
55S - F709, F710
1371
56S 2 PITS
57S W644, 3368
58S - U60
59S - A848 A857
9258 + 2 PITS
60S - U931, G203
61S - 493T, 10498
62S - 1 PIT
U162, U163
1054(?)
64S - G615,
G616
65S - A583
66S - G622, G623
G625

NOTE TO LND.

# Midway Atoll becomes memorial to commemorate WWII sea battle

By Jan TenBruggencate
ADVERTISER STAFF WRITER

Midway Atoll, already a national wildlife refuge, has been designated as a national memorial for its World War II role in the pivotal Battle of Midway.

Secretary of the Interior Bruce Babbit declared the Battle of Midway National Memorial, in memory of the fight between U.S. forces and the Japanese, which took place June 4-6, 1942.

"Those who fought in the Battle of Midway won an incredible victory against overwhelming odds, and turned the tide of the war in the Pacific," Babbitt said. "This memorial will ensure that their heroic courage and sacrifice will never be forgotten."

The Japanese military planned to take over Midway in hopes of using it as a resupply area or stepping stone for a bid to invade Hawai'i. U.S. forces had broken the Japanese code and were aware of the plans. The United States launched a surprise attack on the Japanese fleet north of Midway, sinking four aircraft carriers, seriously damaging Japan's forces.




Midway became a wildlife refuge in 1988, and the U.S. Fish and Wildlife Service took over management in 1996 as the Navy gave up control over its remote station there. The last Navy personnel left the atoll in 1997.

The Fish and Wildlife Service has been ordered to form a planning committee made up of federal representatives and members of interested citizens groups to coordinate with the Navy and Marine Corps the preservation of historic buildings, weapons structures and other facilities.

A ceremony to mark the establishment of the Battle of Midway National Memorial is scheduled for June 2001.

**On the Web:**
For more information on Midway, visit *midway.fws.gov*

# Seawall: Jagged, rusty plates a deathtrap

FROM PAGE B1

some site preparation could begin as early as next month.

Tern Island was converted from a six-acre sandbar in 1942 into a rectangular patch of coral with a 3,000-foot runway, providing the military with a mid-Pacific strip from which to conduct air surveillance missions and on which military planes could refuel during long trans-Pacific flights.

The 5th Naval Construction Battalion, the Seabees, built the island by erecting what resembles a giant sandbox, its sides built out of sheet-steel pilings driven into the atoll's coral and sand. They filled it with dredged coral debris from a channel cut through the French Frigate Shoal reef to provide ship access to the end of the island.

When the work was done, the old sandbar had been nearly doubled in length. On one side of the runway, a wider area was created to accommodate buildings, fuel tanks and other structures. From the air, the island looks like a giant coral-colored aircraft carrier.

For the past two to three decades, the interlocking steel plates have been breaking down, and the coral fill that creates Tern Island has been washing out through the rusted breaks. Turtles and seals that haul up on the shore sometimes have crawled through holes in the wall and become trapped. Other animals, like birds, can fall into the holes or become trapped between the interlocking plates.

"Because they often can't find their way out when the tide changes and recedes, these animals often die in the sun," Palermo said.

The rebuilding of the seawall that keeps Tern Island together is expected to take two years. Biologists will attempt to keep disturbance of the animals there to a minimum.

The Fish and Wildlife Service wants to keep the island operational because of its value as a monitoring station for wildlife on the Northwestern Hawaiian Islands.

The service had considered abandoning the seawall, thus giving up the airstrip, but concluded it would be too difficult to conduct needed biological studies without air access.

Tern, about 400 miles from Kaua'i, has the only landing field on the 1,200-mile flight to Midway Atoll. It sits roughly halfway between O'ahu and Midway.

Concrete buildings and watercatchment facilities remain from the island's use by the Coast Guard as a navigation aid station through 1979. A small Fish and Wildlife Service crew has remained on the island since then.

"In order to fully understand the biology and ecology of both migratory and resident tropical animals, year-round data collection is crucial," Flint said.

"Some seabirds live as long as 50 years. To try and understand them and their behavior fully, it is important not only to have year-round data, but to also have data that spans over decades for comparison," Flint said.

Flint is part of a major scientific expedition to the Northwestern Hawaiian Islands to map for the first time the reefs of the islands.

**On the Web:**
For more information, visit *explorers.bishopmuseum.org/nwhi*

# Tern Island project to save wildlife

9/28/00 B1
Honolulu Advertiser
By Jan TenBruggencate
ADVERTISER SCIENCE WRITER

The 58-year-old steel plates that hold Tern Island at French Frigate Shoals together are collapsing and have become a threat to wildlife.

Biologists repeatedly have had to intervene to free seals, birds and other wildlife trapped by jagged, rusted plates.

Sometimes they don't find the animals soon enough.

"Monk seals, turtles, seabirds and even octopus are subject to starvation, dehydration or being impaled when they become caught between the wall and the eroding beach," said Tony Palermo, acting refuge manager for the U.S. Fish and Wildlife Service at French Frigate Shoals.

Palermo and service biologist Beth Flint Monday saved a seal pup that had been trapped behind one of the steel plates.

There is an $8 million federal appropriation to rebuild the wall. Although work will not start until summer, 2000

See SEAWALL, B4

# Buoy drifts from NW isles to French Frigate Shoals



*Star-Bulletin staff*

A large orange buoy that broke loose from waters off Makapuu has been found by the vessel Rapture floating inside the reef on the south side of French Frigate Shoals.

The privately operated Rapture and the National Oceanic and Atmospheric Administration ship Townsend Cromwell are surveying ecological resources of the Northwestern Hawaiian Islands.

Divers inspecting the buoy found it was a fish aggregating device that was dragging a long mooring chain along the coral reef.

The device was one of a string of aggregating devices placed at various sites in the islands by the state Department of Land and Natural Resources to attract fish for fishermen.

State aquatic resources officials estimated the buoy discovered by the Rapture had escaped sometime between 1995 and 1999 and was moved by currents to French Frigate Shoals.

Athline Clark of the Department of Land and Natural Resources said a different buoy recently was found in Midway, and three others broke off and were found in the early 1980s in the northwestern islands.

Although DLNR officials would like to recover the buoy, the divers said it may be difficult because of its size, weight and location within the reef.

If it is determined during a marine debris cleanup in late October that it can be retrieved, it be brought back to Honolu Coast Guard cutter.

6/10-6/11 CONTINUED 2001
Repeat CCL 105
159S-U692, A749
6/10 UP NO MOTO =
U361, U372
TMR Biopt
162S-4C995
36 Dorsal BARNS
MOTO Both SIDES
NO Previous TAGS
165S-W813
166S-U361, U372
W809.
155S-438T, F501
167S-U688, U689
W648, W649
RH 4Ø775B21Ø2
MON 6/11-6/12 TUES.
172S-F608, F485
A819, 3143
173S-A796, G549,
G620, G621
174S-607T, 606T
175S-9368, 9369
176S-
177S-

2001 6/11-6/12

119 2001

180S-G931
181S-10250, 8250
F304, F563
183S-A578
184S-F773 F774, F775
185S-G663 G19
4163ØDGHE
4136ZBH7II
G670, G671
188S-G69 G824
189S-U214
148S-CCL98.5 Biopsy #2
190S-
4136LDØ65B
4136LE191D
191S-A554 G629 W48/W49
192S-CCL101
LH 4077472222
RH 4077347DØ7
SMALL PATCH Fiberglass
6/12-6/13
193S-G755, F238
195S-803C
196S-898C
198S-8181, 8182, 772C, F188
97.5cm COL

1998
Sat Tag 24192

Date: Wed, 31 Jan 2001 14:20:5
From: "C.ROSE" <radarman@arkansas.net>
X-Mailer: Mozilla 4.5 [en] (Win98; I)
X-Accept-Language: en
To: honu@turtles.org
Subject: Coast Guard

I thought you might want to see just one of the USCG crews that "guarded" marine life for many years. My turn was 1971-1972.

Charles K. Rose USCG (RET)

176S-193T, 194T, 9529
177S-U368, U367

178S-6192, 6183, U645, U63
Pits LH 4136321ØØ
RH 4135ICØ365

# Proposed monument for Isles brings discord

10-31-00 BZ THA

By Jan TenBruggencate
Advertiser Science Writer

Native Hawaiians, fishermen, environmental groups and government agencies are wrangling over a quiet federal initiative to designate the Northwestern Hawaiian Islands a national monument.

The move, which Washington sources said could be announced by President Clinton as early as during his Veterans Day visit to the Islands next week, could ban fishing and the gathering of precious corals throughout the 1,100-mile-long stretch of islands, atolls and reefs.

Members of the Hawaiian environmental alliance, Kahea, flew to Washington, D.C., yesterday afternoon to lobby for the establishment of the monument.

"This is the last safe place for seals and turtles," said Kahea member Louis "Buzzy" Agard. "Because regeneration is extremely slow there, the delicate balance of the thousands of diverse species cannot tolerate the pressures of commercial activities ... If commercial extraction is allowed, populations will be wiped out and never return."

Kahea supports a national monument to be surrounded by a national marine sanctuary.

Gov. Ben Cayetano has written the president to oppose the national monument, arguing that the Northwestern Hawaiian Islands are an integral part of the state whose uses for fishing, ecotourism and even the refueling of trans-Pacific aircraft should be protected.

If a monument is established so soon, it will have been done without collecting the views of Hawai'i's people and without fully reviewing the issues, said Kitty Simonds, director of the Western Pacific Regional Fishery Management Council.

"This thing bypasses the public process and all the congressional acts, including the National Environmental Policy Act," Simonds said.

U.S. Rep. Neil Abercrombie said the public must be involved if a new management scheme is to work.

"My experience with the Humpback Whale National Marine Sanctuary demonstrated that the public must be involved in final management plans if it is going to accept those plans," Abercrombie said.

Fishing in the Northwestern Hawaiian Islands is governed by separate fishery council master plans for lobster fishing, precious coral collecting, bottom fishing and pelagic (open ocean) fishing. The council is now preparing a fifth master plan for the protection of coral reefs.

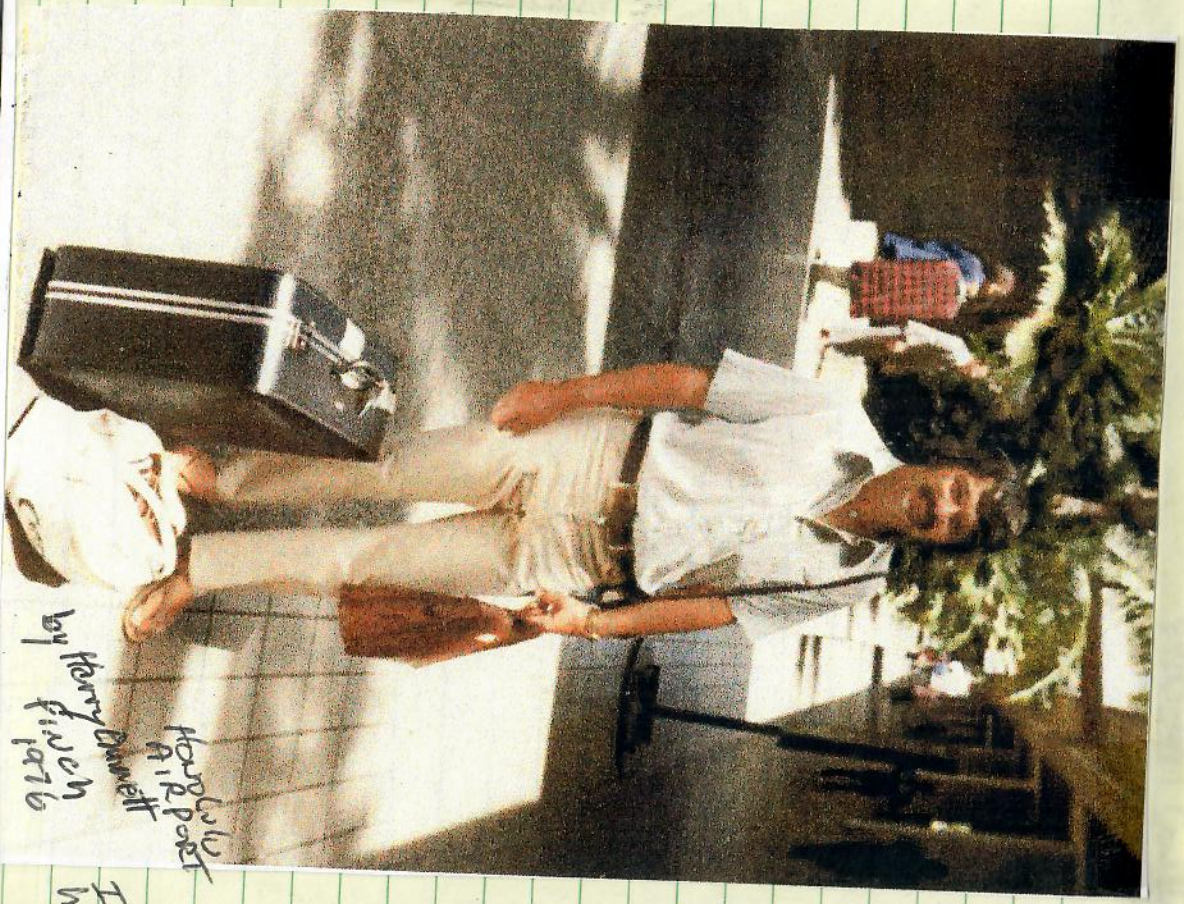
Simonds said she understands that the impetus for establishing a national monument came out of the U.S. Coral Reef Task Force, but she said the primary threats to coral reefs of the Northwestern Hawaiian Islands will not be addressed by establishment of a monument.

"The danger to coral reefs is not overfishing but storms and marine debris," she said. "It's not people. Those islands are 500 miles away."

Kahea member Isaac Harp, of Maui, said the fisheries council and existing regulatory mechanisms do not provide sufficient protection to the islands.

"The remote islands remain vulnerable to exploitation," Harp said.

National monuments can be established by the president without the approval of Congress, under the Antiquities Act of 1906. No president has created as many monuments as Clinton.

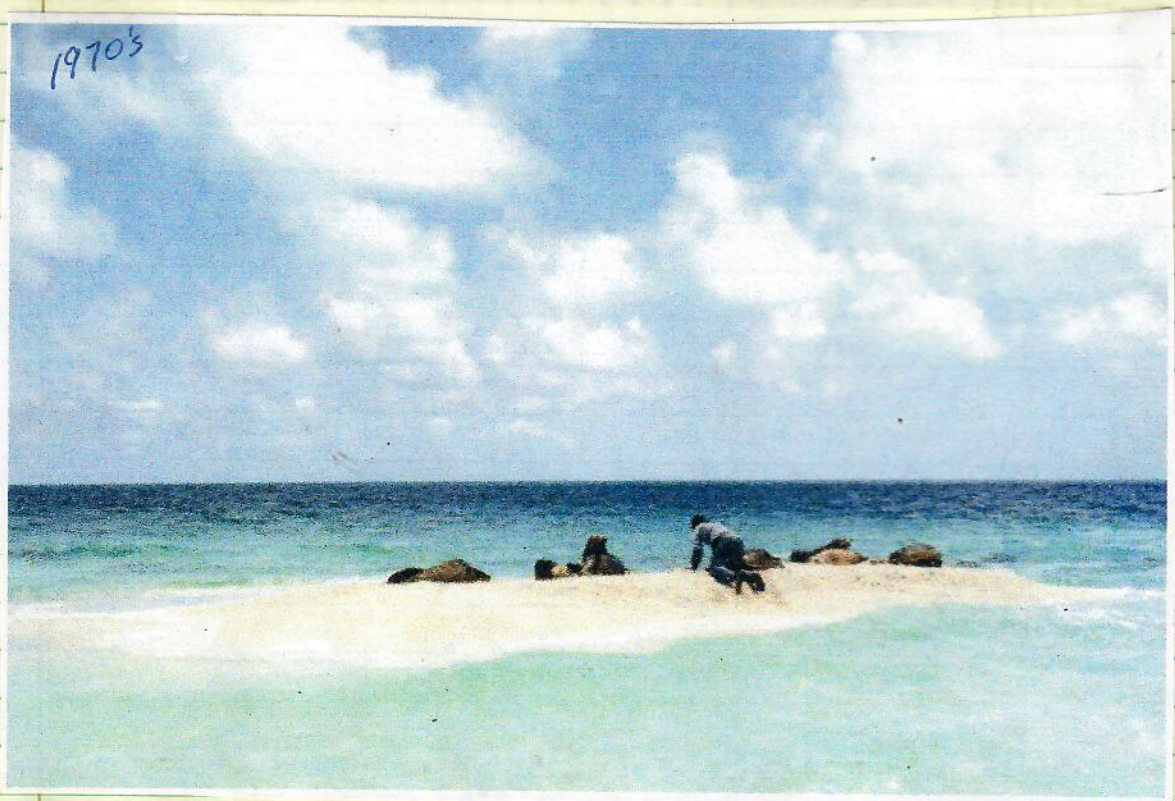


Honolulu Airport
by Harry Bennett
Finch 1976

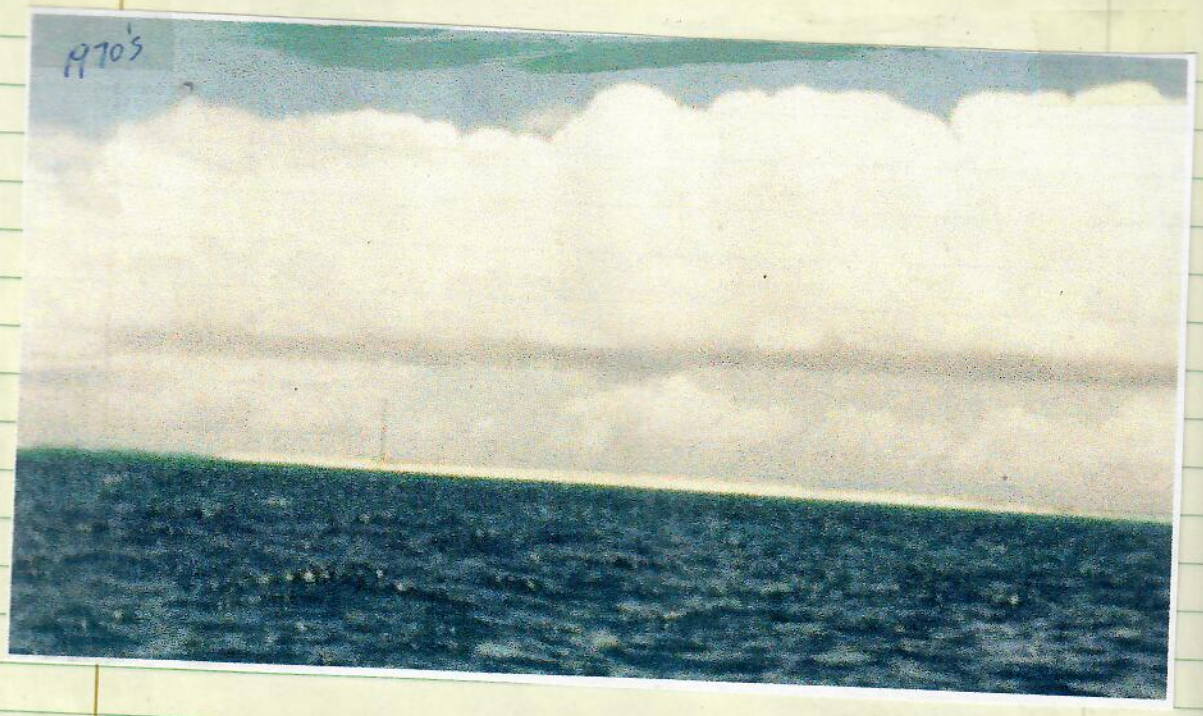
I picked him up

1970's

1970's



1970's



Datalogger deployment sheet, 1999 Julie Rocho TO GB 9/29/99

| Date deployed | Time deployed | Datalogger # | Moto # | Nest # | Date nest laid | Location |
|---|---|---|---|---|---|---|
| 6/4 | | T1 | | | | |
| 6/4 | | T2 | | | | |
| 6/4 | | T3 | | | | |
| 6/4 | | T4 | | | | |
| 5/29/99 | 4:32 | N1 | 87 | 008 | 5/29 | Shell beach. To gaud Temp. logger |
| 6/8 | mid-day | S1 | 65 | 013 | 6/7-no eggs | thought Turt. nested but no eggs ~~seen~~ found Gas pipe area |
| 6/8 | 0700 | N2 - ~~12469~~ | 119 | 14 | 6/8 | Shell Beach |
| 6/12 | 1638 | S2 17469 | 119 | 14 | 6/8 | Shell beach |
| 6/9 | 7:45 · | N3 - 141201 | 69 | 17 | 6/9 | End of RTTR 5. Dug up 7/June 10. Returned June 16 at 1617 |
| 6/10 | 1620 | S3 - 71054 | 69 | 17 | 6/9 | End of RTTR 5 |
| 6/11 | 2251 | N4 - 243579 | 51 | 18 | 6/11 | RTTR 8 |
| 6/12 | 1612 | S4 - 17472 | 51 | 16 | 6/11 | RTTR 8. Found dug up 7/6. Replaced 7/6 |
| 6/11 | 2326 | N5 - 243574 | 72 | 19 | 6/11 | RTTR 5 Retrieved 9/21/99 @ 1150 still blinking |
| 6/16 | 1704 | S5 - 16591 | 72 | 19 | 6/11 | RTTR 5 Retrieved 9/21/99 @ 1224 Not blinking |
| 6/17 | 0354 | N6 - 17470 | 99 | 22 | 6/17 | Tennis court |
| 6/18 | 1638 | S6 - ~~17476~~ | 99 | 22 | 6/17 | Tennis court |
| | | | | | | |
| 7/18 | | FFS 10 | 58 | 69 | 7/18 | Seal rock - back in morning glory |
| 7/18 | 1800 | FFS-T4 16593 | 58 | 69 | 7/18 | |
| 7/19 | 0315 N8 | ~~17473~~ 17469 | 89 | 73 | 7/29 | in Front of $H_2O$ Tanks 9/21/99 Retrieved @ 1412 |
| 7/20 | 1600 S8 | 17471 | 89 | 73 | 7/19 | In front of $H_2O$ Tank 9/21/99 1426 |
| | | | | | | |
| 8/17 | N9 | 141202 | 41 | 7 | 5/29 | retrieved 8/17 @ 1511 from nest chamber |
| 8/22 | | 198448 | 65 | 13 | 6-7 | East of gaspad. One meter data logger |
| 8/23 | | 174109 | 119 | 14 | | Shell beach - nest logger @ ≈1230 removed |
| 8/23 | | 141198 | 119 | 14 | | 1m away from N014 @ ≈1300 removed |
| 8/24 | | 17470 | 99 | 22 | | tennis court - Out @ 0830 |
| 8/24 | | 17468 | 99 | 22 1meter | | tennis court - 1m away a few inches below ground don't know for how long removed 0830 |
| 8/25 | | 17476 | 48 | 21 | | between 1st and 2nd bushes of RTTR8 |
| 8/26 | | 243576 | 87 | 8 | | dug up night 8/25 find 8/26 0745 |
| 9/22 | | N3-141201 | 69 | 17 | | Retrieved 9/22/99 @ = 1530 |
| 9/24 | | 17474 | 58 | 69 | | retrieved @ 1103 behind RTTR6 |
| 9/24 | | 16593 | 58 | 69 | | 1m away - retrieved 1119 behind RTTR6 |
| | | | | | | |

123

124

Date: Wed, 26 May 1999 07:57:57 -1000 (HST)
From: "George H. Balazs" <gbalazs@honlab.nmfs.hawaii.edu>
To: Osha Gray Davidson <osha@pobox.com>
Subject: December 1, 1972

Animal species Advisory Commission

ASAC. Clearly a turning point, but I never knew how significant it would be at the time. I have been wondering.. What would the course of history have been for Hawaiian honu if I had rejected Hilde's hounding of me to testify at the meeting? I did you know, at first. In fact I was quite upset with her at the time, because she had already "volunteered me" without asking my permission. It was with reluctance, and downright fear, that I went. I had no prepared speech, only notes and thoughts based on Carr, Hirth and Hendrickson's writing that I had in recent months read over and over again. There were clearly sea turtle problems elsewhere distant from Hawaii. Serious ones. Could Hawaii's situation be so different, especially in the face of no protection, no meaningful regulations, and substantial hunting by very efficient methods (bullets, use of scuba and turtletangle nets hundreds of yards long (like Alika used on Maui, Molokai, Big Island)? Or, was it "simply" that our heads were in the sand, too many other things keeping state and federal folks occupied? Were the honu, in some mystical manner, just waiting for someone to come along and speak for them? I had read the "The Voice of the Turtle" by Bill Travis (whom I had met) and the title still rings kind to my ear, as it did then.

So what Would have happened if I had not testified, gotten involved? Well, my career would almost certainly have taken a different course. But would it have changed anything for the honu? I think not. Someone else, soon, surely would have come along, grasped the issue, and helped the turtles. So to me, the defining moment of the ASAC meeting was most significant to me, for me. Even if my career- heck, not career- My Life! had not swung to that path, I would have had the satisfaction of knowing I spoke out. I said what I believed needed to be said. I was scared like hell. But the satisfaction of doing/saying what was needed will always be one of the highest points of my life. Bless Hilde for that. Geo.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From p. 119

TAG Recoveries

6/12-6/13/01

1985 (continued) 41361A223D; 41363B3363
1995 - A937, 8158; 41351D7062; 411F2C2C58
2005 - G113, G115, G116; 4077 3E5746; 4077463466
2015 - 10183, 10182
2025 - U882, U881
2035 - (107 CCL!) A627, 402T, A628,
2045 - G688, G689, G690; 41357527 49; 41352E1529
2055 - 747C
Night Basker Sand Point 628T RFF freshly amputated goosenack near wound
2085 - U486, 3756; 4077534A7E; 4077492F61

CCL 100.5

To page 126

Oregon Hughson CA
5/25/99

Dear George,

Thanks for your sweet note + picture. I am sorry I was so slow in answering but... It was such fun to see you + Bill again a special treat. Gilmartin
I am sending you the usual assorted stuff about our favorites Tuttles + hope your scrapbook can take it. I don't have anyone now to file for me. Collecting the material is OK - but then, I am too impatient but I go right on clipping. New Year Resolutions don't help

"Priceless Piece of Real Estate"

For you + other friends I just make a file till I go on a trip + then I sort it + take it all out, I went to visit Lance + the twins + had a great time. He is also a good + informed guide through NT + it's natural wonders. We are also following in Lewis + Clark's footsteps. What a great book + then I read "The Endurance", Shackleton's trip through the ant-arctic ocean, followed immediately by "the Song of the Dodo" by David Quammen. All are mostly works. The

2Y

last one is too, too amazing because the bibliography is endless + utterly impressive. He is a Mountain + Island. I am sure you have read the 'Song of the Dodo' long ago + I may be very late in my enthusiasm.

See you next year but stay in touch.
Aloha
Hilde Cherry

Last letter from her, she died Sometime thereafter.

12

"Survey of fibropapillomataosis among adult female and male green turtles at Tern Island, FFS: Histopathological and viral analysis"

4/99

Thierry M. Work1, George H. Balazs2, Sandra L. Quackenbush3, and James W. Casey4.

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**Introduction:**

Fibropapillomatosis of marine turtles appears to be increasing in prevalence in several geographic locales (Herbst, 1994). Recent evidence has shown a retrovirus (Casey et al. 1997) and a herpes virus (Quackenbush et al. 1998) associated with these tumors in immature green turtle in Hawaii. Evidence of a herpes virus as a cause of FP appears more compelling with viral DNA being associated only with tumored tissues (Quackenbush et al. 1998).

To date, only immature turtles afflicted with FP have been examined for presence of virus. Tumors in adult turtles have not been evaluated for histopathology or presence of viruses. Yet, information such as age distribution of infection with these viruses is critical to understanding the epidemiology of FP in marine turtles. Information on fibropapillomatosis in adult turtles may help us elucidate whether adults are more resistant to tumor formation or whether there is the possibility that tumors in adults are regressing (as evidenced by a more pronounced cellular response in tumored tissue compared to immature turtles.

Our specific objectives are to:

1) Characterize histopathology of tumors on adult male and female green turtles.
2) Examine tumor biopsies for presence or absence of viral DNA or RNA.
3) Obtain plasma for future serologic surveys for herpes and retroviruses.
4) Obtain blood smears and packed cells in fixative to characterize blood cells of adult green turtles.

**Methods:**

This study is designed to complement ongoing contaminants studies on Tern Island. Adult nesting females and adult males will be bled to evaluate their exposure to contaminants. We propose to take biopsies of tumors and normal skin both in formalin and frozen in liquid nitrogen. These samples will be evaluated for histopathology (formalin) and for herpes and retroviral genomes (frozen sections). Unaffected skin from tumor-free and tumored turtles will be taken as internal control. Plasma (5 cc) will be procured for banking and plasma biochemistries. Tissues to be frozen will be stored in liquid nitrogen on site.

from p. 12

Frozen sections will be analyzed for viral genome as previously described (Quackenbush et al. 1998; Casey et al. 1997). Sections in formalin will be examined microscopically. Blood will be processed as decribed (Work et al. 1998).

2095-6397, 6398
2105-6765, PAU

**References:**

Casey, R. N., S. L. Quackenbush, T. M. Work, G. H. Balazs, P. R. Bowser and J. W. Casey. 1997. Evidence for retrovirus infections in green turtles *Chelonia mydas* from the Hawaiian islands. Diseases of Aquatic Organisms. 31: 1-7.

Herbst, L. H. 1994. Fibropapillomatosis of marine turtles. Annual Review of Fish Diseases 4: 389-425.

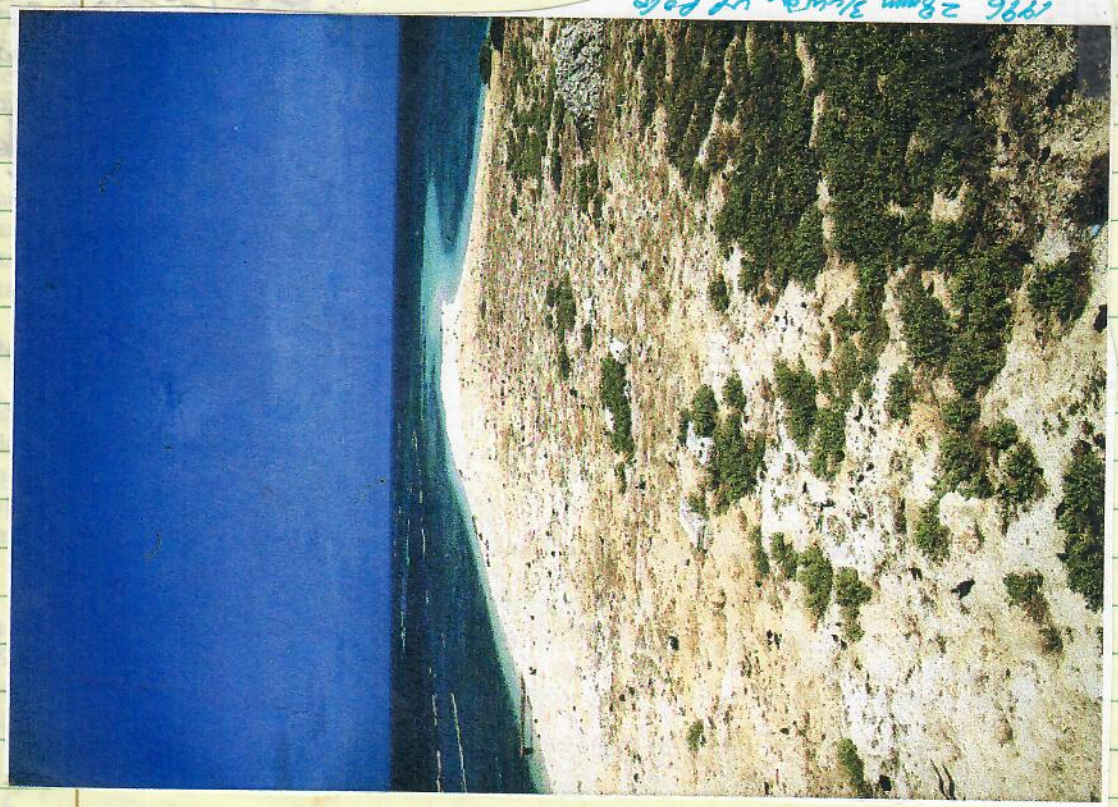
Quackenbush, S. L., T. M Work., G. H. Balazs, R. N. Casey, J. Rovnak, A. Chaves, L. duToit, J. D. Baines, C. R. Parrish, P. R. Bowser, and J. W. Casey. 1998. Three closely related herpesviruses are associated with fibropapillomatosis in marine turtles. Virology. 246: 392-399

Work, T. M., R. E. Raskin, G. H. Balazs and S. Whittaker. 1998. Morphologic and cytochemical characteristics of green turtle (*Chelonia mydas*) blood cells. American Journal of Veterinary Research. 59: 1252-1257.

1970's - 1973?

- List of FFS shark stories -
- USGG off shark whaler flipped while fishing Cook with boots on walked ashore Shark IS.
- USFWS whaler flip out side reef off Gins Keolin Clay Grounding
- Keola lobster boat sinking - people stranded on Gins = Little Gin
- USGG whaler to Guam

1986 28mm Skyline VT Park



WALK SOFTLY

x

Walk softly stranger.
The land on which you stand is Holy Ground.

x

For here where seabirds make their home --
Men of The Coast Guard once called it home.
From here, a signal pulsed to guide the lost
And weary traveler far from home.
And though this silence -- broken now and then by sounds of birds,
Gives no hint of voiceful mirth and laughter;
Yet, to those long gone, it was home -- away from home,
A place of unspoiled beauty,
Colored by The Hand of God.

x

And you who stand upon this land
Will someday too,
Remember sunwashed sands and quiet days,
And moments crystalized in time.

x

Walk softly stranger.
For you stand on Holy Ground !

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---------- Forwarded message ----------
Date: Mon, 31 May 1999 21:07:07 -0400
From: Peter Bennett <honu@turtles.org>
To: gbalazs@honlab.nmfs.hawaii.edu
Subject: Mahalo

FF

Aloha George,

I know Ursula has already said this or something similar, but I wanted to thank
you myself for all you've done for the honu over the past 25 years. Working on
the FFS slide show once again brought home the realization of what it is you've
accomplished over the years. The fact that you spent so much time on that
little pimple in the middle of nowhere that we call East Island speaks volumes
about your dedication to the turtles. For that, a sincere and heartfelt mahalo.
I know, you think you were just doing your job, but that's not how I see it.
Nobody would stick with that job without a strong and passionate love for the
honu.

We get a lot email from people who have visited Trax. I have a standard signoff
line that I use, but it means an order of magnitude more to me now that I am
writing it to you: Thank you for caring about the turtles, they need all the
friends they can get.

Your friend and admirer,
Peter