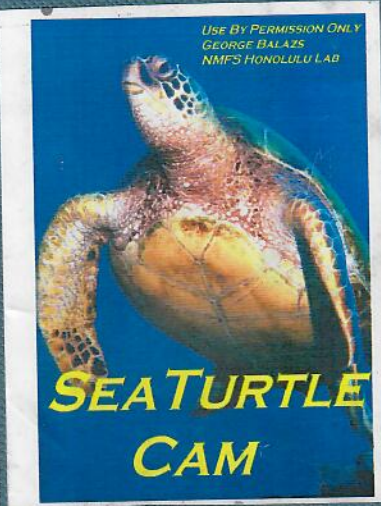




FRENCH FRIGATE
SHOALS

SeaTurtleCam Phase II 21-27
SEPT 2007
SATELLITE LINK



Taggings and Resights all
keroked 8/2010
**SEE MORE
WILDLIFE**
S Y S T E M S

G.H. BALAZS



U.S. DEPARTMENT OF COMMERCE

CD0001269219

SeaTurtleCam Phase III 11-17
THERMAL IMAGING
SEPT. 2007

USCG C-130 24 OCTOBER
2009

"East Island -
A THREAD of
What it was, GB
Shifting Sands
of Time"

Mid 40s to Mid 2000s

Compare GBR islets



G.H. BALAZS



9/16/07 423FS32F67 PH
SATURDAY 9:30pm Tern - NESTING FEMALE
SKKM GB and KONRAD Schaad

6/8/2011 OVERFLIGHT OF FFS page 61

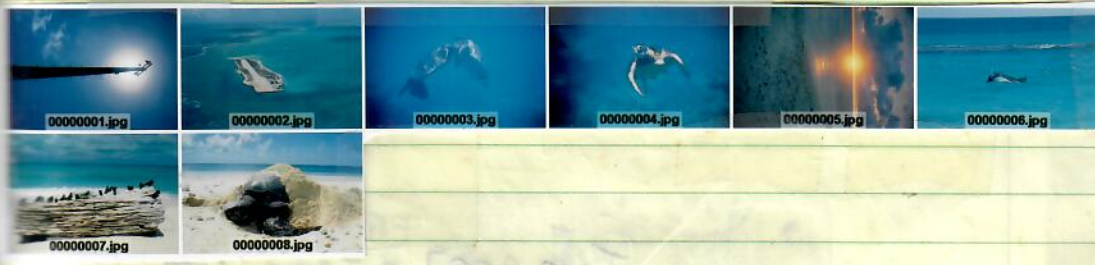
Year	Area (Acres)
1923	9.6 Acres
1968	11.3 Acres
2004	6.3 Acres
2007	7.8 Acres
2008	7.2 Acres

FROM
ANTONZELIS

38th Season 2010
East Island

MT 1-231
underscored

IP 148.63.55.154¹



Post 2
9005

Remote Robotic Interactive Imaging Research
RRIRR

9/21
Tues

* IIRRR = Interactive Imaging Remote
Robotic Research (of Marine
Turtles)

Interactive Robotic Imaging Remote Research
of Marine Turtles

** IRIRRM

* Remote Interactive Robotic Imaging Research *
RIRIR

ROAD RUNNER

Main user ID
BAKAS6001
MSW SEI973EROD



EAST ISLAND
JUNE 2007 - Image A Tony Saunders

right
ONE

IRIRR PHASE II Sea Turtle C

9/21/04 Depart Bob justman Copilot Max
Tuesday at 7:15 AM Me, KONRAD, Shaun
and Shaun ^{missed} 3 hours + Saw Necker
to the south. Circled east.

Cari Eggleston + 3 departed.
Chris Eggleston + 2 still here,

Konrad, Shaun, and I unpacked satellite
dish - wet from ^{SHH} offload.

^{examined} Checked all gear - moved "Lunar Module"
to concrete slab - evaluated.

Moved with John Deere to top of
Steel container,

^{patrolled} Walked with Shaun around Tern Island.

Evening - 9 pm Konrad, Shaun and
I walked across Ternis
beach and along South Beach -
quite a few ^{fresh} hatchlings - 15,
in 5 areas. Got crab killed.

right
ONE Walked to NE sand bar - saw
rock containers dug sand creating
a hole pool of water.
Wind had built up sand - turtles
nested along end.

Walked back along the "pipeline"

steak dinner in Sauge (village?)
hatchling barriers - found 9 alive
and took pictures

9/22/04 Wednesday
up 7 AM. Found out that
Daniela's plane from Anchorage
didn't depart. Bob Justman,
MAX and Marc Rice flying
out. Arrive ~ 10 AM +
1 hour turn around - Shaun and Cari
depart. Spagetti dinner

Marc, Hannah and I worked all day
bolting in the "paws" of the satellite
dish. Finish main installation,
walked for hatchlings.

Night
Two

- Need - - Excavation - no longer happening
- Collect & freeze dead hatchlings
- need hatchling predation study
- frigates (Repeat)
- Coabs
- Fish → Apply for permit.

9/23/04 Thursday
Plane again - Third day in a row.
Daniela and gear (satellite modem
etc.)

electronics
Proceeded to install
radio parts on Dish - cable
across roof to Computer Room

Signal
11.5

New Dell CPU.
Took most of the day. But later
changed
back to
old CPU

TERN

9/23/04
Thursday
Night
Three

Chris, me Marc Daniel ^{late} walk
for hatchlings -

est 43 cm SCL
juvenile = FH 442 F ϕ A 7 E 79

and adult male (no PIT) ~~kerol~~
basking at CRAB Beach. ~~NOT DS~~

Shell beach has hatchling barriers
around it. Rocks ~~spell~~ but ~~used~~
at water's edge. Rocks w sand.

Pork chops for dinner - we cooked.

9/24/04
Friday

DAY OF FAST FOR DANIEL

9 AM video conference ^{wife = list}
with Marc's School ^{later - saw born.}
cancelled after call from Jennifer. ^{EU}

at 1030am Departed in NMFS
mark seal whaler for East. Chris
+ Alex + R. also in large FWS boat.

Night
Four

Spent day on East Horned w
pole chipping the 2 cameras
for new ones. Filling washers.
^{windshield washers.}

Many digital pictures + some video
and 35mm ^{and} nesting tracks from at least
Departed East ~ 4 PM. ^{5 DAYS AGO.}
Returned through Round Reef.

→ [EMAIL from Cody saying Marc's mother
died this morning.

Vegi Burgers for dinner.

6
Objective
TO obtain
PREDATION
RATES

→ Studies Needed
Needs List

- Shovel
- Seawater Samples ^{yes}
- Soil Samples ^{no}
- photo on concrete pile ^{not done}
- photo in honu whaler ^{not done}
- photo in new honu whaler ^{yes}
- photo on container w/ Hawaiian Monk Seal Research + NOAA Shunt
- Honulani flag photo ^{yes}

TRIPOD
Banner TO East

Chain Saw/gear/gasoline

- Chaps

- Sawdye?

- Stickers on fish

- Bird net in Dish/fruit

- Sand bags w/ container

- Radio Shack Power Supply - Chris?

- Satellite dish manual - Dept. Comm. Property

Not. Gear to Chris.

Instruction video.

Thermal imaging? ← TT

Sat tagging - tag numbers - Denise?

Resight

Extended for OTDR

wo
9/2
Fred

9/2
S

took
So

Resight 9/24/04 9:21 AM CRAB Beach Ad. H →
4136094F27 LH

CL 92 cm TERN SHORT PC's halp
NO PIT LH & LFF

with large ♂ no PITS
against seawall (maybe the same turtle)
walked S. Beach for hatching or lost my log
and "hatching pipeline" back along runway.
9/24/04 wrote up notes - to bed
Friday ~ 11:45 PM.

9/25/04 TO EAST ~~Island~~ ~ 10 AM
Saturday Daniel me Konrod & Marc.

took chain saw
Konrod charged out a
saw on pole. ~~Thereafter~~
I took series of pictures, helped.
Konrod started chain sawing log -
Marc dug out data loggers.
Daniel videoed aspects of the
island / birds / seals.

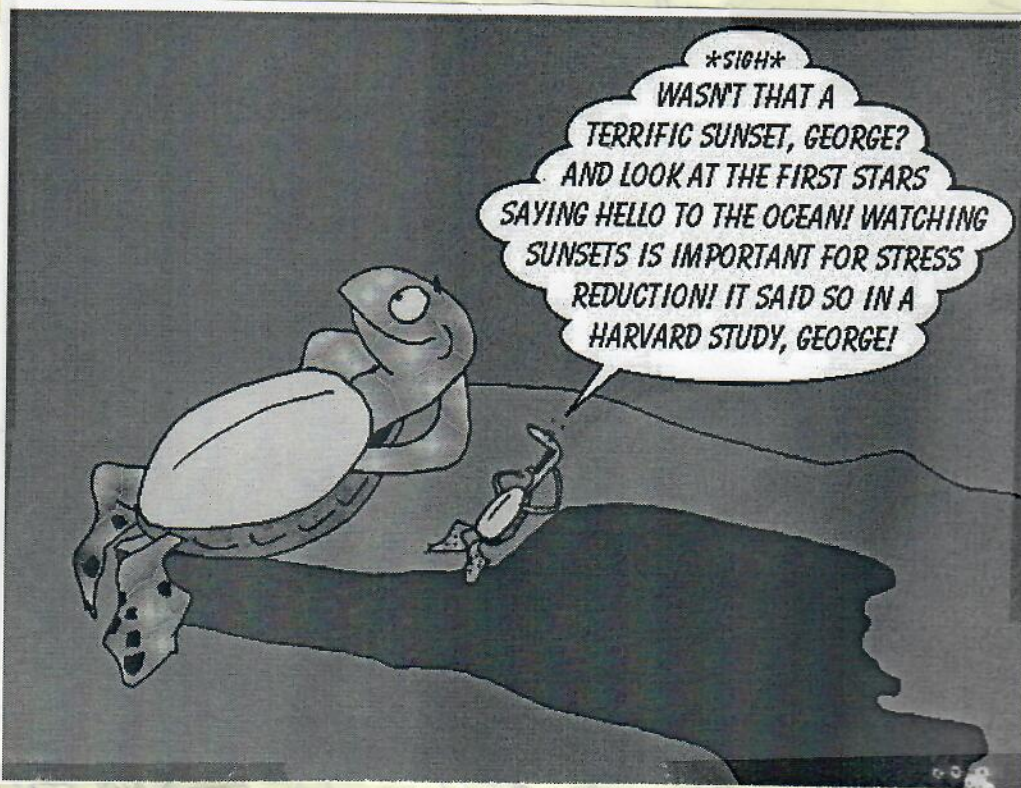
Marc and I found an emergency
site - at surface - took out
104 and let them go.
No fish predation noted + 07
frigate birds either.
Departed East ~ 4 PM.

Cody 277-6481
286-4377

Jeremy Mize
~~Winston-Salem, NC~~
Winston-Salem, NC

sent
Hood

Risha Sparhawk
79 Union St Apt 23
Camden ME - 04843



Saturday night
9/25/04 2138h

CRAB Beach TERN

Male - RH = 4136030C79 - Photo Taken
Same as previous night when we read RH
92cm CCL from previous night.
No metal tags on front flippers.

Yard of
OTAPES
8/2010

noted that Shell Beach is terrible
for hatchling emergence - at least
day or two toward especially
dig out rescued some hopelessly
trapped.

Friday
9/25/04

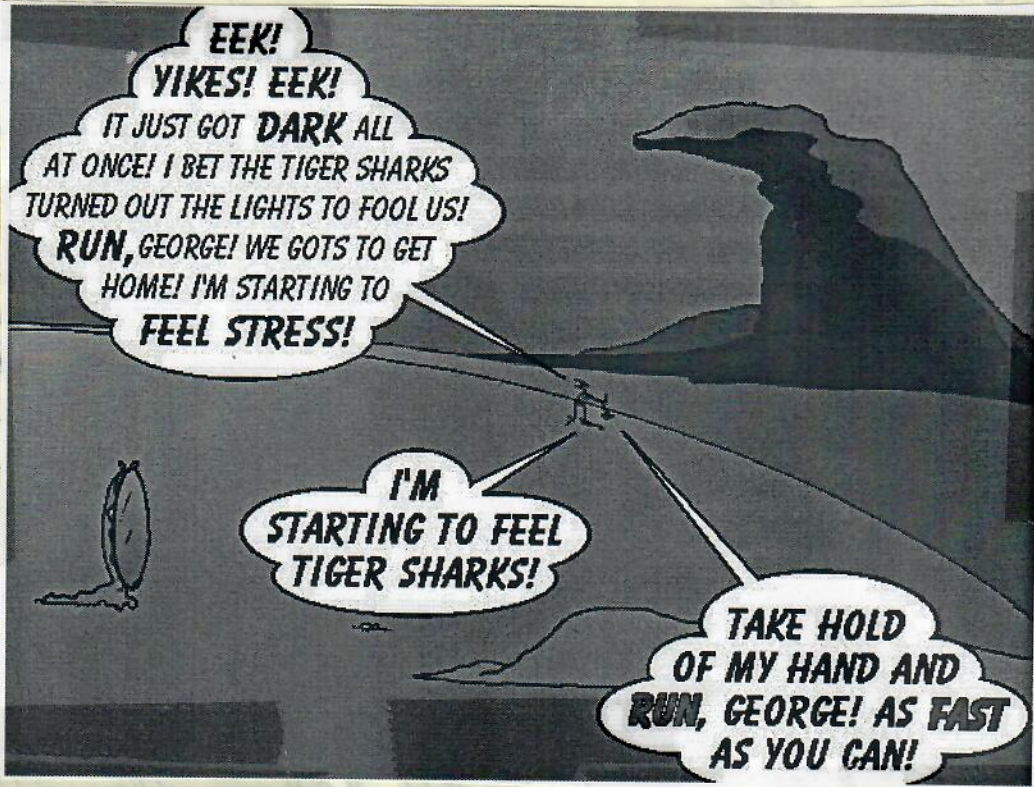
Marg & I
Remove "NE Beach" (inside sea wall
where sand slopes)
on hatchling walk - Removed 7 hatchlings

Redd
NOAA
Turtle
Cam
stickers

laying dormant at the surface for nearly
18 hours. All became vigorous after
a short time in my back pack.
Dig down very deep and removed 47
move all alive and healthy but
couldn't help some out on their
own. Let them go in moon light
at NE Beach N side - all
swam out fine - no sign of fish
or frigate interest/predation
at least not close to shore
where we could see.

Sunday
9/26/04 Late start to east - ~ 1130pm
Korrod up pole for more work.

(3) of us started chain sawing,
Daniel didn't go out
Ivconel tags pounded into as
many pieces as possible - likely 22 or 23.



9/26/04 • All pieces drifted long-shore
Sunday sand to west - then off left's end
to the sea.
Did walk-around video.

Departed ~ 4:30pm
washed and stored ^{WRTS} boat -
had loose connection in battery
+ gear cluster reverse - adjusted.
Cleaned up and packed.

Did hatchling walk.
Noted crushing of skulls some
decapitation of
Daniel mentioned that at end of
season bears only kill ♀ salmon
and only eat their heads. Something
similar happening for crabs w/ hatchlings?
Hatchling walk late Sunday night
but didn't go to Crab or Shell Beaches.

9/27/04 Packed/organized all wiring.
Monday plane arrived ~ 10 AM
with Radio Shack power supply.
Installation canceled with
picture down & video card "fry"
Daniel installed old PC
picture up when we departed
at ~ 3 PM.

Grace of God
and the
Shaw of the
peach!

*One hundred years ago, on February 3, 1909,
President Theodore Roosevelt designated the islets and reefs
from the island of Nihoa to Kure Atoll - excepting Midway - as the
Hawaiian Islands Reservation.*

*This conservation achievement protected millions of seabirds
from extreme harvest and provided a safe haven for wildlife to thrive
both on the islands and in their surrounding waters.*

Later renamed the

*Hawaiian Islands National Wildlife Refuge,
the protection of this unique place laid a foundation
for the creation of our nation's largest conservation area,
Papahānaumokuākea Marine National Monument.*

*The U.S. Fish and Wildlife Service respectfully invites
your participation in a celebration to commemorate
the centennial of this historic action and to share in the vision
of a healthful future for the wildlife and culture
in the Northwestern Hawaiian Islands.*

February 3, 2009

5:30 pm to 8:00 pm

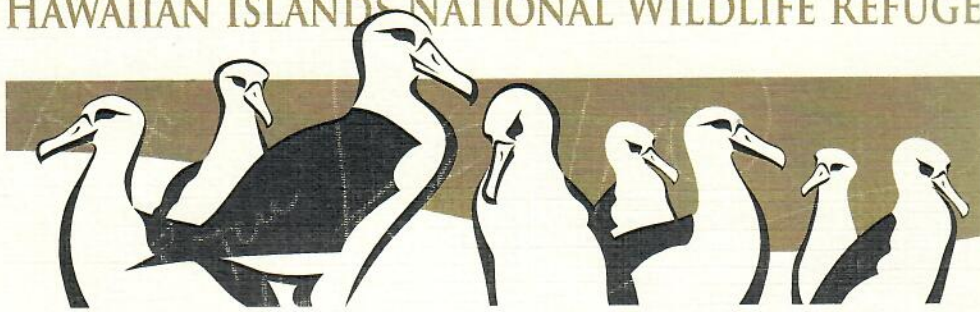
*Kīlauea Point National Wildlife Refuge
Kīlauea, Hawai'i*

*Please RSVP to Kathy Nelson 808.792.9518
no later than January 20, 2009*

*You are encouraged to bring stories and hard copy photographs to share,
a flashlight, and a raincoat in the event of inclement weather.*

OVER

HAWAIIAN ISLANDS NATIONAL WILDLIFE REFUGE



ONE HUNDRED YEARS

12

OVER

*The U.S. Fish and Wildlife Service respectfully invites
your participation in a celebration to commemorate
the centennial of this historic action and to share in the vision
of a healthful future for the wildlife and culture
in the Northwestern Hawaiian Islands.*

February 3, 2009

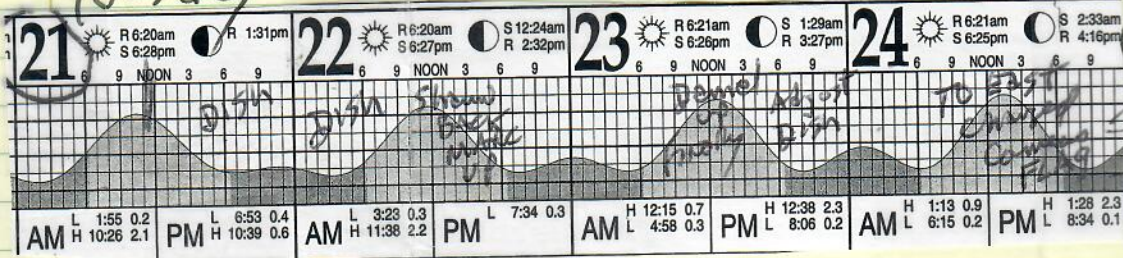
5:30 pm to 8:00 pm

Kilauea Point National Wildlife Refuge

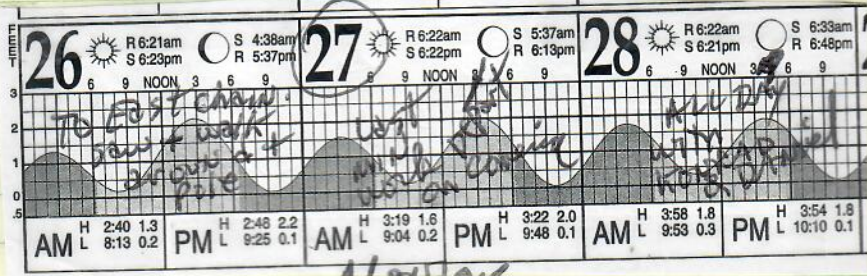
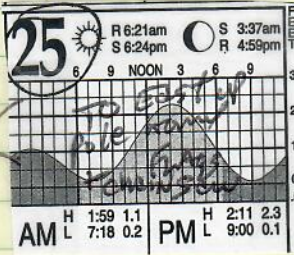
Kilauea, Hawai'i

Sept 2004

Wednesday



note
- Eric
GB School



Monday



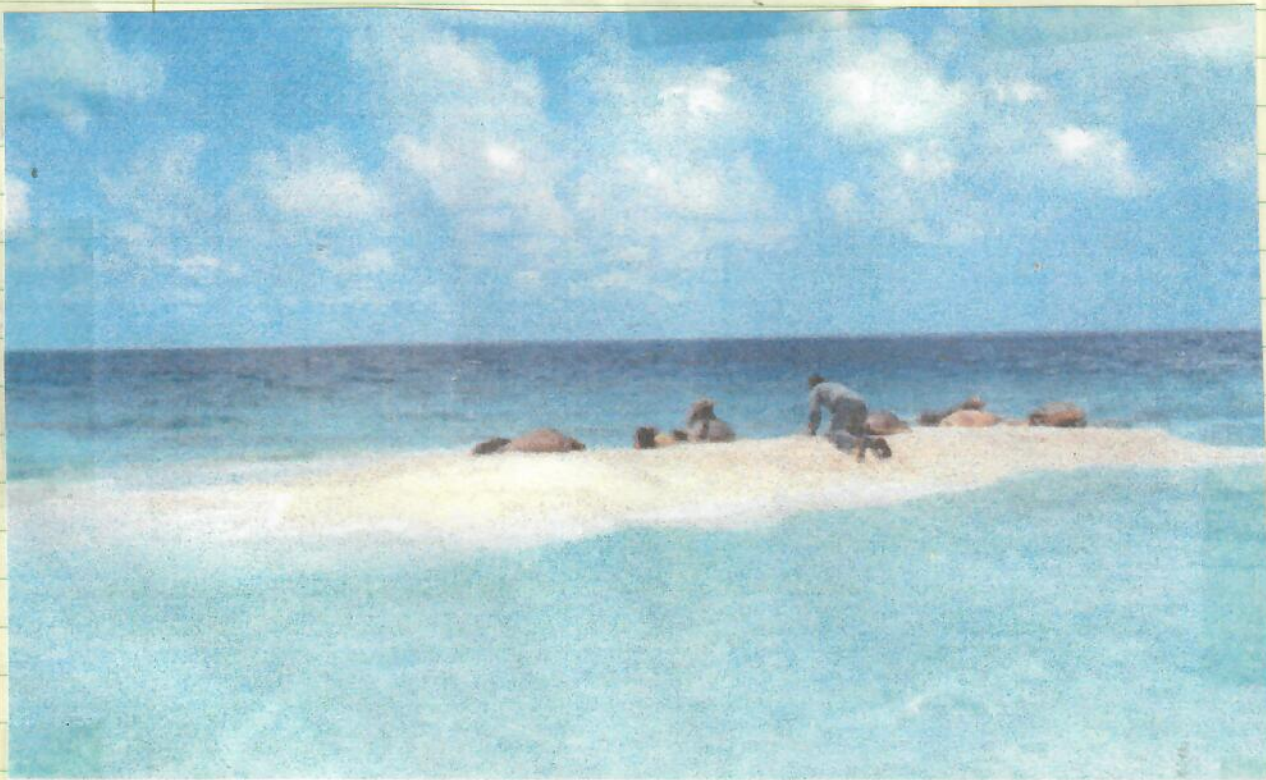
IN Honolulu

Camera Repair
By JOE SPRING
JUNE



note: The other 24
Tags in this series were found
into chunks of the log
and "cast adrift"

Left good



THIS PHOTO TAKEN AT French Frigate Shoals May 8, 1976, on my trip back to where I was stationed in 1945. The man attempting to Tag a Turtle is George Balazs from

Date: Mon, 4 Oct 2004 16:58:49 EDT
From: SeeMoreDZ@aol.com
To: gbalazs@honlab.nmfs.hawaii.edu, mpawuk@seemorewildlife.com
Subject: Re: snap picture

[Part 1, Text/PLAIN 12 lines.]
[Unable to print this part.]

After the fifth one, the next will appear in the right side and begin working its way to the left. You can shift-Click on the picture to open the folder where the pictures are placed.

Also, please see:

<http://www.seemorewildlife.com/userdocs/interface.php>

for more info...

Take care,
DZ

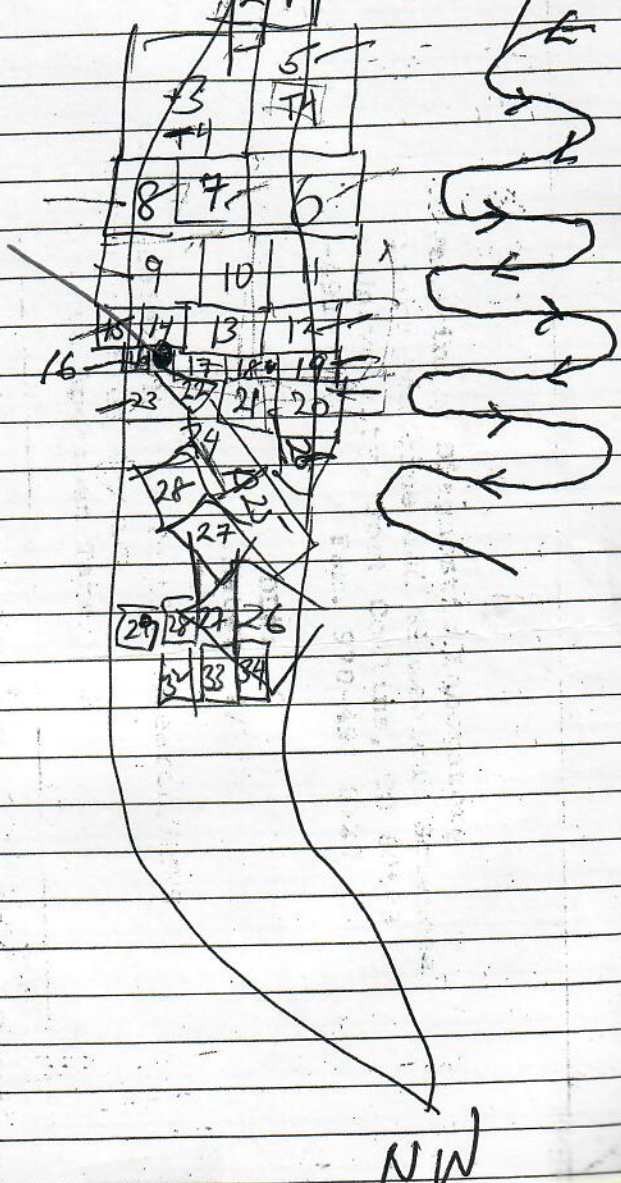
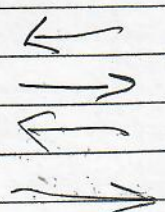
From seat. View Right - stop at
~~fastest, off~~ ^{stuck} ~~100~~ ¹⁰⁰ ~~100~~ ¹⁰⁰ ~~100~~ ¹⁰⁰
 5/29/03
 Camera 3 Top camera top turtle
 ✓ P1 - ~~SEP~~ Banking → (T5)
 ✓ P2 - (T5) NEP
 ✓ P3 - (T5) -
 ✓ P4 (T4) -
 ✓ P5 (T4) -
 - P6 (T4)
 - P7 (T3)
 ✓ P8 (T3)
 - P9 (T1)
 ✓ P10 (T1)
 ✓ P11 (T1)
 ✓ P12 (T0)
 ✓ P13 (T0)
 - P14 (T0)
 - P15 (T0)
 - P16 (T0) - pole down
 - P17 (T0)
 - P18 (T0)
 - P19 (T0)
 - P20 (T0)
 ✓ P21 (T0)
 - P22 (T0)
 - P23 (T0) same
 - P24 (T0)
 P25 (T0) T2
 - P26 (T0) T3
 ✓ P27 (T3)
 P28 (T3) MT. Balays
 ✓ P29 (T2) shoreline ←
 ✓ P30 (T4) ←
 ✓ P31 (T4)
 ✓ P32 (T4)

22

BALAZS & MARE

- Presets Done over
2 5-hour periods
5/29/03
Thursday

SE



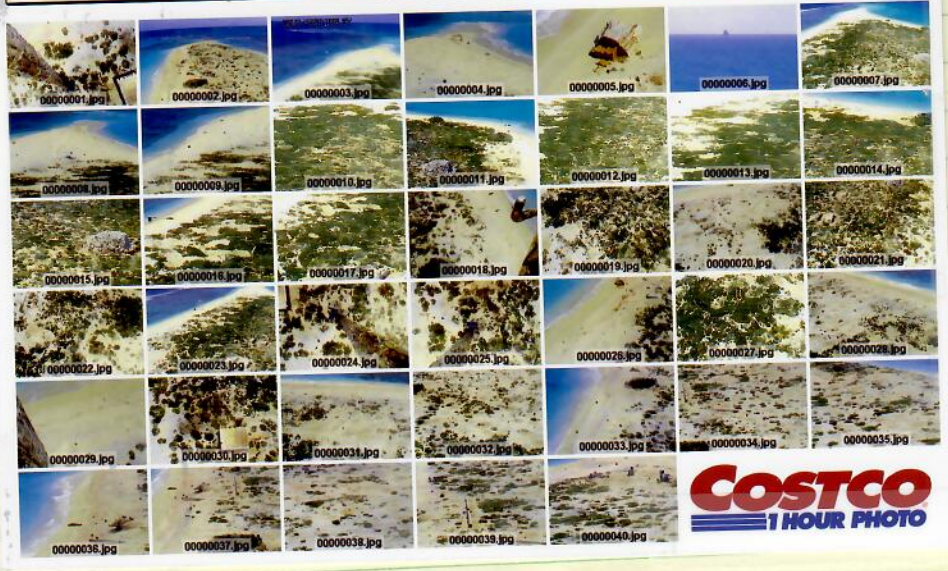
9/26/04



NW

Notes:

004959
10/10/2004



Notes:





h2.h26

Date: Sat, 19 Feb 2005 21:09:54 -1000 (HST)
From: George H. Balazs <gbalazs@honlab.nmfs.hawaii.edu>
To: FFS TERNUSFWS <Hinwr@aol.com>
Subject: For Domo and Jen at Tern

For Domo and Jen amusement at Tern--

Basking turtles at FFS- written sometime before 1941.

"Passing over a few stragglng sand bars, which were poking out of the varicolored coral-painted ocean at odd spots, the skipper noticed on one of the strips a drove of huge turtles sunning themselves. We suddenly got the signal to slide over the echelon, followed by the attack signal. Down we came. Alex held the nose of his plane right on the backs of the lazy turtles, and seventeen of us poured down right behind him, engines gunning and propellers whining. We pulled out some fifty feet over the broad, shining backs, one after another, expecting to see the turtles splash into the water to escape what must have appeared to be certain death. To our amazement, there wasn't a stir among the bold critters, not even so much as a raised head or outstretched leg! When I pulled up again into formation, Nuessle turned around, scratched his head under his helmet, and looked askance at me, as if to say, "How do ya like that!"

That is the way Navy flying sometimes goes, and your skipper has a good reason for it. After all, he sits up there in the lead plane, figuring, estimating, planning, flying his plane, and leading his squadron into attacks and maneuvers. He feels the urge to kick up his heels, too, and when the proper time comes you may find yourself trying to hang in a "squirrel case," a pleasant follow-the-leader maneuver in which the skipper dives, rolls, Immelmans, and loops, with seventeen fighting planes chasing along after him like a long line of skaters cracking the whip. Or, of course, you could be attacking a flock of mammoth turtles, around French Frigate Shoals, aghast when they almost yawn in your face as you scream by! It serves to break the tension of long patrols, and after weeks of pure concentration on the art of aerial destruction you are happy to whip around the sky a bit for the "sheer hell of it."

```
*****  
*           George H. Balazs, Leader           *  
*           Marine Turtle Research Program      *  
*           NOAA, National Marine Fisheries Service *  
*           Pacific Islands Fisheries Science Center *  
*           2570 Dole Street                     *  
*           Honolulu, Hawaii 96822-2396 USA      *  
*           Tel: (808) 983-5733                   *  
*           Fax: (808) 983-2902                   *  
*           gbalazs@honlab.nmfs.hawaii.edu       *  
*****
```



27 MAY 1894 - CAPTAIN JAMES A. KING
14-16 NOVEMBER 1977 - GEORGE H. BALAZS
ANNEXATION HILL
NECKER ISLAND

15 Oct 2004 14:31:04 -1000
George H. Balazs <gbalazs@honlab.nmfs.hawaii.edu>
George Balazs <gbalazs@honlab.nmfs.hawaii.edu>
Subject: Photographic overview of PhaseII accomplishment SeaTurtle Cam (and partial removal of sand-eroding log) (fwd)

----- Forwarded message -----
Date: Fri, 15 Oct 2004 14:22:20 -1000
From: George H. Balazs <gbalazs@honlab.nmfs.hawaii.edu>
To: Jennifer/ChrisFFS TERNUSFWS <Hinwr@aol.com>
Cc: Jerry Leinecke <jerry_leinecke@fws.gov>, Dominique Horvath <Dominique_Horvath@r1.fws.gov>, Beth Flint <Beth_Flint@r1.fws.gov>, Don Palawski <Don_Palawski@fws.gov>
Subject: Photographic overview of PhaseII accomplishment SeaTurtle Cam (and partial removal of sand-eroding log)

*Print
Email w
Receipt*

Today I mailed you-all a small photo album showing step-wise what we did out at the FFS Refuge for Phase II SeaTurtle Cam. As you know it was very successful in all aspects. I am in the process of testing the system from my office, there are some small software bugs but Daniel and Team are taking care of them one-by-one from their end in Alaska.

In essence the pictures I sent show the setup and installation of the satellite dish, the fine-tuning adjustment to within 1 cm to "link" with the satellite, and the testing of the control panel working with the home-office in Alaska. Pictures also show the changing of the two robotic cameras on the pole on East Island and installation of brand new upgraded ones. All the electronics in the existing wooden box at the base of the pole were in perfect condition (after 14 months since set up).

The last thing the pictures show is the successful and safe partial removal of the island-eroding log. Our work time for this portion of the project was limited by other priorities, but I'm pleased to say that about 50% of the log is now gone (in small pieces) to the western Pacific where it was meant to go in the first place when it drifted away years ago from the US/Canadian mainland. I am hopeful that enough of the log's mass was reduced so that storms this winter will move it off the beach and send it on it's way.

Tests of block

The bonus of our PhaseII SeaTurtle Cam satellite link is that Tern Island FWS now has virtually unlimited night time internet access (but please don't download large music files etc.)- as my program's cost-free contribution, at least for the foreseeable future to the FWS.

*MATT
need
will
step-by-
of and
stand-a
PC*

More to follow in due course. I propose that we meet within the next month or so. Aloha, George

* George H. Balazs, Leader *
* Marine Turtle Research Program *
* National Marine Fisheries Service *
Pacific Islands Fisheries Science Center
* 2570 Dole Street *
* Honolulu, Hawaii 96822-2396 USA *
* Tel: (808) 983-5733 *
* Fax: (808) 983-2902 *
* gbalazs@honlab.nmfs.hawaii.edu *



>> ENDANGERED SPECIES

TOWERS OF TROUBLE FOR HAWAIIAN BIRDS

Conservationists sue FCC for its failure to communicate



The Federal Communications Commission (FCC) isn't doing what it should to protect native Hawaiian birds from fatal collisions with communication towers on Kauai and the Big Island of Hawaii, say a trio of conservation groups.

The Endangered Species Act requires the FCC to consult with the U.S. Fish and Wildlife Service when towers may affect federally listed species—in this case, the threatened Newell's shearwater (above) and the endangered Hawaiian petrel. But the agency has not yet done so, according to a lawsuit filed July 27 by the American Bird Conservancy, Forest Conservation Council and Conservation Council for Hawai'i (CCH), an NWF affiliate.

"Building towers hundreds of feet high, near populations of endangered birds, without any environmental review, when scien-

tists know that millions of birds collide with towers like these across the country, is unacceptable," says Marjorie Ziegler, CCH executive director.

During breeding season, shearwaters and petrels are active at night, flying out from their inland burrows before sunrise to forage in

the ocean and returning after sunset. The lawsuit says towers pose "a substantial risk of collision and death to these birds, particularly young fledglings," because the night fliers can't easily see the structures and guy wires, or they may become disoriented by utility lights.

"We're not saying 'no towers,'" says Ziegler. "We're saying consult, to find ways to minimize the impact on birds."

The groups list reducing tower height, eliminating guy wires and using white strobe lights instead of red pulsating lights among the potential life-saving modifications.

Date: Mon, 13 Sep 2004 09:28:04 -1000
 From: George H. Balazs <gbalazs@honlab.nmfs.hawaii.edu>
 To: Bud Antonelis <bud.antonelis@noaa.gov>, John R. Henderson <John.R.Henderson@noaa.gov>
 Subject: Proposal ammendment request for Phase II of a digital imaging experiment to remotely monitor sea turtles and their habitats at East Island FFS (fwd)

Xerox and
 tape into
 FFS

Bud and John- I am on annual leave today but wrote the following at the recent request of FWS Jennifer. I don't (and didn't) foresee an amendment being needed to our SUP permit because the work we will be doing September 21-27 will be a continuation (Phase II) of the May 2003 work already approved long ago by FWS. I foresee no problems with FWS they just wanted to have things spelled out a little more for the forthcoming trip. No action on either of your parts is needed at this time. Everything will be fine. Mahalo, George

----- Forwarded message -----

Date: Mon, 13 Sep 2004 08:48:28 -1000
 From: George H. Balazs <gbalazs@honlab.nmfs.hawaii.edu>
 To: Jennifer Tietjen <Jennifer.Tietjen@fws.gov>
 Cc: Beth Flint <Beth_Flint@r1.fws.gov>, Don Palawski <Don_Palawski@fws.gov>, Jerry Leinecke <jerry_leinecke@fws.gov>, FFS TERNUSFWS <Hinwr@aol.com>, Dominique Horvath <Dominique_Horvath@r1.fws.gov>
 Subject: Proposal ammendment request for Phase II of a digital imaging experiment to remotely monitor sea turtles and their habitats at East Island FFS

Jennifer and FWS colleagues- As requested, I am sending you in this email the specific information on the installation of Phase II of the remote monitoring project currently operational as Phase I between East Island and Tern Island. The existing gear (Phase I) at FFS was installed in collaboration with FWS during May of 2003. It consists of two small custom cameras mounted on the pole at East Island, a small microwave dish on the pole, and a small control box at the base of the pole. The computer and monitor control for the system have been securely located in the FWS Dry Room at Tern for several months now. There is a small receiver dish and box on the roof at Tern Island. Phase II installation- an effort to experimentally bring images to Honolulu via satellite for viewing by my program and FWS- will consist solely of the following.

- one 2.4 meter satellite dish
- one four-point surface mount
- two coaxial cables from the dish to the camera computer currently at Tern
- one computer modem

The dish mount can be set on any hard surface and can be ballasted by sandbags or any heavy objects. The coaxial cables are all-weather and will require no maintenance. We propose that the 2.4 meter dish be located on the concrete immediately to the east of the main building on Tern. The satellite modem is fairly small, about 1/2 the size of a laptop computer, and would be located in the Dry Room.

Once installed, we do not foresee any of these items needing

maintenance. Additionally, when not in use for the experimental research monitoring work, the satellite modem will provide internet access for any and all personnel at Tern Island that are so authorized by FWS. This is a 24-hour system with approximately 100 kps upload speed and approximately 500 kps download. The power requirement is equal to about a 60 watt bulb. There will be no direct cost to the FWS. If the experiment- perhaps better called a Digital Imaging Remote Monitoring Demonstration Project- is not successful, or when it runs its course in usefulness, the satellite dish can and will be removed from Tern Island by vessel transport in the same manner it was delivered there. I would think it reasonable to have this project be approved (and re-approved) on a yearly basis. All technical work will be conducted by Daniel Zatz and Kondrad Schaad of SeeMore Wildlife Systems under contract to my program. Daniel and Kondrad are the same persons that installed Phase I in May 2003 and are sensitive and appreciative of the unique wildlife and habitat setting at FFS. Marc Rice a colleague of mine for 15 years involved in an array of sea turtle projects will also participate. Marc participated in the Phase I installation.

With regard to issues of privacy, only those persons approved by my program, in close consultation with the FWS, will be allowed access to the camera controls and images here in Hawaii. Should the experiment be successful there are many avenues for educational outreach. However, this aspect must be examined separately, if and when the experiment succeeds. With regard to privacy issues of personnel when on East Island, it should be noted that it is impossible for the cameras to view the area immediately to the northwest of the pile of concrete (sometimes referred to by others as "Mt. Balazs"). With regard to the summer season Turtle Technicians working on the island, the policy has already been put in place (agreement between Horvath and Balazs) that the use of small portable shower and portable toilet *enclosures* that are already at FFS (purchased by my program) will be mandatory during the annual field season (30-40 days during May-June-July).

And last, one of the two cameras on the pole at East Island needs to be replaced and the system checked, cleaned and renewed as may be needed. This will require one, possibly two, trips to East Island weather permitting. I am authorized to drive the NOAA small boat and foresee no assistance of any magnitude being needed by FWS personnel.

Thank you for your consideration. If there are any remaining unanswered questions or issues please do not hesitate to contact me by email or cell phone 286-2899. Aloha, George Balazs

SEPTEMBER 28 2007

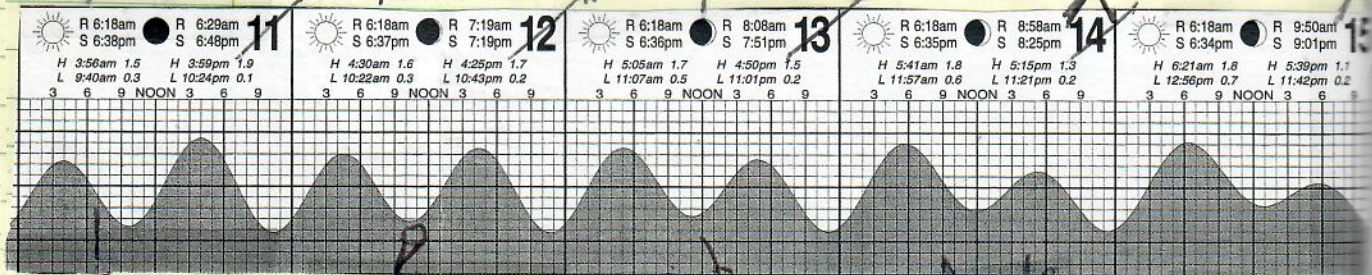
KAHANA TUESDAY

KAHANA Wednesday NIHOA

Thursday ARRIVE TERN

FRIDAY EAST

SATURDAY EAST



DEPART HAWAII
KAHANA
"Seabulk Offshore Ltd" 102 feet

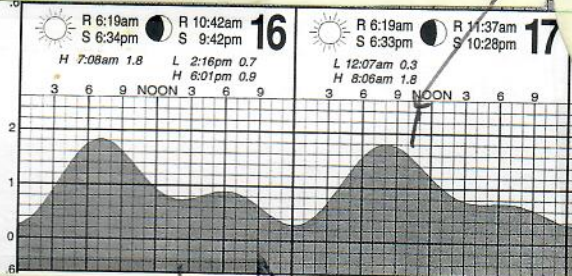
NIHOA OFFSHORE MOTOR AROUND ISLAND

SIGHT Laparouse from the South ON TERN

WORKED ON EAST ISLAND N.I.
133 off shore
*39
*32
WORKED ON EAST ALL DAY

Sunday TERN

Monday DEPART TERN PACIFIC AIR SERVICE



Nearby Dead TURTLE SHELL BEACH

WORKED ON TERN ALL DAY
More Concrete blocks on Antenna. N=38
EXCAVATED SHELL BEACH

KONRAD FIXED FWS VHF Antenna TO TALK TO PLANE

2 WALKS TO EAST SAND BEACH NESTER OF TERN - 1 BELIEVED (PIT TAGGED HER)
1 - SOUTH BEACH NESTER (NO PITS) NO MOTOR TOOL

"Well Be watching" AS FOR DANIEL MAN STAR TREK - NEXT Generation

Jean-Louis PIERARD

Sea Turtle Cam phase III 11-17 Sept. 2007

9/7 Friday 4pm CULTURAL BRIEFING William AILA

9/11/07 TUESDAY 7AM DEPART M/V KAHANA Keolu BASIN
SKIM, DANIEL ZATZ, KONRAD SCHAAD,
CINDY, REBEY KUPE, LEE ANN WOODWARD. Calm seas.
Light trades - ~ 530-630pm off South KAUAI

9/12/07 WEDNESDAY NittoA in sight 630am - off island about 9AM
2 people on island for past 2 months studying
MILLER BIRD - for possible transfer to other

Video and Stills NWHI islands. Many people went ashore for 2 hours.
Depart for FFS ~ 12 noon - Smooth seas.
Video of Pacific bottle nose at bow, paper mowers +
to the sea. [Sight La Perouse] rd: 330-4154

9/13 THURSDAY 07 ← from the South ~ 930am. Very calm seas
still. Mario (Captain) says Skip Naffel
"Basitta" had recent heart attack - in Queens Hospital.

ARRIVE FFS ~ noon - Kahana ~ 1.5 miles direct south
& Tern anchor. "LANDING CRAFT" to shore, unloaded all
gear to rooms. Assembled camera gear in old
fws ~~room~~ NWHI room. Walked to end of runway
saw dead rotting large turtle shell beach.
Lots of egyptian pills - Volunteers Marie,
Ed and Matt. David ~~is~~ assistant
refuge manager - Angela left ~ 1.5 months ago.

look room 5th STAIR
9/13/07 organized boat - Daniel & Konrad worked
on roof - Tern receiver station.
Assembled gear for east.
Night - walked runway again. 10pm - walked
out hard project of item - many crabs.

at
& Hennes
years
piled
off
and sunk
200-300'
runway
Need
computer
cable
rain
of power

Friday EAST ISLAND Adult ♀ ON excavation BUT motionless

9-14-07 / 10:28a

LHF

470A463153

East

RHF

467B5B0943

CCU = 93.5cm

Area 4-5

9/14/07
Friday

Left Auxiliary MISSING
2nd healed

Right Marginal 8-11th MISSING
2nd healed. Smooth

Turtle returned to water after 2nd PIT tog.
likely NESTED 9/14-9/15 PM-AM EXCAVATION SEE THE NEXT MORNING

"NATURAL"
Subsidence

COOK ON KAHANA

DANCE HALLS
VOLUMES
5-6-7
"Next Generation"
STAR-TREK



ED GORDON
Sauce Master

GOURMET PRODUCTS

- Smoked Fish
- Paradise Pepper Sauces
- Various Smoked Products

45-491 Lehua St.
P.O. Box 1950
Honokaa, Hawaii 96727
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Fax • 808.775.1700

e-mail • ed@realfreshcookin.com • www.realfreshcookin.com

cell STAG 31
Friday 774-521-9652 ← personal
Mike Siki
00 1-808 983-
5393

EAST ISLAND

EXCAVATIONS 9/14/07 Friday
Rescued hatchlings:
4 + 14 + 6 + 11 + 14 + 2 + 3 =
~ 54 TOTAL

Ride

9/13/07 Landed off Tem Sand projection East end
Night ~ 200 meters long
CONTINUED width =

EAST ISLAND

9/14/07 up ~ 6:30 AM DART
Friday Loaded boat departed for East ~ 9:30 AM
mild south swell - no to light wind.
TO Round Reef ^{150m} Round Island
present - seems same size. Mullet
gone. Motor to rock where Near(?)
island used to be. Is
Disappearing still there.

On East ~ 10:15 AM. Lots of swoothed
out pits all over island. Most to the
East of Pole.

Collected ^{DATA} Data logged from nests
buried by Irene and Tammy June-July 2002

FRIDAY 9/14/07 SATURDAY 9/15/07

9/15/07
133

EAST DAY 1 of 2. "CRATERS"
9/14/07 Excavated "sink holes" of recent hatching
Friday emergence - many turtles alive in each nest.

Knived up pole for hours installing ^{thermal} T.I. MAPPING camera at same level as "Visible Light" lower camera - This camera left in place new upper blade - filled water reservoirs.

"Walked" around East taking video and stills. Chain-sawed log is now lodged by engine head in hard of bull dozer.

Distance from existing pole to water's edge seems the same. but nested 55 gsd now exposed nearby to the east.

Sawed stump of smaller diameter pole now exposed to the east.
2 yellow cylinder batteries put in (Costco) yellow out + Joe?

Departed East ~ 4:30 pm back through Round Reef - Arrive about 5:15 pm.
Dinner - Spaghetti

Checked and used T.I. camera & 2 visible Auto Loop set (that should have recorded ^{the} nests that came up - likely same turtle pit tagged 10:15 am. DIDN'T function well)

DIDN'T walk runway - to bed ~ 9:30 pm



[Faint, illegible handwritten notes on the left side of the page, including the word 'this' and 'beach']

[Faint, illegible handwritten notes at the top of the page, including the word 'beach']

9/15/07 SATURDAY

DAY 2 of 2 East Island

9/15/07 SATURDAY

Depart about 1045 A.M. TO East
TO finish upgrade/repair "Cistine Chapel" Remnant
- mainly to put in Solar Panel array - existing
+ 2 half-pieces.

Shawn and I recovered more data loggers
+ placed black plastic floats at
8 locations - removed cleared up
others. Locations as follows:

1.) "Rigot" concrete Banel - Large Black float + UPRIGHT
BLACK TUBE

2.) Sawn stump to north of concrete - 3 Black Floats
(LIKELY can't be seen with T.I.)

David took HD #90k with him today
to East to film.

3.) Corner of concrete pod ("Tomb") ~~eastern~~ western most
Right ↑ west □ □ ←
□ □

1st found East of pole - more central

4.) Sawn stump - 3 black floats - copper wire

5.) Sawn stump 3 Black floats copper wire
2nd found to east of pole.

6.) Stump shoreline northern - never seen before
pounded black float into rotting center of pole.

7.) Black tube on Pipe with Black float
into each end.

8.) Bronze water distiller - Black float pounded in.

TREN
10 PM
BISHOP

WHEN SUBJECTED
TO GAS
STERILIZATION

CO1538
10 PM

470B20065A



470B20065A

Forwarded
8/10
OTD/15

Lot 9/16/07 am



needs Radio Shack 12V power supply

Re New Caledonia

- Call Richard Farman ✓ go late February
- Marc Rice ✓
- Polovina ✓

- Small hatchling trays
- Pit Record
- Name addresses of volunteers ✓



9/15/07 Departed East ~ 5:30pm everything taken
 Skrudoff. 133 rescued hatchlings
 let go 2-4 at a time, in open water between EAST & RAVEN Reef.
 Temp at ~6:30pm. Washed boat, stowed gear.
 ATE ^{COST} MEALS p38.

9/16/07 UP ~ 8AM - dead ~~SEA~~ Beach
 SUNDAY Necropsied turtle in Tue pm ~ 3:30pm.
 Excavated emerged nests Shell Beach - saved
 2 hatchlings from one nest, one from another - for DNA.

Richard - in France

LATE Feb
1/5 - 2/15/08

77 91 811

Richard Farmer = 011 68 77 91 811
Richard = 808 - 261 - 1895



DINNER
9/15/07
SATURDAY
NIGHT

EMERGENCY MEAL KIT

HAM AND SHRIMP JAMBALAYA WITH NATURAL JUICES, SMOKE FLAVORING ADDED - INGREDIENTS: COOKED HAM WITH NATURAL JUICE [HAM CURED WITH WATER, SALT, SUGAR, SODIUM PHOSPHATE, SODIUM ERYTHORBATE AND SODIUM NITRITE], COOKED SHRIMP [SHRIMP, SODIUM TRIPOLYPHOSPHATE, SODIUM BISULFITE ADDED AS A PRESERVATIVE], COOKED LONG GRAIN PARBOILED RICE (ENRICHED WITH IRON [FERRIC ORTHOPHOSPHATE] AND THIAMINE [THIAMINE MONONITRATE]), TOMATOES [TOMATOES, TOMATO JUICE, SALT, CALCIUM CHLORIDE, CITRIC ACID], WATER, CHICKEN BROTH, DEHYDRATED ONION, CONTAINS 2% OR LESS OF THE FOLLOWING: CORN OIL, CONCENTRATED CRUSHED TOMATOES, MODIFIED FOOD STARCH, DEHYDRATED CELERY WITH ADDED SODIUM BISULFITE, GARLIC POWDER, SMOKE FLAVORING, SPICE, SALT. **CHOCOLATE CHIP COOKIES** - INGREDIENTS: ENRICHED FLOUR (WHEAT FLOUR, NIACIN, REDUCED IRON, THIAMINE, MONONITRATE, RIBOFLAVIN, FOLIC ACID), SUGAR, PARTIALLY HYDROGENATED SOYBEAN AND/OR HYDROGENATED COTTONSEED OIL, SHORTENING, CHOCOLATE CHIPS (SUGAR, CHOCOLATE LIQUOR, COCOA BUTTER, DEXTROSE, LECITHIN (AN EMULSIFIER), VANILLA), AMMONIUM BICARBONATE, HIGH FRUCTOSE CORN SYRUP, EGGS, SODIUM BICARBONATE, SALT, NATURAL AND ARTIFICIAL FLAVORS, CARAMEL COLOR, CONTAINS WHEAT, SOY AND EGGS. **PEANUT BUTTER** - INGREDIENTS: ROASTED PEANUTS, SUGAR, HYDROGENATED VEGETABLE OIL (RAPESEED, COTTONSEED AND/OR SOYBEAN OILS), SALT, VITAMIN C, VITAMIN A, VITAMIN B6, VITAMIN B1. **CRACKERS** - INGREDIENTS: ENRICHED FLOUR (WHEAT FLOUR, NIACIN, REDUCED IRON, THIAMINE MONONITRATE, RIBOFLAVIN), VEGETABLE SHORTENING WITH TBHQ ADDED AS AN ANTIOXIDANT (CONTAINS ONE OR MORE OF THE FOLLOWING PARTIALLY HYDROGENATED OILS: COTTONSEED, SOYBEAN, PEANUT), YEAST, CALCIUM CARBONATE, SALT, SODIUM BICARBONATE, EXTRACT OF MALTED BARLEY AND CORN. CONTAINS WHEAT AND PEANUTS. **PRETZELS** - INGREDIENTS: ENRICHED WHEAT FLOUR (CONTAINS: NIACIN, REDUCED IRON, THIAMINE MONONITRATE, RIBOFLAVIN, AND FOLIC ACID), SALT, CORN SYRUP, PARTIALLY HYDROGENATED SOYBEAN AND/OR COTTONSEED OIL, YEAST, BICARBONATE AND CARBONATE OF SODIUM, CONTAINS WHEAT.

Nutrition Facts		Amount / Serving	% Daily Value*	Amount / Serving	% Daily Value*	*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs. Calories 2,000 2,500
Serving Size 1 unit (401g) Servings Per Container 1 Calories 1090 Calories from Fat 410		Total Fat 46g	71%	Total Carbohydrate 123g	41%	
		Saturated Fat 9g	45%	Dietary Fiber 5g	20%	Total Fat Less Than 65g 65g
		Trans Fat 2g		Sugars 28g		Saturated Fat Less Than 20g 25g
		Cholesterol 80mg	27%	Protein 42g		Cholesterol Less Than 300mg 300 mg
		Sodium 2020mg	84%			Sodium Less Than 2,400mg 2,400mg
		Vitamin A 10%				Total Carbohydrate 300g 375g
		Vitamin C 60%				Dietary Fiber 25g 30g
		Calcium 35%				Calories per gram:
		Iron 35%				Fat 9 • Carbohydrate 4 • Protein 4

The Wornick Company, Cincinnati OH 45242

VOLUNTEERS - TERN

Matthew York
9910 Ramblewood Dr.
Waco, TX 76712

Forest.Falcon77@gmail.com

Marie Medina
8512 Traciney Blvd
San Antonio, TX 78255

marietmedina@gmail.com

Ed Conrad
5871 Holstein Way
Murray, UT 84107

Zugunruhe08@gmail.com

Revised 8/10 09:20 PM

~ 9:30 PM East Sand BAR of TERN Island

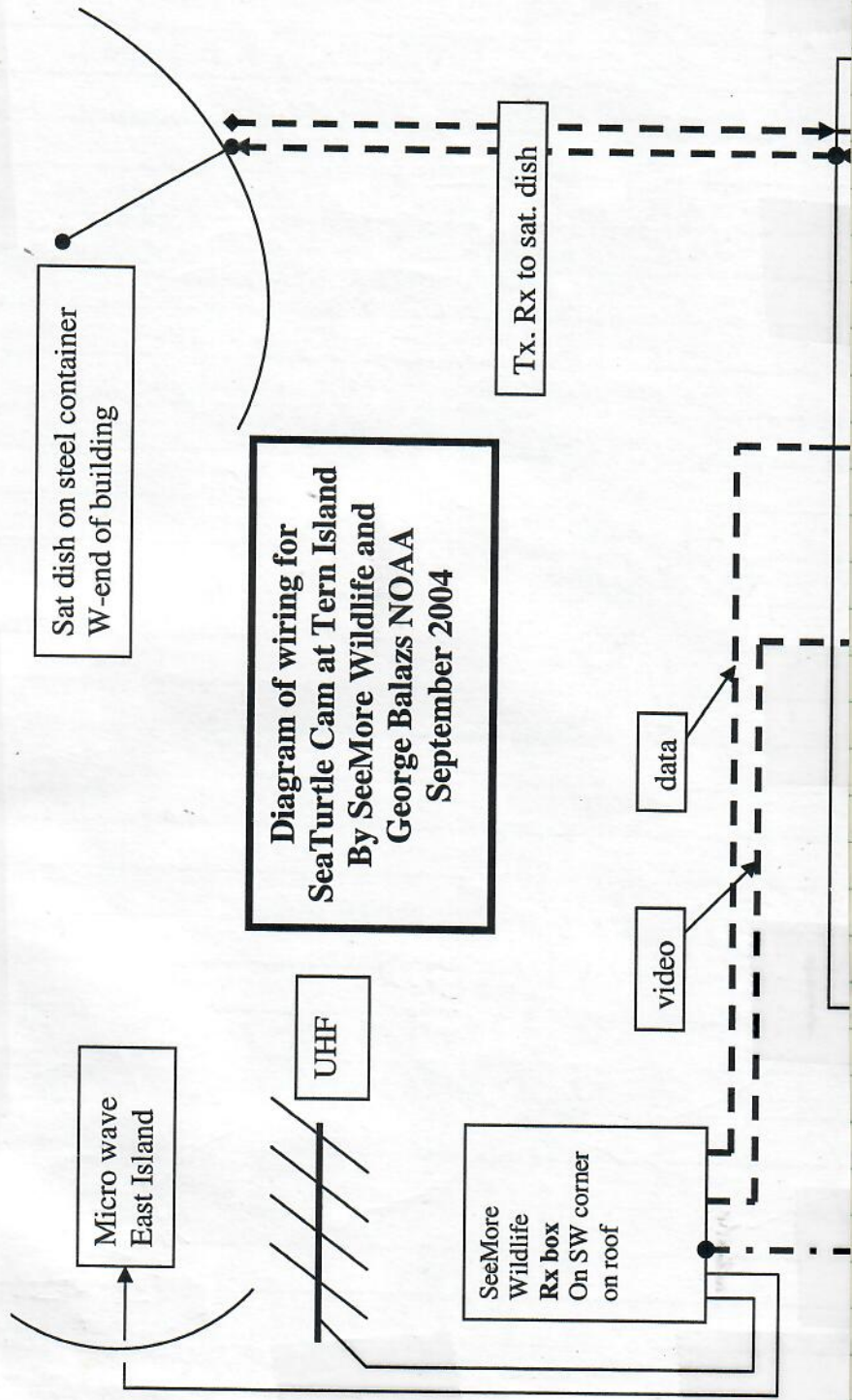
Adult female returning to the WATER - didn't nest

new LH

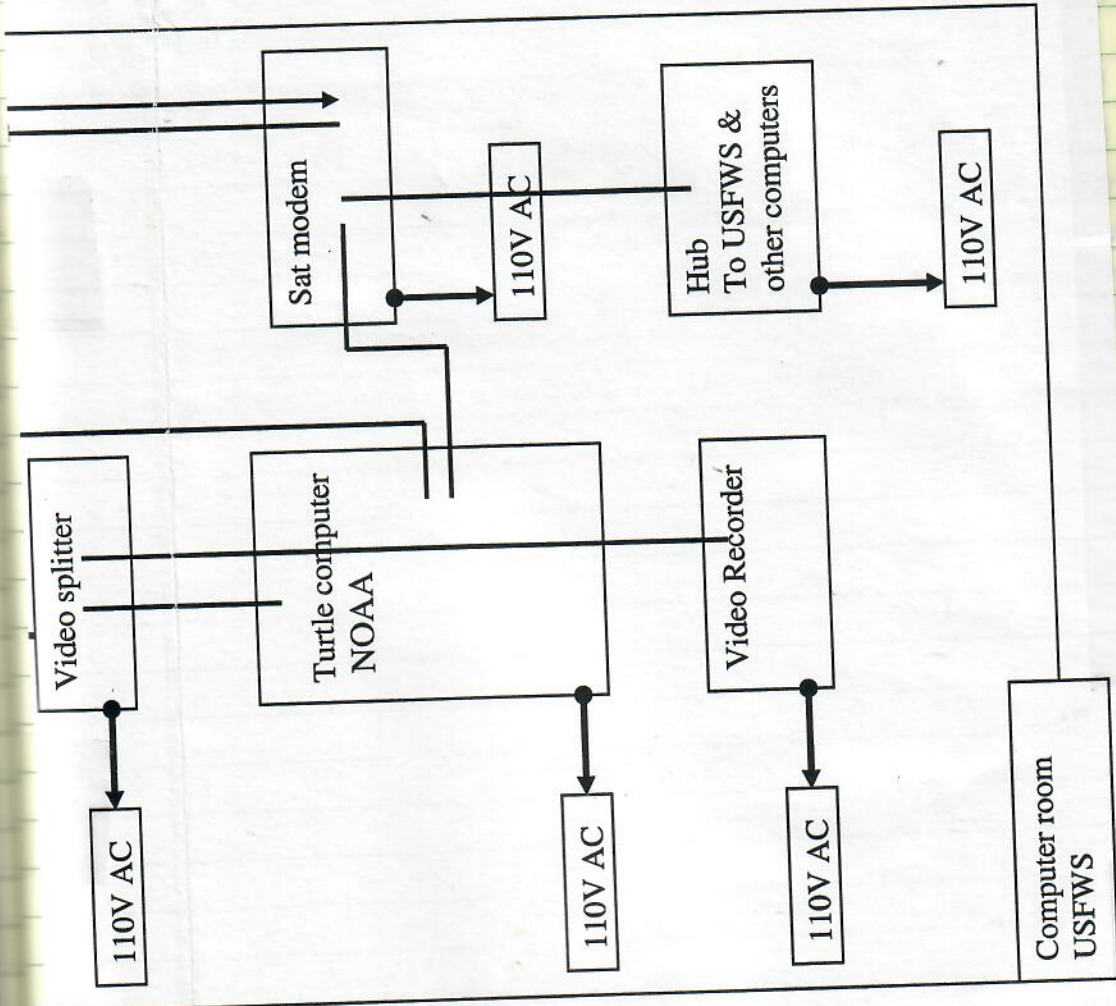


KONRAD, GB & STAN

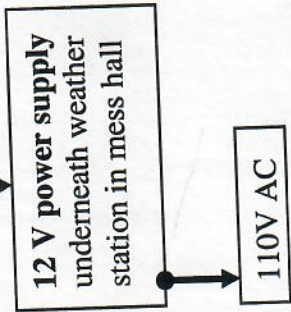
- see later -
However - PIT reader had "423F532F67" ??
showing for LH = " "



**Diagram of wiring for
Sea Turtle Cam at Tern Island
By SeeMore Wildlife and
George Balazs NOAA
September 2004**



9/2004



9/16 (07) Sunday SHELL Beach
TERN ISLAND

09-06-07

David Zabriskie (Ref. Mgr)

Crab Beach, Tern Island

CCL = 85.5 cm

Necropsied on 09-10-07 by GIBB. Assisted by SKM + Marie Medina
Found dead washed ashore in bloated condition. Shark teeth
scratches on right rear carapace.

Very dry & leathery. All scutes missing due to decomposition.

Codium + Turbinaria in GIT.

Samples: right humerus, forestomach + GIT contents, skin samples -
(2) saline solution + (1) salt packet, digital photos



125	lbs	SHAWN
140		KONRAD
160		DANIEL

$$\begin{array}{r} 1425 \\ 190 - \text{GB} \\ \hline 615 \end{array} + 105 \text{ lbs} = 720$$

$$\frac{300 \text{ Actual Year}}{915 \text{ lbs}} \quad 9/17/07 \text{ Term} \rightarrow \text{Hawaii}$$

9/16/07 9PM - Bot Read

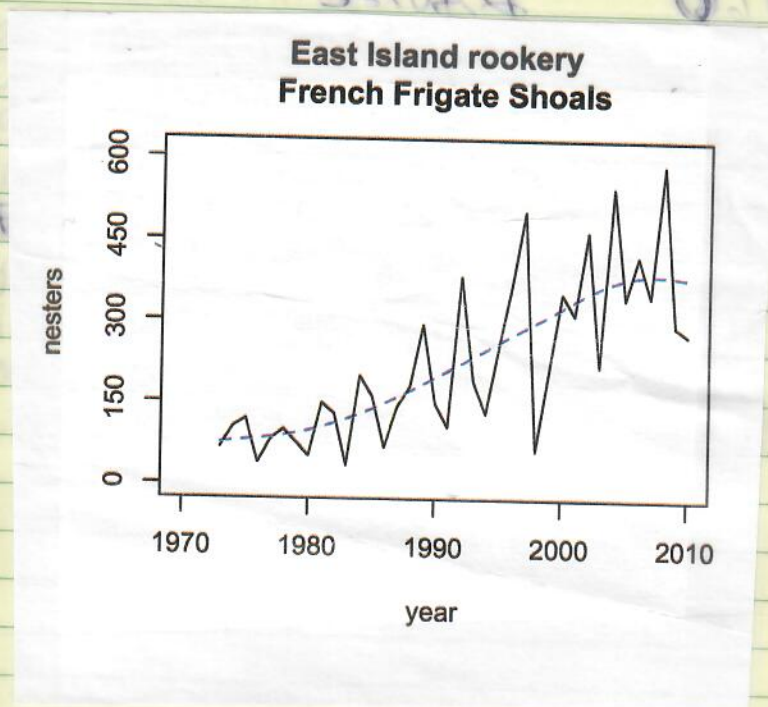
T.I. camera	Brightness	248
	CONTRAST	142
	HUE	236
	SATURATION	44

"AXIS SERVER"

Replaces P.C.

- 1) Compresses signal to send on internet
- 2) Sends/Receives camera commands.

Through 2010 38th Nesting Season



POTENTIAL LOSS ESTIMATE

for 2009 Season

10-21-09

Total turtles nesting during monitoring season		295	
Turtles presumed nesting during entire season		295x2=	590
Number of clutches per turtle	3	590x3=	1770
Number of eggs per clutch	104	104x1770=	184080
Emerged hatchlings	75%	184080x0.75=	138060
Percent activity June-July	60%	138060x0.6=	82836
Percent activity May	15%	138060x0.15=	20709
Percent activity August	15%	138060x0.15=	20709
Percent activity September	10%	138060x0.10=	13806
		tot	138060

hatchlings

Assume nests laid after mid august are affected by Hurricane.

Percent activity August	7.5%	138060x0.075=	10355
Percent activity September	10%	138060x0.10=	13806
Worst case: Rounding off to	20%	138060x0.2=	27612 hatchlings
	20%	EGGS	36816 eggs

wednesday 10/21/09 130 pm USCG C130 Life off EVALUATION
Night ONE "IN PEACE"

Thursday 10/22/2009 Night Two "in Peace"

Friday 10/23/2009 Night Three "in Peace"

SATURDAY 10-24-09 USCG C130 TO Midway VIA NECKER FFS (TERN/TRIG)
ARRIVE 230 pm (380 pm Midway Time) LAYSON, & PAH.

10/28/09 Thursday Settle teams on Tern for ~ 3 hours AM

11/9/09 Monday Late a.m. by Benally + 1 Pacific Air charter to Tern

Date: Mon, 2 Feb 2009 08:21:17 -0800

From: "sunbro@mindspring.com" <sunbro@mindspring.com>

To: George H. Balazs <gbalazs@honlab.nmfs.hawaii.edu>

Subject: GREAT TO HEAR FROM YOU GEORGE

And I Do appreciate your remembering me at the Ceremony in Kauai on Tuesday, perhaps it will send energy my way -- I need it, since I got some supplement poisoning last September -- and have lost a lot of pounds and it affected my heart rhythm.. I look forward to recovering -- but it's been a slow process..

Enclosed is a special Poem, made for your Ceremony Event on Tues.. It is not long, but to the point, if you care to read it, with the impact and rythm you can give it.. It is my humble donation to those who Love & respect The Islands and what they stand for.. My love goes with it..

- And yes, I think of the Shoals often.. We need to escape to the primitive beauty of Nature and what God provides -- not what man and his concepts result in.. The world is changing, George -- and there are big changes to Mother Earth coming.. with the Gift The Lord gave me I still receive Prophecy as before -- The Master File has in 1985.. And files with thousands of Poems.. The Master File has close to 6000 poems of all types, which are in categories for selection..

- Anyway, my friend -- I will think of you at Kauai -- and my Spirit will be there to share in the beauty and joy of the Islands I love.. I have been there many times in past lives -- and the Pacific has always been within my heart & Soul..

- Blessings to you, and your family -- lets keep in touch for future sharing of events and happenings to come, to our lovely Planet.. Mankind has much cleansing and Karma to balance before the New Time arrives, which the Bible speaks of..

from Emmett

Until Later -- Aloha to You and all,

19 NIGHTS IN PEACE



10-24
-09

USCGC

<?xml:namespace prefix = o ns =
"urn:schemas-microsoft-com:office:office" /> -
THROUGH THE EONS

-
From the beginning of Creation,
Through the Eons that have passed ~~the~~

Stand these precious lovely ~~<?xml:namespace prefix = sti ns =
"urn:schemas-microsoft-com:office:smarts" />~~ Islands,
Of Eternity to last

-
They we~Rre seen by Ancient Races,
Revered for what they are ~~the~~
Manifestations of Nature~Rs force,

Made of dust from distant Stars.

-
 For it is Nature in her glory,
 That reveals the living truth ^W
 That all upon this Planet,
 Is part of Higher Truth.

-
 Let us joy in this great vision,
 Of all that we can see ^W
 And treasure what is before us,
 As it all was meant to be.

-
 Emmett,
 The Malibu Poet

Date: Mon, 2 Feb 2009 08:30:59 -0800
 From: "sunbro@mindspring.com" <sunbro@mindspring.com>
 To: George H. Balazs <gbalazs@honlab.nmfs.hawaii.edu>
 Subject: I FORGOT TO MENTION ONE THING

66 isn't old, George -- it is all how we see it.. The mind and enthusiasm can continue on into Eternity.. We came from there -- so we have the unlimited ability to continue on -- regardless of age.. My mind and receptivity is sharper than ever -- and I will be 88 in May.. It all depends upon a person's focus and interest in Higher things.. The Lord is always with us, whenever & wherever -- and this intunement connects us to the Eternal power which is forever young.. Mind and spirit also..

I forgot to put my tel. # below my name on the Poem..

Take a good feel of the Trade Winds for me, tomorrow.. I miss them..

Blessing, from Emmett

Date: Fri, 23 Oct 2009 06:44:50 -0700
From: Harry E Finch <sunbro@mindspring.com>
To: GEORGE BALAZ <gbalazs@honlab.nmfs.hawaii.edu>
Subject: SOOOOO GLAD TO HEAR FROM YOU, GEORGE

And thank you muchly for the info on the Shoals and the Islands..
It's great to think of them, as I often do -- and to get your
Update.... I have a fair amount going on here, for now -- and would
like to make a longer e-mail with Poetry also --- but

I'm getting ready to go into a Hospital for a Heart Ablation -- a
needed Procedure to keep me up to speed and going.. So, I didn't have
much sleep last night, and not to strong to do much for the next few
days, probably..

There is much to talk about, and I will have to call you when I am
more up-to-speed.. If you don't hear from me for three weeks or so,
you can call a close friend -- a Chiropractor DR., Named Tony Hall --
Tel. # 310-589-1005 -- he handles my affairs and the property when I'm
away.. A good Christian..

Take care out there, and be happy to live where you do and work with
what you are the expert in and for..

A part of me, is always out there, old friend, Remembering ---
Blessings from Emmett

Harry Emmett Finch
The Malibu Poet
sunbro@mindspring.com

GB

LAST AT Midway 9/11 - 2001

October 24, 2009 Barbours Point USCG Station
Saturday, leave - 8:00 AM, via MAKAKILO Drive
EXIT 2 off HI TO Barrett Road, TO
FD Kosselet, right on Coral Sea to Ocean
USCG, All pretty much the same as years
ago - but now has heavy security fencing.
CIBO TAIL NO. 1707

www.FlightAware.com tracks
all aircraft - told to me by Beth Flint,
on board - Susan White, Beth Flint, DAN
Polhemus, Ty Berrally, Chie Yoshinaga,
MARGARET AKAMINE

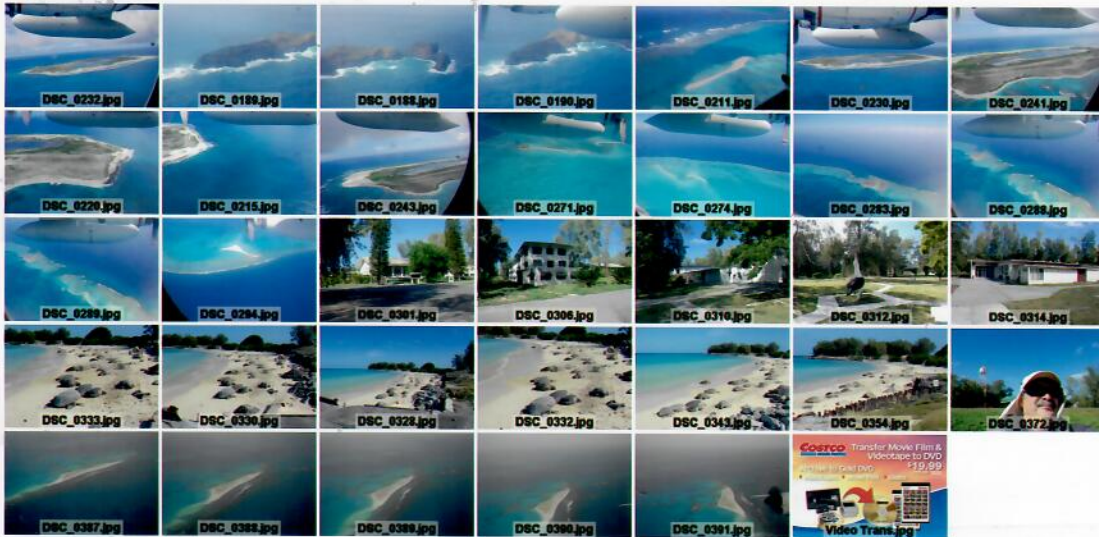
Take off 10 AM. Fly by south side
Neskes (1:35 AM - photos). Fly by
FFS Tern (I saw) and Tern (didn't see)
11:57 AM. Reported no damage to Tern,
Fly by south shore Laysan 1:13 PM
(photos), Fly by P&H 1413 hours
photos (includes SE Island)?

land Midway 2:30 PM - Met John K.
& LEONA
LEONA? Walked to Midway Mall/Ganey
Bowling Alley and to warehouse (where
chairs were kept) - Inner Harbor
walked across to old Koral KNBS site -

Notes:

002382

10/25/2009

Hi ~~Dr.~~ Balazs,

My address is:
 P.O. Box 1337
 Keaau, HI 96749

It is a nice hat.
 Thank you,

Malie MANOAL

Have ~1 hour on the ground

Oct 24, 2009
Saturday

Concrete slab seems to be gone - Boat ramp broken/collapsed -
33 baskets present along distance of maybe 50 yards to the right. Some clustered, some scattered.
Many photos. Juvenile work seal average length: turtles ~ 50 cm to 90 cm

Backnote - "Predator" type camera taken on C130 - large cockpit 5 screens -
Dome mounted on ventral nose of plane

No Molting seen on shells.
Walked back to harbor - took pictures of junk cars, boats, washers etc.
Trees chopped-up piled there too

Departed Midway ~ 4:15 pm direct to FFS high altitude. TO Laferosse.
In up on flight deck with Chad & Susan White.
6:40 pm nearly dark overflight of coast ~ 1000 ft. photos.
Then high altitude to Barbours Point.
Land ~ 8:30 pm.

went to Barbours Point
Drove Maria Manoa - (James Braun student) to Kafahula - she had been volunteer on Waiyasan.

HURRICANE
54
NEKI

Have I heard on the ground
Pool 4/20
Sept 2009

6 / LOCAL

00T 25,

2009

HSB

[NEWSWATCH]

Tropical storm Neki lingering

Tropical storm Neki, moving to the northwest of the main Hawaiian islands is responsible for the muggy conditions over Oahu yesterday and today, the National Weather Service said.

The storm has cut off the normal trade wind flow from the northeast and the resulting southeasterly winds mean muggy weather, scattered showers and possible vog.

The weather service canceled a tropical storm warning yesterday afternoon for the Northwest Hawaiian Islands as Neki continued to drift to the north.

The storm was about 360 miles northwest of Lihue, Kauai, at 5 p.m. yesterday and moving north at about 7 miles per hour.

The storm was expected to dissipate by Tuesday. But weather forecasters said another weather system moving towards Hawaii will block the cooling tradewinds for most of next week. Relief may come Thursday or Friday, the weather service said.



60-42-01

5/15/09



TOLEBE BEACH MIDWAY 10/24/09



TOLEBE BEACH MIDWAY 10/24/09

58



10/24/09, C-130



Subject: Post-Neki update

From: Chad Yoshinaga <Chad.Yoshinaga@noaa.gov>

Date: Mon, 26 Oct 2009 15:54:56 -1900

To: Yoshinaga Chad <Chad.Yoshinaga@noaa.gov>

CC: _NMFS PIC PSD <nmmfs.pic.psd@noaa.gov>, Braun Robert <rbraun@lava.net>, Albert Harting <harting@mcn.net>, Kenneth Longenecker <klongenecker@bishopmuseum.org>, Frank Parrish <Frank.Parrish@noaa.gov>, Barlow Jamie <James.Barlow@noaa.gov>

All,

On Saturday, I did a fly-over on a USCG C-130 to assess any damage from Neki on both Laysan and Tern. We saw minimal, if any, damage at Tern. Trig was still there and the antenna at East was still standing. There may have been some wave wash, but nothing seemed out of place. We even counted 15 seals on the beach.

At Laysan, all the FWS tents were still up and our gear seemed to be in place (where they left it). There may have been some larger than normal wave wash at both sites.

The Sette arrived at Laysan this morning. They put our field teams ashore and began setting up the camp. Everything looked ok and they were able to get all systems up and running. It was determined that it would be safe to leave our field teams, and the Sette departed at 1430 en route to FFS.

They will stop at FFS to do an on-the-ground assessment of Tern. Ty Benaly and a FWS tech are on board to do the assessment, and some of our ship's personnel will also go ashore to assist. They should arrive FFS on Wednesday.

Attached are a few pictures I took during the flight. We also flew over Necker, Maro, and PHR.

Chad

Chad Yoshinaga wrote:

All,

I don't remember where my last update left off.

The Sette is currently at PHR. They will depart there and head to Midway this evening. They will then drop off part of their scientific staff to make room for our Laysan team on the ship. The Sette will head back to Laysan and see if the island is habitable and safe to re-establish our camp. They will also stop at FFS to do a preliminary assessment of Tern.

Tomorrow morning, a group of us will be doing an over-flight of FFS and Laysan to assess the condition of the islands. We will also be going to Midway to bring back some of the CRED marine debris team, which will open up berthing space for our Laysan personnel.

I've spoken a number of times to our Laysan team. They're all good and looking forward to getting back to Laysan.

Chad

Chad Yoshinaga wrote:

All,

Just talked to the CO. All Laysan personnel are safely on board the Sette. They are departing Laysan and heading northwest towards Midway. It's pretty tight on board, people are sleeping on floors, but all are safe.

Chad

Chad Yoshinaga wrote:

All,

We are evacuating Laysan today. The ship will arrive at 1500 and they will have two hours to get whatever they can off the island before the ship has to depart. They will most likely head west now that the storm is tracking to the northeast. There is a good possibility that they can make Midway, and will off-load the Laysan crew there.

We've been in constant contact with the NWS and USCG. The last update I received from the NWS is that Neki will pass 75nm west of FFS as a Cat 3 hurricane; sustained winds at 115k with gust to 140k. They are predicting a 20'+ south swell with seas between 15-20' and a 4' storm surge.

We are currently trying to evacuate Tern. There are 10 people on island. The island will start feeling the hurricane tomorrow (gale force winds, rain) and the charter plane is unable to fly today. They will be attempting to land a USCG C-130 to evacuate the personnel. The plane is in the air and should be arriving at Tern around 1300.

I'll be talking to Gretchen at 1300 for a final update/briefing. Then we'll have to wait to hear from the ship once they are on board. Stay tuned...

Chad

Oct 20, 2009, at 9:01 PM, Chad Yoshinaga wrote:

All,

We've been tracking Tropical Storm Neki, currently southwest of Oahu. Neki is predicted to move north towards Laysan and strengthen into a hurricane tomorrow. Preliminary models, and info from my contact at the NWS, indicated it would turn west and move out of our area. However, the 1100 advisory showed it moved into a more northerly direction, confirmed by the NWS. Attached is the 1700 Advisory 10 which shows its predicted track to take it directly to Laysan as a Cat 1 hurricane.

The Sette was at PHR collecting marine debris. We've been in contact with them and they are currently transiting to Laysan to evacuate our personnel. They're ETA is 1600 tomorrow (21 October). We are expecting 18' seas out of the southeast, and a large northwest swell. Stability is a concern for the ship since they are carrying a lot of marine debris. Therefore, they will have to recover our personnel as quickly as possible and head east-northeast to try to get out of the area.

I'm in contact with both the Sette and our Laysan team. I'm also talking with the USFWS to coordinate evacuating their Laysan personnel. I'll send out updates and will let you know once they are safely on the Sette.

Chad

<Neki Advisory 10.gif>

Midway

Date: Tue, 27 Oct 2009 12:26:57 -1000
 From: Stacy Hargrove <Stacy.Hargrove@no
 To: George H. Balazs <gbalazs@honlab.nm
 Subject: Re: Midway turtle data- all ye

Here's a quick summary:

121 turtles only seen once.

33 turtles captured a total of 85 times

(1 captured 6 times, 1 captured 4 times,

13 captured 3 times, 18 captured twice)

121
 33

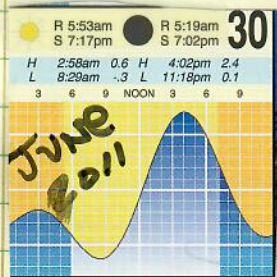
 154 Turtle

Subject: Re: Midway turtle data- all years

Note 59 records are from 1967 - 1978.

147 records are from 1991 to 2001 and one

record in 2005 (TDR removed).



intended

OVER FLIGHT OF French Frigate Shoals

JUNE 8, 2011 Wednesday

Pacific AIR CHARTER -

830am departure Airport Lagoon Drive

Krista Graham + GHB 2 pilots

Kaui Lihue land ~ 905am

VHF(?) both radios not working - cant go outside of AIRS space to west of Kaui
Returned to Honolulu with Aie defense being triggered - fighter jets

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EAST ISLAND 2010 38th Season

• 5/21 partial night; 5/22 DAY 1

5/30/2010 note up to DAY 9 -
 JAW. If 10 new per night = ~140 total before the

1999 = 200(+)
 2003 = 200(+)

1998 = ~50(+)

1983 < 50

"Modern ERA" 1998 ~50(+) TO 2009

Date: Wed, 28 Oct 2009 17:55:15 -0700
From: Harry E Finch <sunbro@mindspring.com>
To: GEORGE BALAZ <gbalazs@honlab.nmfs.hawaii.edu>
Subject: DID YOU EVER GET THIS FFS POEM??

Hello GEORGE -- I was going over some FFS Pics, and found this Poem also in the File.. Did I ever send this to you?? It was written back in 1998 -- and it touched that certain spot in me that never forgets GOD's Beauty out there -- and the good friends that helped me see it again..

Blessings to you & Your Family --- from Emmett

-- French Frigate Shoals --

There's an Atoll out there with a Holy Strand,
Encircled by a cobalt sea.

It's a special quiet, pristine place,

Where the Soul and heart is free.

As it stands in Eternal Time.

The sea and sky can make one cry,
For the beauty that touches within.

And as we rest upon the shore,
In thought, or physical form;

The solitude and changing moods,
In your memory will never go dim.

We can sense Divinity's Infinite Touch,
When the world was first fresh born.

The afternoon rains, return the same,
When the storm clouds shadow the reefs.

So walk with me, beside the sea,
On this far off coral sand;

Fresh is the air, that none could dare
To describe the sea beneath.

And enjoy the beauty ever near --
As we walk The Holy Strand.

It's not hard to believe that you can see,
That this place is frozen in time.

It has never changed since the world began,

Dedicated: To those special visitors who were Blessed
to experience the beauty of Nature~Rs untouched bounty
and ~~love~~ loveliness, at French Frigate Shoals in the far off
Pacific.

H. Emmett Finch
The Malibu Poet

May 1, 1998, ©

H. Emmett Finch, The Malibu Poet

Date: Sat, 31 Oct 2009 10:10:27 -0700
From: Harry E Finch <sunbro@mindspring.com>
To: George H. Balazs <gbalazs@honlab.nmfs.hawaii.edu>
Subject: GRET TO HEAR FROM YOU, GEORGE -- AND TO HEAR THE LATEST & TI

Tern Is. looks pretty Lonely, with so many buildings gone and no one
around..There used to be about 100+ men on Tern in 1945.. Humans come
and go, but GOD's Eternal Beauty and substance goes on.. Our time is
very short, compared to Nature and the millions of year.. At one time
FFS was a great Mountain top, high in the clouds -- and it will rise
again sometime -- with a few scraps of rusted steel left over from
the Tern Is. supports, and piles of coral sand..

And maybe Future humans will find those scraps of steel, and wonder
what it was from -- or maybe they'll know.. Earth Time is Not man's
time -- and simple man cannot understand the immensity of it
all.....I often think of FFS and remember those days with
reverence.. GOD's Nature and works is sooo different than UNhumble
man and his assumptions.... I'm somewhat sorry, that I view some of
today's scientists as self-made Gods -- who do not give GOD enough
respect, interest, and credit for His Wisdom & Eternal beauty..

Thank you for the information about Disappearing Is., I went there once in a Motor-Surf Boat we had at GBI -- and it was a spooky place down there -- and the Island was very small.. And the same with GIN Is., & Little Gin.. But they were more protected being further into the Atoll.. But very shallow around them..

For myself now -- I have been fighting low-energy & weakness for the past year.. Monday, I go for tests to see if there is some blockage around the heart which could be causing it.. And then, some procedure to correct it -- I may be 88 years old, but GOD gives me the same sharp mind and determination to be here for what is coming in the few short years ahead.. I have lost 25 # the past year -- down to 170#, but I must recover and be up to normal strength again to do GOD's work.. I hope, and plan to go to 2025 -- pray that I can with good health and a grateful mind..

Living by the Sea (I am 207' above it), as I do, and grateful to be here, helps to keep up the determination.. We must never give up our dreams or hopes - George.. With God & Christ all things are possible.. But I see some difficult times ahead for this world -- and the leadership? we have today for our poor Nation is going to set us up for some terrible difficulties & danger..

As you may know, I was given the gift of prophecy in June of 1985 -- after 21 years of Spiritual teachings -- from a Swiss Lady who spoke ten languages and was a channel for the Christ and high teachings.. '31 years I was her private student, and I learn a lot, a real lot.. And I was also given the gift of Poetry in 1965 -- and have over 5000 Poems and writings -- filed -- most copyrighted.. Perhaps a thousand+ Poems are of Prophecy -- but I seldom send them out, because of the lack of public interest, and fear.. But they are beautiful Poems and some 3 pages long..

I have been told (as far back as 1996) there is a huge Comet type "object" that will pass very Close to our Planet -- and it will raise terrible havoc with it's gravity field-wave.. Enormous tides -- Earth plate movement -- new volcanoes breaking forth, tsunamis, and weather

[Part 2, "TERN Is.1976-Clr.JPG" Image/JPEG 29KB.]
[Unable to print this part.]

changes.. Millions will die because of all of this.. And FFS will be no place to be in those times.. Be careful when it happens -- don't be caught out there.. And take what I say seriously -- many, many of my predictions have come true -- and I have friends over here that now believe me.. They learned the hard-way after big financial losses with real-estate, etc.. And I warned them, and even sent the warnings hard copy in 2002 & 2003.. I said the Stock market would go Below 9000 ten months back -- and it went lower than that, as we know.. It's heading down again..

In a few years to come, CHINA will attack us, and probably Russia along with them.. Our present socialist leaders are weak and already giving hi-tech info to China -- at the present time,, Over here on the mainland - there will be racial conflicts.. Los Angeles had 2+ million when I was in the FD.. Now it has 6+ million population -- only 23% white,, 40% of ALL Welfare in the US, is IN California.. Businesses are leaving -- unemployment is above 15%.. And -- the State is Broke -- flat broke.. Thank God, I have a FD pension and health coverage..

Over here, the only businesses doing really good (60% growth rate) are the GUN stores and ammo sales.. It's been going this way since Obama got in -- and there seems to be no stopping the sales.. People, must have ideas that something unpleasant is coming.. I told my few friends to buy ammo (if they needed it) Last Summer when it was plentiful.. No one took me seriously.. Now the shelves are mostly empty, and they come crying to me...

Living where you do, it must be a lot more peaceful than over here.. And I hope it remains that way for you and your family.. Will let you go, George -- this has been a long E-Mail -- hope you don't mind.. Attached are some photos..

Goodbye for now -- keep happy and enjoy all that the Islands provide..

Blessings, from Emmett

Date: Sun, 1 Nov 2009 13:44:29 -0800
From: Harry E Finch <sunbro@mindspring.com>
To: GEORGE BALAZS <gbalazs@honlab.nmfs.hawaii.edu>
Subject: VERY GOOD, GEORGE -- THANKS FOR MORE PHOTOS

And you look well fed and happy.. That's a great life you have, a lot of people would like to be in your place..

This Photo of East Island looks better -- not as skinny appearing. But it IS smaller in width towards the south/East end.. I can judge pretty well by the small reef (east side) where our Dock was.. And the Lobsters too..

Wow -- That's a Big looking CG Plane... Makes the old DC-3 look so out of passe'..

The young people of today are lucky, to have all the good equipment to work with... Aloha, Emmett

This shot of TERN was in the 1950's -- you sent it to me in 1975??

And a TERN IS. Takeoff --- 1945 when the Navy had it..

[Part 2, "TERN Is.- FFS 1950s.jpg" Image/JPEG 174KB.]
[Unable to print this part.]

[Part 3, "TERN IsTakeoff-JPG.jpg" Image/JPEG 47KB.]
[Unable to print this part.]

[Part 2, "Supply Ship-45JPG-off GBI.jpg" Image/JPEG 41KB.]
[Unable to print this part.]

Didn't get

[Part 3, "TERN Is from AIR 1976.jpg" Image/JPEG 41KB.]
[Unable to print this part.]

Date: Sun, 1 Nov 2009 13:31:08 -0800

From: Harry E Finch <sunbro@mindspring.com>

To: GEORGE BALAZ <gbalazs@honlab.nmfs.hawaii.edu>

Subject: THANK YOU FOR THE PHOTOS -- IT APPEARS AS IF THE OCEAN IS RISIN

Well GEORGE -- Remember I said that the Atoll was slowly sinking?? I wonder if it is that or the Ocean rising slowly?? Because East Is. has lost a lot of sand.. It's skinnier now, and yet the little reefs on the east side are still there, as before.. Perhaps a little more obvious.. It must be a lonely place now -- no sounds of laughter or the Coastie's Generator's running..

What do they have planned for Tern?? I like the small sea-loading dock they built.. And the steel sea-wall on the south side to protect it.. Doesn't look as good -- but probably safer and more lasting.. Is the new building built on concrete pilings??

They better have it a few feet above the Island -- there are going to be some big Tsunamis coming, in the few short years ahead.. The Pacific Plates are going to increase in movement.. I have had visions of 25' Tsunamis striking Malibu -- and I'm not the only one feeling this.. There are lettered Signs around Malibu directing the public where to go when the Tsunamis strike.. We didn't have that before.. But of course the people living in the beach houses don't believe it..

There are multi-million \$\$ homes right along the waters edge here, right below me.. But no one plans to move or be concerned for coming Planet changes.. People never want to believe the truth, anyway..

OK --George -- Thank You for the photos, love to think of the place whenever I can.. I am soo blessed to have lived a long life, and during the times of such action and changes.. Not many of that old bunch still alive -- and that goes for my Firemen buddies too..
Byyye for now, Aloha -- Emmett

Here's a photo of the CG Buoy Tender, bringing in our supplies.. We had an LCM (50') to carry them ashore, and use for fishing..

Date: Fri, 23 Oct 2009 11:02:30 -1000
From: Vernon_R_Born@fws.gov
To: Scott Godwin <Scott.Godwin@noaa.gov>
Cc: Chad Yoshinaga <Chad.Yoshinaga@noaa.gov>,
George Balazs <George.Balazs@noaa.gov>,
Margaret Akamine <margaret.akamine@noaa.gov>
Subject: Re: Roster for NOAA & State

[Part 1.2: "Attached Text"]

Scott,
The departure airfield is at Barber's Point USCG Air Station.
Mahalo, Ray Born

Vernon "Ray" Born, Permits Manager
Papah umoku a Marine National Monument
U.S. Fish & Wildlife Service, National Wildlife Refuge System
300 Ala Moana Blvd. Rm 5-231, Box 50167
Honolulu, HI 96850
ph: 808.792.9480 direct: 808.792.9488
cell: 808.285.4888 fax: 808.792.9585
email: vernon_born@fws.gov



February 2009

Photo of...

ns successfully completed at Tern Island, French Frigate Shoals

Subject: Operations successfully completed at Tern Island, French Frigate Shoals

From: "CO.Sette" <CO.Sette@noaa.gov>

ANITA Lopez Susan White?

Date: Wed, 28 Oct 2009 14:59:16 -1000

To: Philip M Kenul <Philip.M.Kenul@noaa.gov>, "CO.MOC.Pacific" <CO.MOC.Pacific@noaa.gov>, Samuel.Pooley@noaa.gov, Michael Seki <Michael.Seki@noaa.gov>

CC: ChiefOps MOP <ChiefOps.MOP@noaa.gov>, Kyle Koyanagi <Kyle.Koyanagi@noaa.gov>, George Balazs <George.Balazs@noaa.gov>, Noriko Shoji <Noriko.Shoji@noaa.gov>, Scott Ferguson <Scott.Ferguson@noaa.gov>, Rusty Brainard <Rusty.Brainard@noaa.gov>, Larry Loewen <Larry.Loewen@noaa.gov>

Summary of Tern Island Operations

Tern Island survived Hurricane Neki with little to no damage. The crew of the Oscar Elton Sette along with CRED scientists pre-staged teams to meet the primary and secondary objectives set forth by the two personnel from Fish and Wildlife Service (F&WS) and the Office of Homeland Security. Shipboard and CRED leadership matched capability and expertise level to the associated tasks. Careful planning and outstanding team work of twelve individuals addressed all the objectives in less than three hours. Although not all the objectives were resolved satisfactorily, a true assessment of the island was completed.

Fish and Wildlife Service primary objectives:

1. Assess island and facilities for hazards to safety to camp personnel
 - Water damage was noted inside the main building. Standing water in various locations. Windows were intact.
 - Minimal animal decay
 - Waterways free of navigational hazards

- Runway appears to have wind and water erosion near buildings, debris was removed standing water in various areas, no major divots or pot holes observed however anything noted as a potential issue was noted with photographs and GPS coordinates C-130 tire tracks still visible in several locations

2. Video/Photo document island

- Runway, seawall structure, and bird colony video taped
- Photos taken inside and outside all buildings

3. Assess operability, integrity, and sustainability of essential systems

_Power: _

Solar: fully operational, all checks sat, one panel was knocked off frame, no damage to connections, panel was resecured to frame. All buildings checked sat. with power

Generators: Fully operational.

Propane: System intact. One of two stoves in the kitchen was working.

_Communications: _

Satellite Phone and email system: packed away and stowed for the storm. Unable to locate the system. Left unchecked.

VHF: all radio systems check sat.

s successfully completed at Tern Island, French Frigate Shoals

HF: Unable to reinstall antenna. Bolts were missing to erect antenna on top of the building.

Water:

Water delivery systems to buildings functional, checked sat. Water samples taken from cistern and 5 water tanks. Samples are aboard the ship and refrigerated. Three out of five water tanks show signs of leakage (tanks 1,2,3).

Sewage:

No apparent damage. All tests, checked sat.

4. Salvage vital records

All historical bird banding records and 5 computer towers were successfully removed off the island. Controlled substances removed and locked aboard the ship.

5. Resolve potential health issues related to rotting food

All food was unsalvageable. Eight refrigerators and five freezers were emptied in garbage bags and stored outside for later disposal, all power connections unplugged, doors left opened.

6. Restore large equipment to covered buildings, (boats/tractors)

All boats were left in place due to the inoperability of the tractors, boat drain plugs removed to drain out water from the storm. One of two tractors was functional.

7. Salvage personal belongings of evacuated personnel

Removed all personnel gear as requested

8. Reestablish satellite connection to Turtle Camera for NOAA scientist George Salazs

George requested that all his equipment be returned to Honolulu. Three bags of what was understood to be all his gear was removed from the island.

Successfully transferred (5) 55 gallon drums of gasoline via ship's Safeboat and CRED Avon small boats ashore. NOAA donated 250 gallons of gasoline to F&WS courtesy of CRED Debris team.

If you have any questions or concerns please let me know.

Mr,
Anita

CDR Anita L. Lopez
Commanding Officer
NOAA Ship Oscar Elton Sette

French Frigate Shoals

From Wikipedia, the free encyclopedia

The **French Frigate Shoals** (Hawaiian: **Kānemilohaʻi**) is the largest atoll in the Northwestern Hawaiian Islands. Its name commemorates French explorer Jean-François de La Pérouse, who nearly lost two frigates when attempting to navigate the shoals. It consists of a 20-mile (32 km) long crescent-shaped reef, twelve sandbars, and the 120 feet (36 m) high La perouse pinnacle, the only remnant of its volcanic origins. The total land area of the islets is 61.508 acres (248,910 m²). Total coral reef area of the shoals is over 232,000 acres (940 km²). **Tern Island**, with an area of 26.014 acres (105,270 m²), has a landing strip and permanent habitations for a small number of people. It is maintained as a field station in the Hawaiian Islands National Wildlife Refuge by the United States Fish and Wildlife Service.

The French Frigate Shoals are about 487 nautical miles (902 km; 560 mi) northwest of Honolulu.

Contents

- 1 History
 - 1.1 World War II
- 2 Ecology
- 3 References
- 4 External links

History



NASA picture of the French Frigate Shoals.



Location of the French Frigate Shoals.



La Perouse Pinnacle



School of the squirrelfish *Sargocentron xantherythrum* at Rapture Reef.

Although there is no evidence of extensive human activity or presence in the area, the earliest human visitors to French Frigate Shoals probably came from the larger Hawaiian Islands, which were settled by Polynesians between 1100 and 1300 AD.

The Hawaiian island chain lay outside the routes followed by early European explorers, and it was not



Map of the French Frigate Shoals.

until La Pérouse's near-disastrous discovery that the shoals were known to the outside world. La Pérouse, aboard the frigate *Boussole*, was sailing westward from Monterey en route to Macau. During the night of November 6, 1786, sailors sighted breakers directly in their path, about a thousand feet ahead. Both the *Boussole* and her companion vessel, the frigate *Astrolabe*, were immediately brought about, passing within a few hundred feet of the breakers. At

daybreak, the ships returned and mapped the southeastern half of the atoll, as well as finding the rock that would later be named after La Pérouse. La Pérouse named the shoals *Basse des Frigates Françaises*, the "Shoal of the French Frigates".

During the late 1800s, American and European companies became interested in the possibility of mining guano in the Hawaiian Islands. U.S. Navy Lieutenant John M. Brooke, sailing on the naval schooner *Fenimore Cooper*, formally took possession of French Frigate Shoals for the United States on 14 January 1859, in accordance with the Guano Islands Act. In 1894, French Frigate Shoals, Kure Atoll, Midway Atoll, and Pearl and Hermes Reef were leased for 25 years by the Republic of Hawaii to the North Pacific Phosphate and Fertilizer Company; however, guano and phosphate deposits at French Frigate Shoals were found to be impractical to mine. Oddly enough, the Republic did not formally claim possession of the shoals until July 13, 1895.



A school of Pennant coralfish, Pyramid and Millet butterflyfishes, and others at Rapture Reef.

French Frigate Shoals was included among the islands acquired by the United States on July 7, 1898, when Hawaii became a United States Territory. In 1909 it was made a part of the Hawaiian Islands Bird Reservation.

World War II

During the early months of the U.S.-Japanese conflict in World War II, Japanese seaplanes occasionally used French Frigate Shoals as a rendezvous point for refuelling by submarine. By mid-1942, increasing U.S. naval activity in the area prevented further Japanese use. After the Battle of Midway, the U.S. Navy built a Naval Air Station on Tern Island, enlarging the island sufficiently to support a 3,300 feet (1,005 m) landing strip. The Station's main function was as an emergency landing site for planes flying between Hawaii and Midway Atoll. The original seawall, runway, and some of the buildings remain. Tern Island has a land area of 26.014 acres (105,270 m²).

The United States Fish and Wildlife Service continues to maintain a permanent field station there. In 2000, the atoll became part of the Northwestern Hawaiian Islands Coral Reef Ecosystem Reserve, which was incorporated into the Northwestern Hawaiian Islands National Monument in 2006.

Ecology

The reef system at French Frigate Shoals supports 41 species of stony corals, including several species that are not found in the main Hawaiian Island chain. More than 600 species of marine invertebrates, many of which are endemic, are found here as well.



The atoll is an important refuge for Hawaiian Monk Seals and Laysan Albatrosses.

More than 150 species of algae live among the reefs. Especially diverse algal communities are found immediately adjacent to La Perouse Pinnacle. This has led to speculation that an influx of additional nutrients — in the form of guano — is responsible for the diversity and productivity of algae in this environment. The reef water support large numbers of fish. The masked angelfish (*Genicanthus personatus*), endemic to the Hawaiian Islands, is relatively common here. Most of Hawaii's green sea turtles travel to the shoals to nest. The small islets of French Frigate Shoals provide refuge to the largest surviving population of Hawaiian monk seals, the second most endangered pinniped in the world.

The islands are also an important seabird colony. 18 species of seabird, the Black-footed Albatross, Laysan Albatross, Bonin Petrel, Bulwer's Petrel, Wedge-tailed Shearwater, Christmas Shearwater, Tristram's Storm-petrel, Red-tailed Tropicbird, Masked Booby, Red-footed Booby, Brown Booby, Great Frigatebird, Gray-backed Tern, Sooty Tern, Blue-gray Noddy, Brown Noddy, Black Noddy and White Tern nest on the islands, most of them (16) of them on Tern Island. Two species, the Blue-gray Noddy and the Brown Booby, nest only on La Perouse Pinnacle. The island also is the wintering ground for several species of shorebird.

A three-week research mission in October 2006 by the National Oceanic & Atmospheric Administration (NOAA) led to the discovery of 100 species never seen in the area before, including many that are totally new to science. The research findings will be used to establish what species live in the area. Further studies will also determine how well the shoals' ecosystem is being managed and the threats it faces. The French Frigate Shoals project is part of the Census of Coral Reef Ecosystems of the International Census of Marine Life.

Whale-Skate Island is a submerged island in the French Frigate Shoals. These islands suffered considerably from erosion starting in the 1960s, and by the late 1990s, Whale-Skate Island was completely washed over.

References

- French Frigate Shoals: Blocks 1002 thru 1011, Census Tract 114.98, Honolulu County, Hawaii ([http://factfinder.census.gov/servlet/DTable?_bm=y&-context=dt&-ds_name=DEC_2000_SF1_U&-CONTEXT=dt&-mt_name=DEC_2000_SF1_U_P001&-tree_id=4001&-redoLog=true&-transpose=N&-all_geo_types=N&-geo_id=100\\$10000US150030114981002&-geo_id=100\\$10000US150030114981003&-geo_id=100\\$10000US150030114981004&-geo_id=100\\$10000US150030114981005&-geo_id=100\\$10000US150030114981006&-geo_id=100\\$10000US150030114981007&-geo_id=100\\$10000US150030114981008&-geo_id=100\\$10000US150030114981009&-geo_id=100\\$10000US150030114981010&-geo_id=100\\$10000US150030114981011&-search_results=01000US&-format=&-_lang=en&-show_geoid=Y](http://factfinder.census.gov/servlet/DTable?_bm=y&-context=dt&-ds_name=DEC_2000_SF1_U&-CONTEXT=dt&-mt_name=DEC_2000_SF1_U_P001&-tree_id=4001&-redoLog=true&-transpose=N&-all_geo_types=N&-geo_id=100$10000US150030114981002&-geo_id=100$10000US150030114981003&-geo_id=100$10000US150030114981004&-geo_id=100$10000US150030114981005&-geo_id=100$10000US150030114981006&-geo_id=100$10000US150030114981007&-geo_id=100$10000US150030114981008&-geo_id=100$10000US150030114981009&-geo_id=100$10000US150030114981010&-geo_id=100$10000US150030114981011&-search_results=01000US&-format=&-_lang=en&-show_geoid=Y)), United States Census Bureau.

External links

- <http://www.midwaycommemoration.org/www.midwaycommemoration.org/2005/History.htm>

http://en.wikipedia.org/wiki/French_Frigate_Shoals

1/26/2009

- <http://www.wfu.edu/albatross/hawaii/history.htm>
- Northwestern Hawaiian Islands Coral Reef Ecosystem Reserve site (<http://www.hawaiiireef.noaa.gov/welcome.html>)
- The French Frigate Shoals Web Page (<http://www.radiojerry.com/frigate/>)
- Quick Facts on French Frigate Shoals from the PBS Ocean Adventures site (<http://www.pbs.org/kqed/oceanadventures/episodes/kure/diaries/frenchfrigate.html>)
- <http://www.ternisland.com>
- Tern Island: Noah's Ark of the Hawaiian Isles (<http://starbulletin.com/2004/06/03/news/story2.html>)
- information on little-known airfield on French Frigate Shoals, and other abandoned and little-known airfields (http://members.tripod.com/airfields_freeman/HI/Airfields_W_Pacific.htm)

Retrieved from "http://en.wikipedia.org/wiki/French_Frigate_Shoals"

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| <u>Year</u> | <u>NO. ID NESTERS</u> | <u>TAG Resighting</u> | <u>Resight</u> |
|-------------|-----------------------|-----------------------|----------------|
| 1973 | 66 | 0 | 0 |
| 1974 | 104 | 0 | 0 |
| 1975 | 111 | 1 | 0.9 |

| | | | |
|------|-------|----|-----------------|
| 1976 | 24 | 1 | 4.1 |
| 1977 | 44 | 1 | 2.3 |
| 1978 | 66 | 3 | 4.5 |
| 1979 | 55 | 11 | 20.0 |
| 1980 | 45 | 20 | 44.4 |
| 1981 | 127 | 44 | 34.6 |
| 1982 | 111 | 46 | 41.4 |
| 1983 | 28 | 13 | 46.4 |
| 1984 | (122) | 66 | Resign!
54.1 |
| 1985 | 131 | 49 | 37.4 |
| 1986 | 59 | 31 | 52.5 |
| 1987 | 124 | 63 | 50.8 |

| <u>Year</u> | <u>NO. ID
Nesters</u> | <u>TAG,
Resighting</u> | <u>%
Resight</u> |
|-------------|---------------------------|----------------------------|----------------------|
| -1988 | 180 | 87 | 48.39 |
| 89 | 294 | 143 | 48.6 |
| 90 | 150 | 59 | 39.3 |
| 91 | 107 | 53 | 49.5 |
| 92 | 384 | 196 | 51.0 |
| 93 | 181 | 102 | 56.4 |
| 94 | 122 | 72 | 59.0 |
| 95 | 240 | 139 | 57.9 |
| 96 | 349 | 187 | 53.6 |
| 97 | 481 | 294 | 61.1 |
| 98 | 61 | 47 | 77.0 |

| <u>YEAR</u> | NO. ID
nesters | TAG
Resights | |
|-------------|-------------------|-----------------|------|
| 1999 | 198 | 127 | 64.1 |
| 00 | 337 | 181 | 53.7 |
| 01 | 295 | 191 | 64.7 |
| 2002 | 447 | 303 | 67.8 |

