

# KAUAI- BALAZS

COMPOSITION BOOK

9-21-09 <sup>POI PU</sup> ~~KA KA KA NIU~~  
~~POI PU - KA KA NIU~~

100 Sheets, 200 Pages  
9.75 inch x 7.50 inch  
Wide Ruled with margin

久

# BALAZS



Dr. Balazs,  
Thank you for your help with this study.

Overview of the Green Sea Turtle Poster Paper Presentation in Honolulu, Nov 3-5, 2011

Included in this packet are two things:

- A reduced copy of the 3x4 poster paper
- A two page summary of the presentation.

Enjoy

Jim



# Observations of the Green Sea Turtle on Kauai, HI

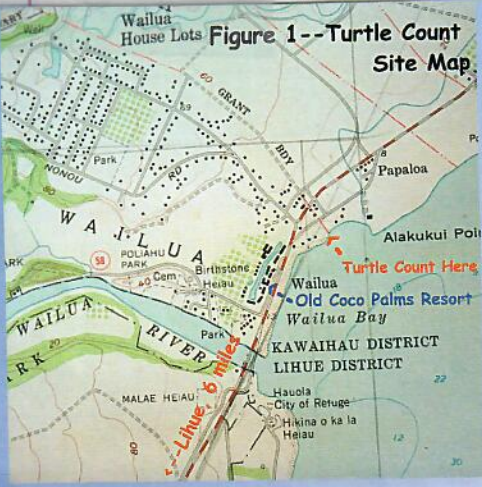
## Abstract

This study began in 1997 as a recreational activity, growing into a more structured study in 2002, and it continuing until February of 2010. During those 14 years, data were collected over 400 days. More than 8,300 ocean sightings of the green turtle (*Chelonia mydas*) were recorded. Those included counting 5,700 turtle heads, along with an additional 2,600 sightings of flippers and bodies (including silhouettes in waves). An analysis of various oceanographic factors lead to some interesting trends. Factors that seemed to relate to these sightings of the green sea turtle included **tide height**, **wave height**, **amount of sunlight**, and **clarity of water**. Presentations of graphics for each of those four factors indicate important trends in sightings.

Vernon J. LaBau  
Affiliate Faculty  
School of Natural  
Resources and  
Agriculture Science  
University of Alaska,  
Fairbanks

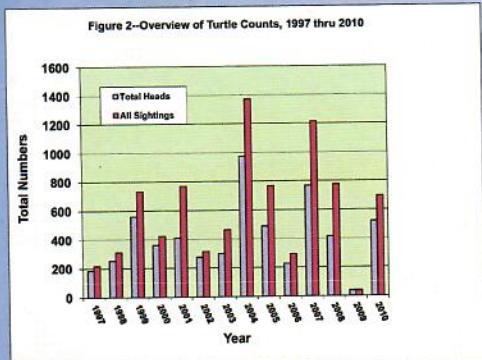






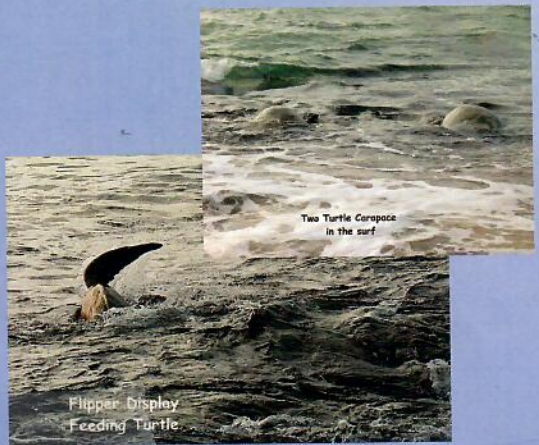
**Figure 1**  
Location of Turtle Count Study

The turtle count area is on the east shore of the island of Kauai, about 1 mile north of the Wailua River, and about 100 yards north of the now abandoned Coco Palms resort. This was done in a turtle feeding area up to 100 feet off shore and in an arc of about 60 degrees. Counts were done for 15 minutes at 8 AM each morning.



**Figure 2**  
Overview of Turtle Counts, 1997 thru 2010

The counts of turtle heads sighted along with other sightings increased from 1997 through 2004 and thereafter declined. Some of the variation in these counts may be due to up to 100 % year to year variations at hatching time (Balazs, 1980).



**Conclusion**

There are many factors affecting sightings of turtles feeding, beginning with population dynamics in hatching, predation, egg poaching, and etc. This study looked at some additional natural influences, such as tide height, wave height, clarity of water, and cloud cover. The study of all of these four factors appeared to show strong trends affecting feeding habits of the green sea turtle.

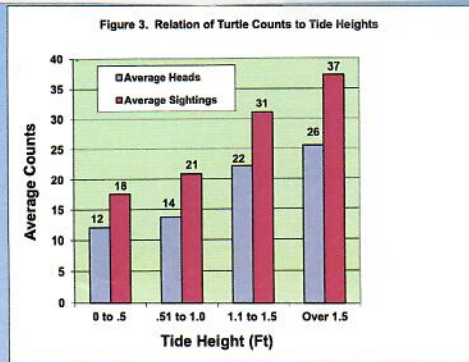
**Literature Cited**

Balazs, G. W. 1980. Synopsis of biological data on the green turtle in the Hawaiian Islands. U.S. Dep. Commerce, NOAA Tech. Memo. NMFS-SWFC-7 and University of Hawaii Sea Grant Cooperative Report UNHI-SEAGRANT CR-81-02, p 321.



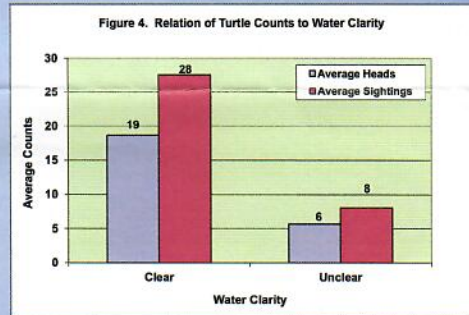
### Figure 3 Relation of Turtle Counts to Tide Heights

There is a strong relationship of number of turtle sightings to tide height with fewer sightings at low tides and the most sightings at higher tides. Higher tides mean more feed available to the turtles.



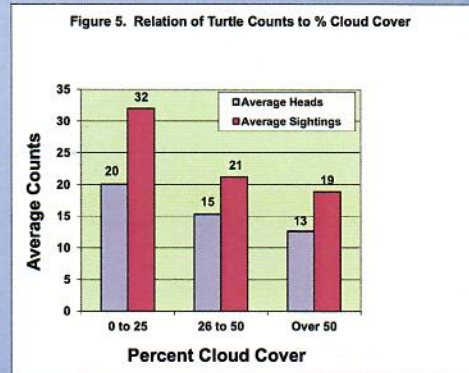
### Figure 4 Relation of Turtle Counts to Water Clarity

There is a strong relationship of number of turtle sightings to water clarity, with more above water sightings when water is clear, and fewer sightings when water is less clear (i.e. muddy). Less clarity of water usually follows sediment input due to heavy rains, and food is not as easy to find when water is less clear.



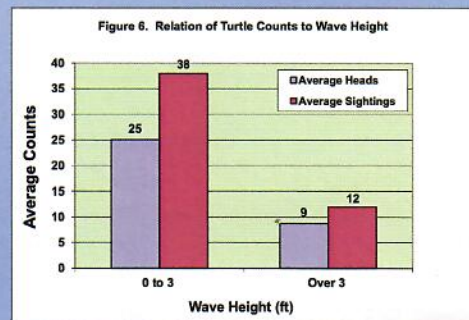
### Figure 5 Relation of Turtle Counts to % Cloud Cover

There is a strong relationship of number of turtle sightings to percent cloud cover, with more sightings during less cloud cover and fewer sightings during heavy cloud cover. The lighter cloud cover should mean more light in the water, making it easier to find food.



### Figure 6 Relation of Turtle Counts to Wave Height

There is a strong relationship of number of turtle sightings to wave height, with more sightings when wave heights are lower and fewer sightings when wave heights are high. High wave heights can cause turtles to be washed on shore into rocks, and so turtles apparently avoid feeding along shores with high waves.





Date: Tue, 28 Jun 2011 07:52:23 -1000  
From: Shawn Murakawa <Shawn.Murakawa@noaa.gov>  
To: 'George H. Balazs' <gbalazs@honlab.nmfs.hawaii.edu>  
Subject: FW: Metal Tags

Historical reports attached for all turtles, except Q243/Q244. These tags (Q226-Q250 sent to Wade Ishikawa on 11-20-95, but not found in TDPS).

-----Original Message-----

From: Tyler.Bogardus@noaa.gov [mailto:Tyler.Bogardus@noaa.gov]  
Sent: Monday, June 27, 2011 1:07 AM  
To: George H. Balazs  
Cc: Irene Nurzia-Humburg; Shawn.Murakawa@noaa.gov  
Subject: Metal Tags

Metal Tags:

V-10, Y845  
U439  
6131, 5999  
7239, 9564  
A650  
W730  
U309, U310, A369  
G607, G608  
Q243, Q244  
H631, H630, T50290

Tyler

*See  
Kawai  
Book*



from JAN PAPAS  
data.gov

123

KAUAI Sept. 21, 2009  
TUESDAY  
KAAKAAUI (Larsens Beach)  
w Don Heacock - excavation 91 hatchlings  
N=94 Released - 200 hatched, 1 partial dead  
Poipu - Mimi O'Leary + LifeGuard  
Roy YAMAGATA  
Fedexed - Loan = Banner, Pit Reader, 35' Red Rope,  
Plastic signs "stay behind red rope"

Notes:

← LAUNUKETA

004965

09/24/2009



↑  
Kauai  
LARSEN'S  
(KAAKAAUI)



# Observations of the Green Sea Turtle (*Chelonia mydas*) on Kauai, Hawaii

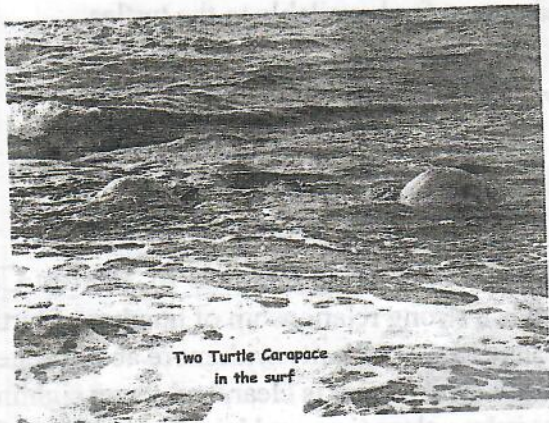
Vernon J. LaBau

Affiliate Faculty

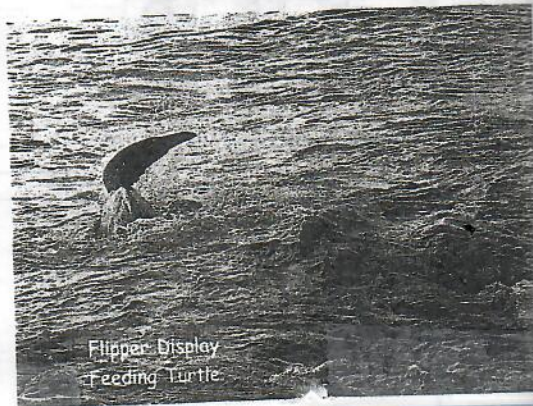
School of Natural Resources and Agriculture Sciences

University of Alaska, Fairbanks

Email: Jimlabau3@cs.com



Two Turtle Carapace  
in the surf



Flipper Display  
Feeding Turtle



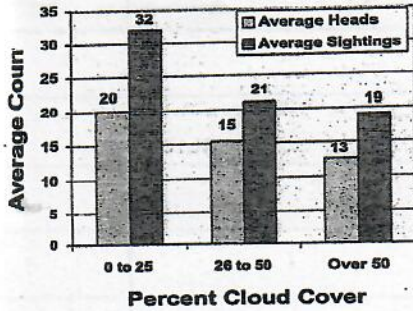
**Abstract:** This study began in 1997 as a recreational activity, growing into a more structured study in 2002, and it continuing until February of 2010. During those 14 years, data were collected over 342 days. More than 8,500 ocean sightings of the green turtle (*Chelonia mydas*) were recorded. Those included counting 5,700 turtle heads, along with an additional 2,600 sightings of flippers and bodies (including silhouettes in waves). Until recently, the green sea turtle has been considered endangered, but it is currently making a comeback. The results of this study should be helpful in scientifically monitor the green sea turtle populations and also should be useful in helping recreationists choose conditions best for viewing the green sea turtle. An analysis of various oceanographic factors that seemed to relate to sightings of the green sea turtle included tide height, wave height, amount of sunlight, and clarity of water. Presentations of graphics for each of those four factors indicate important trends in sightings.

**Location:** The turtle count area is on the east shore of the island of Kauai, about 1 mile north of the Wailua River, and about 100 yards north of the now abandoned Coco Palms resort. This was done in a turtle feeding area up to 100 feet off shore and in an arc of about 60 degrees. Counts were done for 15 minutes at 8 AM each morning.

**Conclusion:** There are many factors affecting sightings of turtles feeding, beginning with population dynamics in hatching, predation, egg poaching, and etc. This study looked at some additional natural influences, such as tide height, wave height, clarity of water, and cloud cover. The study of all of these four factors appeared to show strong trends affecting feeding habits of the green sea turtle.

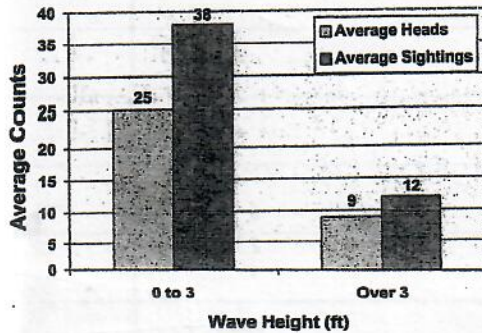


Figure 5. Relation of Turtle Counts to % Cloud Cover



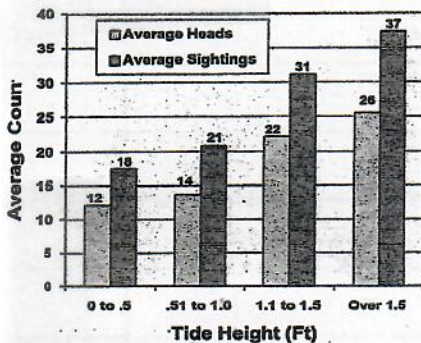
**Relation of Turtle Counts to % Cloud Cover:**  
 There is a strong relationship of number of turtle sightings to percent cloud cover, with more sightings during lower cloud cover and fewer sightings during heavy cloud cover. The lighter cloud cover should mean more light in the water, making it easier to find food.

Figure 6. Relation of Turtle Counts to Wave Height



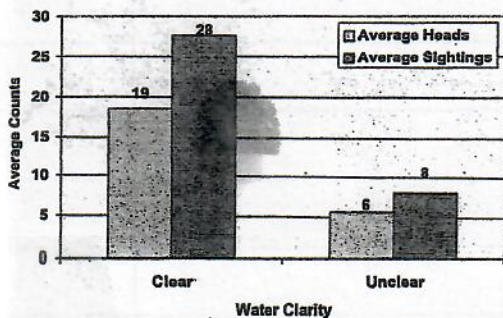
**Relation of Turtle Counts to Wave Height:**  
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Figure 3. Relation of Turtle Counts to Tide Heights



**Relation of Turtle Counts to Tide Heights:**  
 There is a strong relationship of number of turtle sightings to tide height with fewer sightings at low tides and the most sightings at higher tides. Higher tides mean more feed available to the turtles.

Figure 4. Relation of Turtle Counts to Water Clarity



**Relation of Turtle Counts to Water Clarity:**  
 There is a strong relationship of number of turtle sightings to water clarity with more above water sightings when water is clear, and fewer sightings when water is less clear (i.e. muddy). Less clarity of water usually follows sediment input due to heavy rains, and food is not as easy to find when water is less clear.



KAWAI  
Book

MTRP Kauai Site Visit- Locations

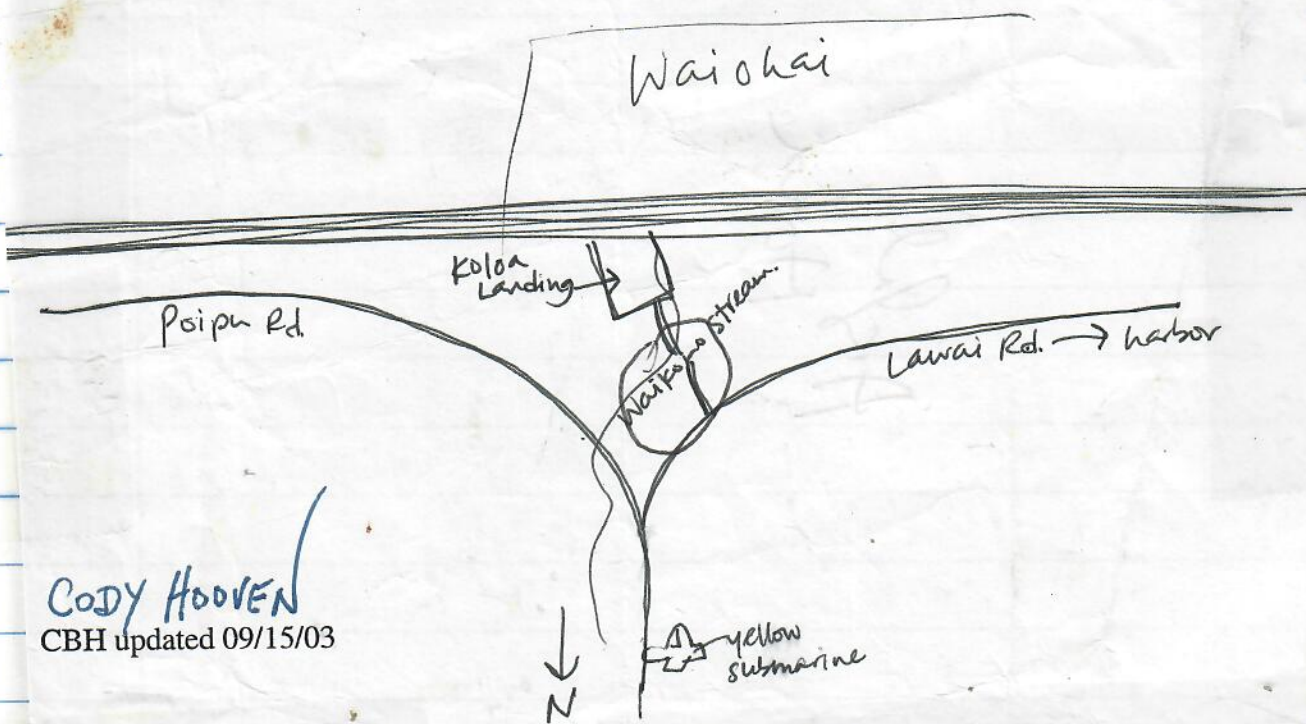
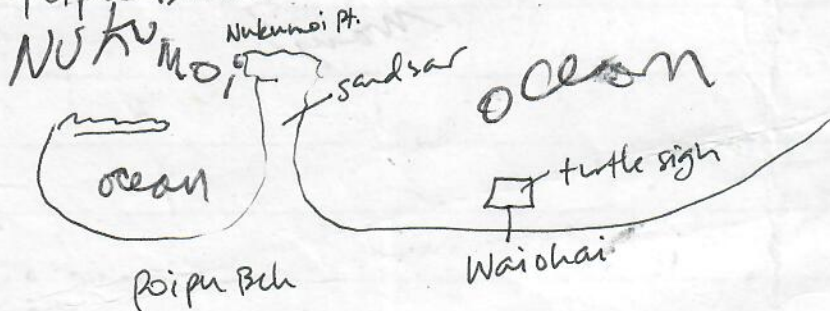
f

- Kee Beach - end of road, north shore
- Queen's Bath, Princeville
- Pali Ke Kua (Princeville Condo, steps going down)
- Seacave where leatherback was supposed to have nested?
- Nohili Ditch (PMRF turtles, contact environmental person)
- Hale O Honu (Port Allen)

① - <sup>Waikomo</sup> ~~Waipi~~ Stream/ Koloa Landing (email) - ~~where turtle~~  
hauled out on rocks



2) - Poipu Bch - in front of Waiohai -  
 where FRAZIERS put sign & turtle feeds  
 close to shore. Also, the Honu Bar is there ☺  
 - supposedly a large turtle basks occasionally  
 at Poipu Beach on the sand bar area or left side



CODY HOOVEN  
 CBH updated 09/15/03



9-21-09





9-21-09









2008





WEDNESDAY • MAY 20, 2009 • ONLINE: WWW.THEGARI



Contributed Navy photos by Jay C. Pugh

**Capt. Aaron Cudnohufsky**, U.S. Navy Pacific Missile Range Facility commanding officer, left, assists (from left) base sustainment coordinator Dennis Rowley, base spokesman Tom Clements, state aquatic biologist Don Heacock and PMRF security Bobby Ragasa, in loading an injured green sea turtle onto a base security all-terrain vehicle for transport to a waiting truck last week at Barking Sands.



# Injured green sea turtle rescued



**Had it not been for the quick action of civilians at the U.S. Navy Pacific Missile Range Facility last week at Barking Sands, this adult female green sea turtle, found injured and bleeding in waist-deep water near Nohili, would likely have been killed by sharks, state officials said. The endangered animal underwent surgery on O'ahu and was returned to the wild. A boat's propellor likely did the damage.**

## State biologist: Speeding boat's propellor likely did the damage

**Paul C. Curtis**

THE GARDEN ISLAND

MANA — Don Heacock has two words for ocean boaters in areas known to be frequented by sea turtles: "speed kills."

Speeding boats and their razor-sharp propellers are responsible for four or five "vessel-related turtle deaths this year" in Kaua'i waters, said Heacock, aquatic biologist with the state Department of Land and Natural Resources Division of Aquatic Resources.

That number nearly in-

creased by one last week when a female green sea turtle found injured and bleeding in waist-deep water off the U.S. Navy Pacific Missile Range Facility at Barking Sands was rescued by humans.

Her injuries are consistent with contact with a boat propellor, Heacock said.

The turtle, weighing in excess of 300 pounds, was sent to O'ahu, endured around three hours of surgery to repair her cracked shell, or carapace, and other injuries, and released back into the wild

**See Turtle, A7**



## Turtle

*Continued from A1*

last week, said Heacock.

Sea turtles, which rest and bask on the ocean's surface, are regularly seen in shoreline areas where coral, reefs and rocks provide ample food sources and shelter from their main predators, tiger sharks, Heacock said.

"Remember, these are shoreline animals. The moral of this story is speed kills," and boats going too fast to be able to avoid these creatures likely caused the deaths and injury, he said.

Heacock said the injured female likely heard or felt the approaching boat, but not in enough time to dive out of harm's way.

The turtle suffered one propeller strike near the middle of her carapace and the most-damaging blow was nearer to the bottom of her shell, near her pelvis, which severed the top of the carapace and cut through the turtle's spinal column.

When rescuers reached her she was bleeding and had they not brought her quickly to shore she likely would have become a meal for tiger sharks, who can detect blood in the water from 10 miles away, Heacock said.

Stainless steel pins, epoxy and a fiberglass sheet were used to fix her carapace and veterinarians were also able to repair her internal damage, he said.

After giving her antibiotics and seeing that she was "full of energy" after the op-

eration, a decision was made that it would be best for the turtle to get back into the water, feeding on her own, in her natural habitat. So she was released off Kane'ohe, O'ahu, Heacock said.

"In animals, it's adult females that count, so they (veterinarians) went to great efforts to save this turtle," Heacock said.

And, since the endangered animals are very territorial, Heacock and others are hopeful this one will return to Kaua'i, where she will be very recognizable with a large orange mark and tagged fins.

"We'll be watching" for her, Heacock said.

Tom Clements, PMRF spokesman, who had a hand in the rescue at Nohili on the base, has affectionately nicknamed the turtle "Ding," as veterinarians on O'ahu used fiberglass to repair a portion of her damaged shell, as surfboard repair people use fiberglass to fix dings in surfboards.

According to Clements, the turtle was discovered near the Nohili shoreline at PMRF, initially by Jason Shimauchi of the U.S. Department of Agriculture Animal and Plant Health Inspection Service, assigned to the base primarily for the purposes of investigating aircraft collisions with birds.

Shimauchi and others monitored the turtle, which had injuries consistent with contact with a boat propeller, until the arrival of Heacock, Clements said.

The turtle was so heavy,

that it took five men to carry her, including Clements and base Commanding Officer Capt. Aaron Cudnohufsky, moving it first out of the shore-break and eventually onto a PMRF security all-terrain vehicle for transport down the beach, up the berm and to Heacock's waiting state truck.

Initially, Clements and Cudnohufsky were there only to monitor the situation, according to Clements. But when Heacock said the turtle weighs around 350 pounds, it was all hands on shore to lift the critter.

She is estimated by Heacock to be between 50 and 80 years old. The only way to estimate age of a living turtle is by weight, he said.

After being monitored by Heacock on Kaua'i overnight, the turtle was airlifted to O'ahu on Aloha Air Cargo, in surgery for three hours on O'ahu, then released back into the ocean off Kane'ohe, O'ahu.

Clements has high hopes that Ding will eventually make her way back to Nohili, a popular place for turtles to haul out for rest. Heacock said it is likely she will make her way back to Kaua'i, and even at age 75 or 80, is still capable of reproducing.

According to Heacock, the healthy female turtle has no known tumors or other medical problems.

► **Paul C. Curtis**, staff writer, can be reached at 245-3681 (ext. 224) or [pcurtis@kawaipubco.com](mailto:pcurtis@kawaipubco.com)



12/08

## Turtle Nesting Project

### Protocol for Turtle Nesting at Lāwa`i-kai

The purpose of this paper is to establish a protocol for monitoring, protecting, researching and documenting the nesting sites of Hawaiian Green Sea Turtles (*Chelonia mydas*) on the beach at Lāwa`i-kai.

### Discovering Sites

During morning hours gardeners working in Allerton Garden down at Lāwa`i-kai walk through the Lāwa`i-kai Beach Restoration site. When discovering any tracks of Hawaiian Green Sea Turtles on the beach, or turtles in the process of nesting, gardeners are to notify Rick Hanna immediately.

### Notification

After discovering turtle nesting sites apply this contact chain to notify all the proper people. Contact Chain: Rick Hanna – Don Heacock – George Balazs - Dave Burney – Jonathan P. Carbone – Chipper Wichman. Notify these people either by email or phone calls.

the GPS Lab at the Conservation and Horticulture Center. Copies of any information collected from these nesting sites used for reports or scientific papers should be provided to NTHG. Successful annual documentation will help preserve the Lāwa`i-kai beach as a Hawaiian Green Sea Turtle nesting ground.



### Securing the Sites

Early establishment of a buffer zone is very crucial to protecting the active nesting sites. Rick Hanna or GIS Coordinator Jonathan Carbone will tie yellow police tape around each nesting site as soon as possible. A perimeter of ten feet should be given to each nest. This provides an adequate safety zone for the eggs beneath the sand. During the weekdays the gardeners in Allerton will provide daily watch. Throughout the weekends and holidays Rick Hanna and the garden's security force will keep a vigil over the nesting sites. This will help prevent any human disturbance and protect the turtle nests from being trampled. Also if the female turtle is still in the process of nesting care must be taken so that she will not feel threatened and abandon her clutch.

### Documentation

Recording information about the specific site is crucial. Jonathan Carbone will make sure information is recorded, dated, and saved. Each nest should be labeled and given a name. Tags should be made for each site and attached to a pvc pipe placed directly one meter north of each nest. The location of the nesting site should then be taken by GPS and mapped.



### Observation/Monitoring

Close attention should be given to the turtle nests. Daily inspection will help maintain the integrity of the nesting sites. Also a constant vigil will help ensure a good record of when the eggs hatch. Keeping a record of when the eggs were laid will provide a time frame for when hatching may occur. During this period an increase in monitoring the nesting sites will be required. Jonathan Carbone, perhaps with help from other staff and interns, will carry out monitoring activities.

### Digging/Recording

Because Hawaiian Green Sea Turtles are listed as a protected species by the Federal government, any collection of turtle egg shells would be considered a "taking". Therefore, only people with proper authorization may collect egg shells after the nest has hatched. Don Heacock for example, who works for the Department of Land and Natural Resources Aquatic Resources Division, has legal permission to carry out diggings and collections in Hawaiian Green Sea Turtles nests. The following is a list of authorized personnel and contact information.

### Final Analysis

Once all of these steps have been taken, the ground work will have been laid for future management and supervision for the Lāwa'i-kai sea turtle nesting sites. After all protocols have been conducted and State Government representatives have concluded their analysis, all information and data is to be saved and documented by the GIS Coordinator into the Geo-database at the Conservation Department. Then all the information should be printed out and put into the Turtle Nesting Project folder located in the GIS Lab at the Conservation and Horticulture Center. Copies of any information collected from these nesting sites used for reports or scientific papers should be provided to NTBG. Successful annual documentation will help preserve the Lāwa'i-kai beach as future Hawaiian Green Sea Turtle nesting grounds.



**Subject:** [Fwd: FW: Hawaiian Greenback Turtle]

**From:** "Brandee Gerke" <Brandee.Gerke@noaa.gov>

**Date:** Wed, 30 Aug 2006 10:19:49 -1000

**To:** George Balazs <George.Balazs@noaa.gov>, Wende Goo <Wende.Goo@noaa.gov>

50 CFR  
223.206(b)

The Coast Guard assisted with an entangled green turtle near Kauai earlier this week. The details are below. The Coast Guard has authorization per 50 CFR 223.206 to take stranded turtles without a permit if such taking is necessary to aid to a sick, injured, or stranded specimen. I applaud their efforts with this turtle.

----- Original Message -----

**Subject:** FW: Hawaiian Greenback Turtle

**Date:** Wed, 30 Aug 2006 07:52:38 -1000

**From:** Deems, Kyle LTJG <Kyle.T.Deems@uscg.mil>

**To:** <brandee.gerke@noaa.gov>

KAWA



\*From:\* Gilrein, Ryan BM2  
\*Sent:\* Tuesday, August 29, 2006 6:26 PM  
\*To:\* Deems, Kyle LTJG  
\*Cc:\* Moreland, John BMC  
\*Subject:\* Hawaiian Greenback Turtle

Good afternoon Mr. Deems,

The following is an account of Station Kauai's  
disentanglement of a Hawaiian Greenback Turtle on 29Aug06.

On 29Aug06, I, BM2 Ryan Gilrein got u/w from Station Kauai as Cox'n in CG25609 at approximately 1011W. My Crew was BM3 Webber as B/I Cox'n, BM3 Perez as B/I Crewmember, and SN Hubert as Crewmember. As we transited outbound Nawiliwili Harbor for our intended weather check, my crew observed what appeared to be a sponge attached to a length of nylon line, in the center of the channel. This is a standard setup for a crab trap in this area. Upon closer inspection, I discovered the trap to be entangled on the body of a Hawaiian Greenback Turtle on the surface of the water. My crew and I could not at first determine whether it was around the neck or not so I notified Station Kauai requested they notify NOAA for further guidance. I then observed the turtle try to dive under water but due to the buoyancy of the sponge, it could only dive approximately four feet down. With boats inbound Nawiliwili Harbor and the idea of this turtle unable to swim or dive, I decided bring the turtle aboard CG25609. After BM3 Perez and SN Hubert brought the turtle aboard. We then proceeded to use the bucket in the RB-S to keep the turtle cool. After inspecting the entanglement, the crab trap tightly fouled around the turtle's neck and flipper. My crew and I determined that using our duty knives and Boat Crew Survival Knives to disentangle the turtle would do more harm than good, so I then notified Station Kauai that we would RTB with the turtle. Station Kauai OIC informed me that a NOAA representative would be on station soon. Once moored, BM3 Perez and BM3 Webber carried the turtle to the garage bay, where Station personnel proceeded to remove the sponge, nylon line, plastic fishing line and metal crab trap with surgical scissors and blunt tipped wire cutters. NOAA Rep. Mr. Don Heacock (contact number 808-645-0532) then arrived on station, determined that Station Kauai's disentanglement efforts were successful, and instructed us to release it to the wild.

If you have any further questions please contact me at ph.#  
808-246-0279.

Very Respectfully,

BM2 Ryan C. Gilrein



Date: Thu, 13 Jun 2002 02:56:40 EDT  
From: ALIGON@aol.com  
To: gbalazs@honlab.nmfs.hawaii.edu  
Cc: wild@aloha.net, jarman@aloha.net  
Subject: Hawksbill Sighting

Hi George, I was on Kauai last week doing reef surveys for UH and while traveling along the Na Pali coast to our site, we observed a Hawksbill take a breath at the surface. (Eric Brown was certain of the ID, I only saw where the turtle was!) Anyway, we took a GPS location in case it could be of use to anyone:

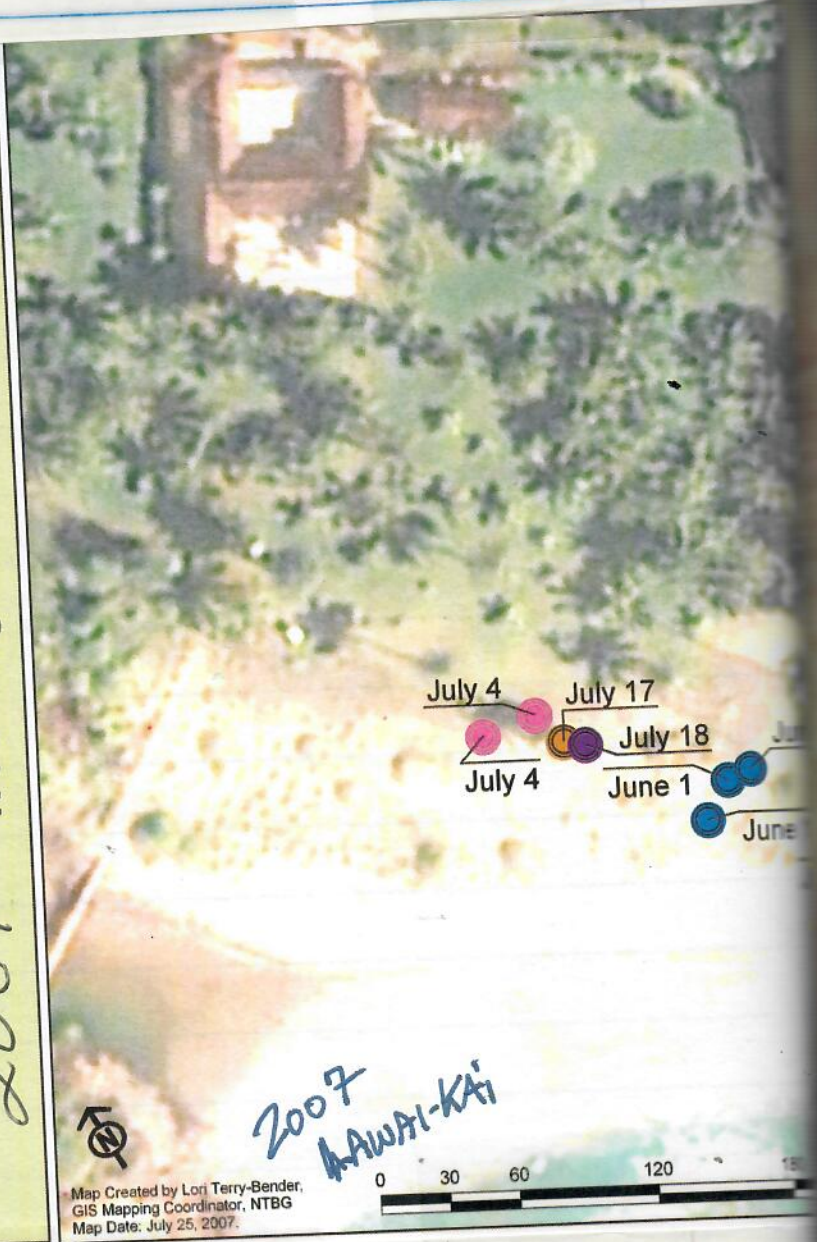
6/4/02, 07:34, N22 12.306', W159 36.521'

Anyway, just thought I'd pass the info along.

Allan Ligon  
aligon@aol.com



**Turtle Nests at Lawai-Kai**  
2007 Nesting Dates



2007  
LAWAI-KAI



Kilauea Iki

# LU'AI KALAMAKU

Date: Mon, 17 Nov 2003



1 June 15  
2 July 13  
July 13

June 3 June 3

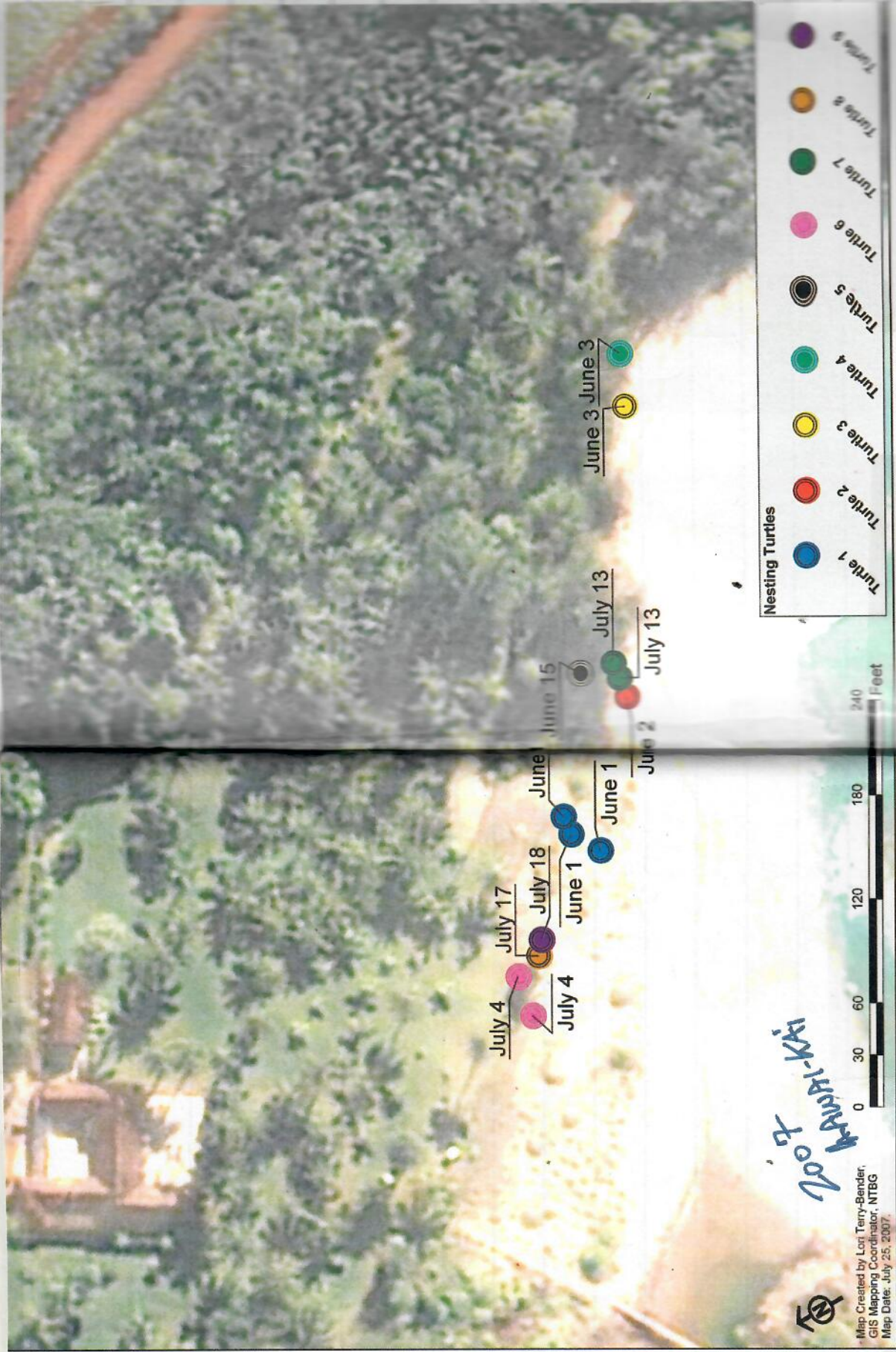
### Nesting Turtles

- Turtle 1
- Turtle 2
- Turtle 3
- Turtle 4
- Turtle 5
- Turtle 6
- Turtle 7
- Turtle 8
- Turtle 9

240  
Feet

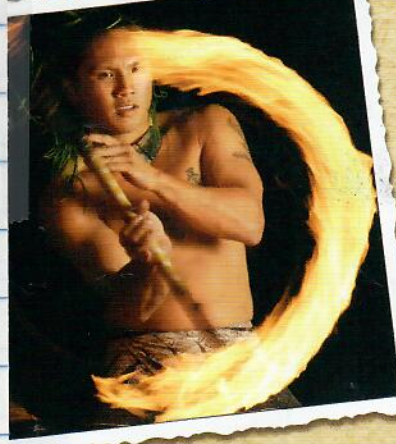
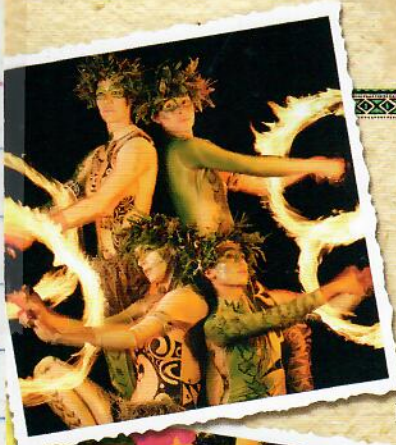


# Turtle Nests at Lawai-Kai 2007 Nesting Dates





KILOHANA PLANTATION



*If you only experience* one thing in Hawai'i, make sure you don't miss this spectacular extravaganza. Graceful Hula dancers, fire poi ball twirlers, traditional fire knife dancing, lavish buffet of local delicacies and a vivid storyteller come together for this once-in-a-lifetime authentic experience.

*It's all happening* in the historic sugar plantation of Kilohana every Tuesday evening. Or come early and make a day of it! Stroll the shops, catch the Kauai Plantation Railway or ride the Clydesdale Carriage. Enjoy craft demonstrations and our traditional hawaiian games—even gather around an Imu pit!

**EVERY TUESDAY**  
*and*  
**FRIDAY EVENING**

For reservations & more information, call toll-free **1-877-622-1780**, see your concierge/activity desk, or visit [www.luaukalamaku.com](http://www.luaukalamaku.com).

**DIRECTIONS:** Take Highway 50 south from Lihue toward Po'ipu. Past Mile Marker #1, turn right on Kaunualii Road. We are located on the grounds of Kilohana Plantation.



**LŪ'AU  
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1611203



**Subject: Kauai green turtles**

**Date: Mon, 17 Nov 2003 18:09:07 EST**

**From: Srola46@aol.com**

**To: George.Balazs@noaa.gov**

KAUAI  
Book

Hello,

Very sorry to bother you, but I just read the article from the Pacific Whale organization on Maui about encouraging people to make turtle reports, and am taking a chance that you won't mind me writing. I "Googled" your name in the hopes of finding out more about the work you are doing.

I just returned to the mainland (Oregon) after a vacation in Kauai in late October, and I have a turtle report. We stayed in a cottage on the Waipio Stream on the south shore (near Poipu and an adjacent boat launch). A LOT of green sea turtles come up the stream to rest during the day. One day we counted 19! They pull up on the rocks along the stream. Quite a few are afflicted with FP. One in particular had a tumor on its neck the size and appearance of a head of cauliflower. I have a photo I can email. I wondered who to report it to, or if you and your group already know about this spot? I did see a guy there a couple of times who cut fishing line off one younger turtle and seemed to be assessing the situation -- I talked to him a little but didn't get a name or agency to call. My husband and I cleaned up a lot of fishing line and styrofoam trash all around the stream area, and observed the turtles come and go during the week we were there. I could watch them all day.

I have great respect for the work you do and have read a lot about you and other turtle researchers. I have been educating myself about turtles ever since my family and I snorkeled near some at Honaunau on the Big Island three years ago (have been back to Hawaii 3 times since, been to Maui too). I have also read Fire in the Turtle House. I wish there was more I could do to help them. Do donations truly help? I located the World Turtle Trust website and also Turtle Trax. Am trying to find a resource for the "Red Turtle Rising" movie -- the link from WTT website doesn't work.

Thank you very much for your time. I hope you all know about this spot on Kauai. Fortunately it seemed like not many in the general public do, as it was almost always deserted except for the residents who live directly above the stream. I myself found the cottage from a rental company who called the house "Turtle's Nest" and that's all I needed to hear.

Sincerely,  
Susan Rola  
Bend, Oregon



Date: Tue, 18 Nov 2003 10:58:47 EST  
From: Srola46@aol.com  
To: gbalazs@honlab.nmfs.hawaii.edu  
Subject: Re: Kauai green turtles

[ Part 1, Text/PLAIN 24 lines. ]  
[ Unable to print this part. ]

Susan Rola  
649975  
Allen Rd Bend, OR  
97701

Hello again! Thank you for your quick reply! I was delighted to hear back from you and that you are interested in the Kauai site. I will be able to email a photo to you on Friday (the picture CDs from our trip had to be redone and will be ready then, but the prints came out clearly and the ones of the turtles are clear). I will email you all the relevant ones of the stream area and turtles. I know you'll be traveling -- sorry I can't send sooner.

I was wrong about the name of the stream -- it's Waikomo. In case you need exact directions, from Lihue you take Hwy 50 west and Hwy 520 south towards Koloa Town, then through Koloa south on Lawai Rd. Take the road over the bridge, Hoonani Rd, and look on the right for the boat launch into a small bay. Access to the cove is around the rocks to the right of the boat launch. (Rough going and much litter.) The turtles swim up from the bay and rest at the very end of the cove where the stream pours into the cove. I'd say the cove is maybe 200 feet long and 20-30 feet wide. Residents can also access the cove from the opposite side, and sometimes there were fishermen there going for bait fish. We snorkeled a bit in the bay and in the cove, being careful not to bother the turtles, but they seemed (as always) casual about us. One very large one swam right past me before I even saw him/her. The visibility in the cove is poor and it gets shallow and rocky so humans don't seem to like it (fortunately).

Thank you and good luck! Your letter made my day!  
Susan Rola

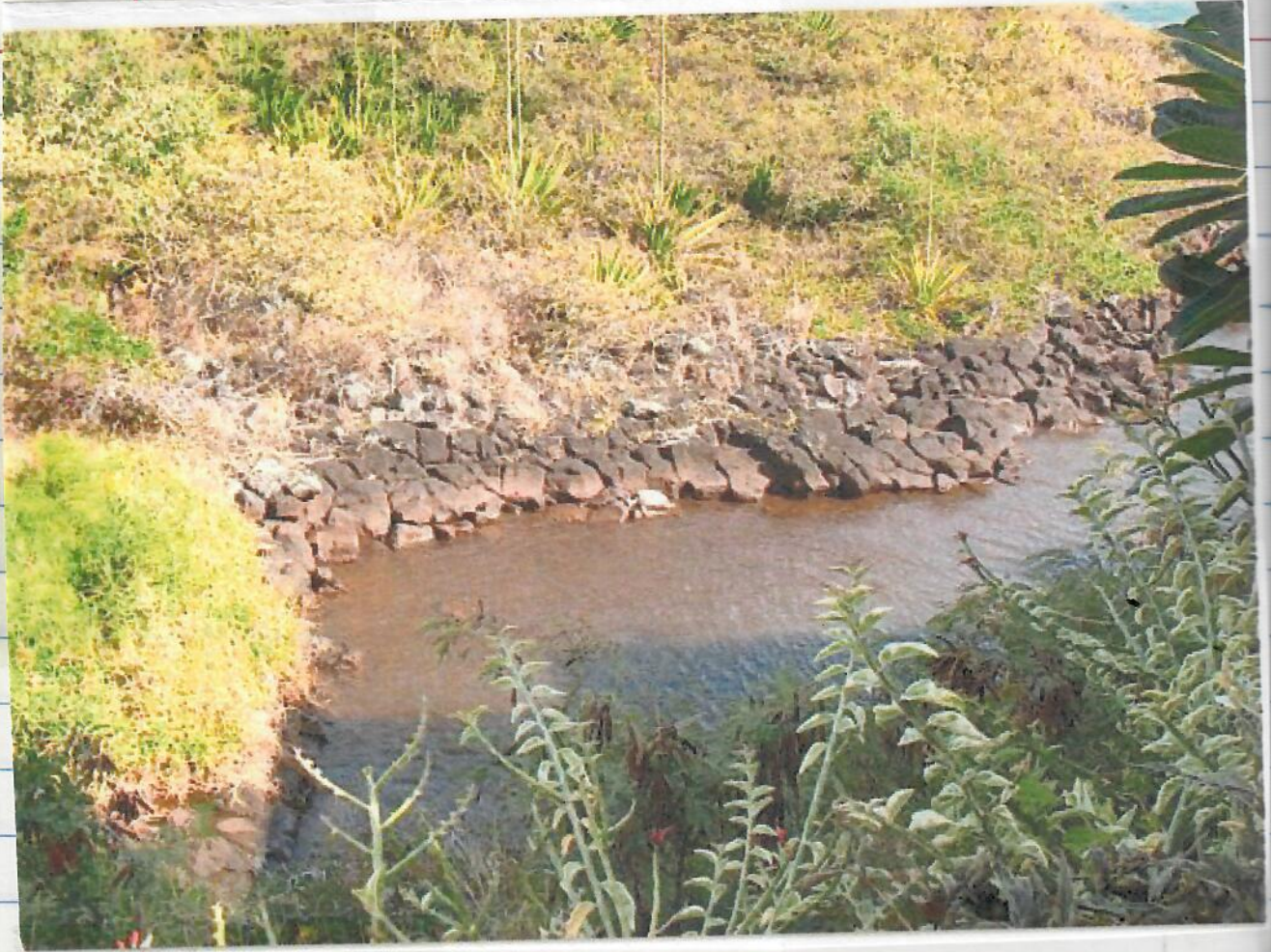
WAIMOKO  
STREAM



WAIMOKO STREAM

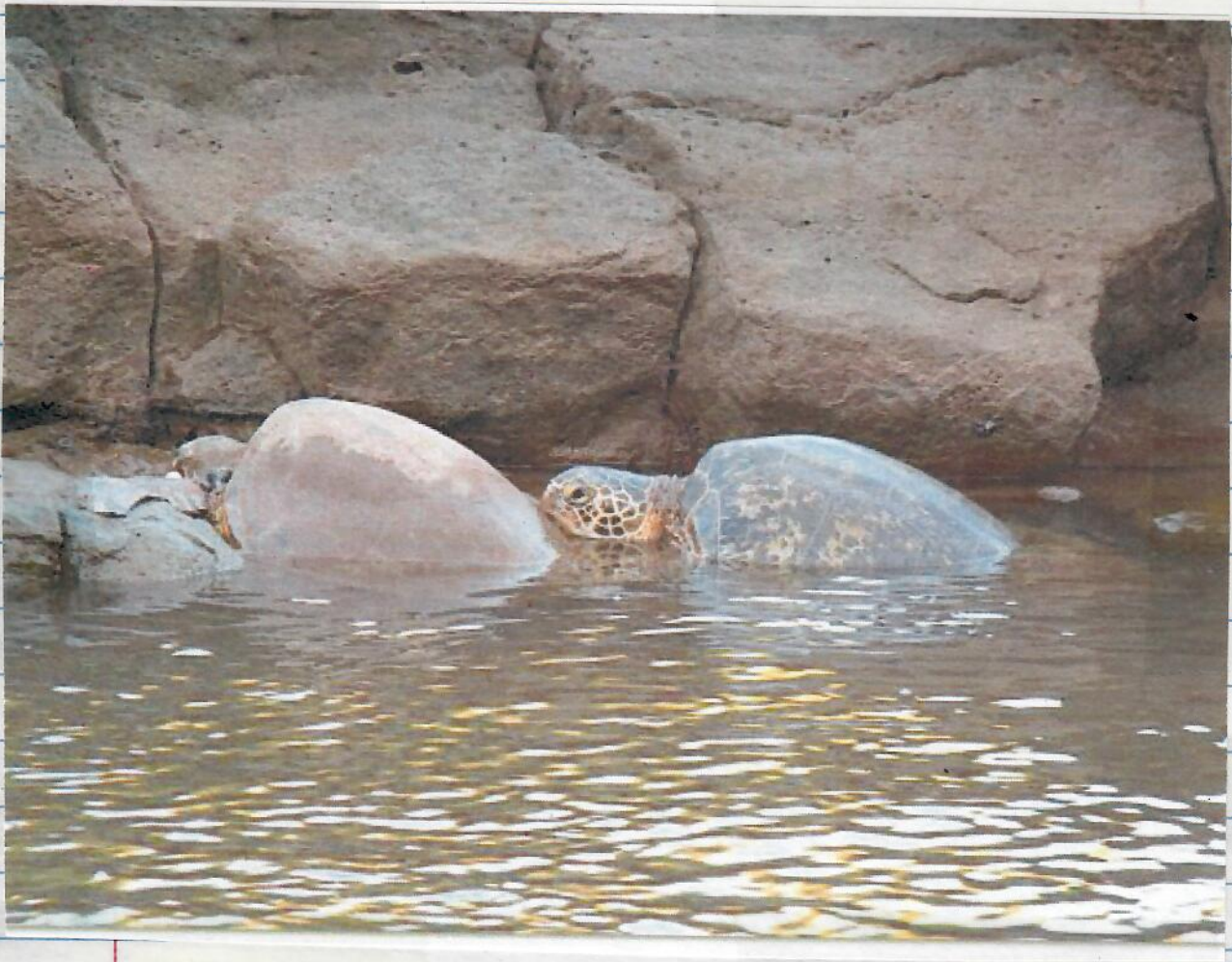




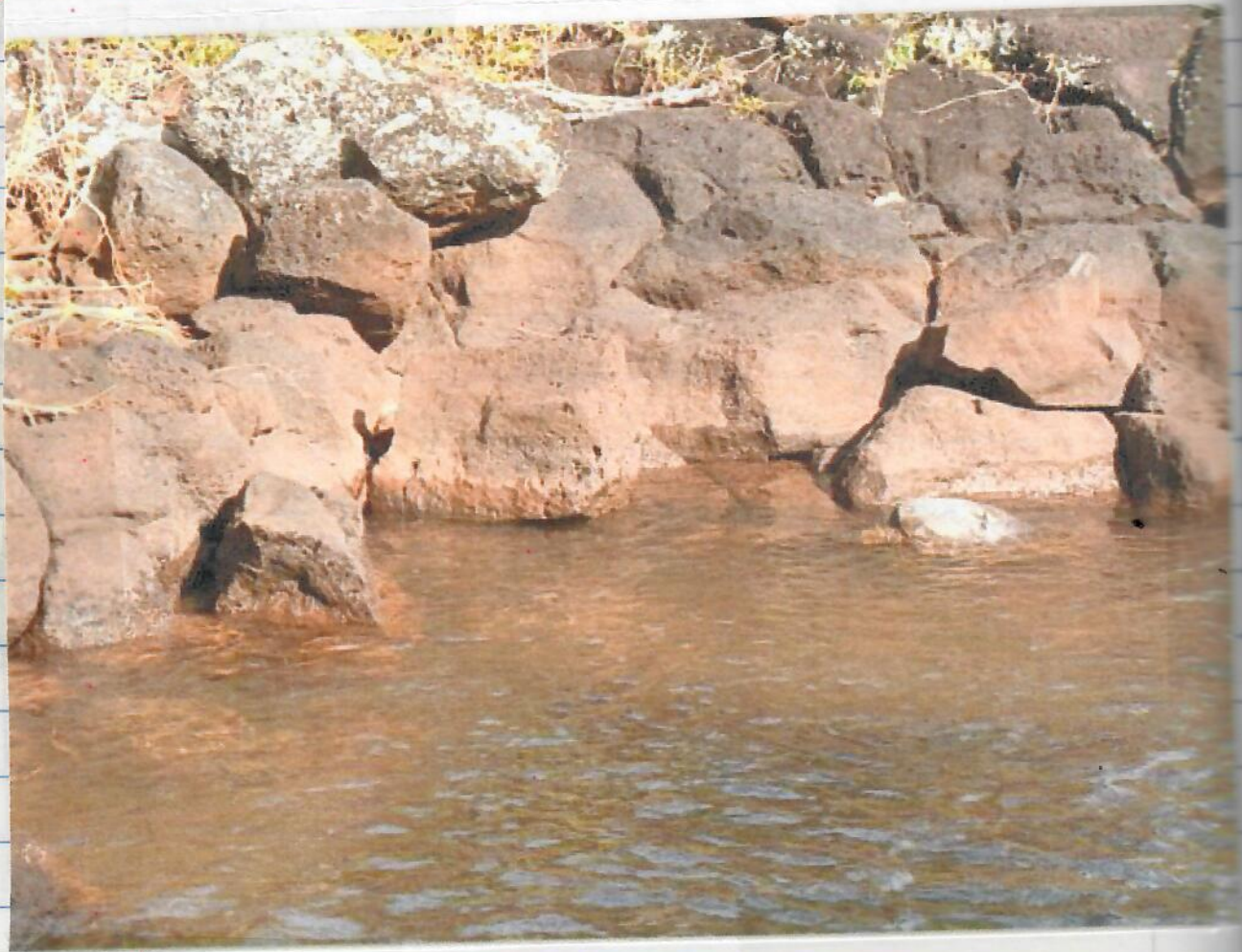


Wainoko  
Stream





















Waikomo Stream, Koloa/Poipu, Kauai  
September 2006

photos from Buffy Swider, visiting Kauai



Date: Wed, 11 Oct 2006 16:05:51 -1000  
From: "Burger, John CIV PMRF" <john.burger1@navy.mil>  
To: George H. Balazs <gbalazs@honlab.nmfs.hawaii.edu>  
Cc: "Pepi, Vanessa E CIV NAVFAC PAC " <vanessa.pepi@navy.mil>,  
Cody.Hooven@noaa.gov, "Clements, Tom H CIV PMRF" <Tom.H.Clements@na  
Subject: RE: Update: Turtles Basking at Barking Sands

George,

As requested, see attached. Regarding jurisdiction, the answer to your question is "no". Our legal boundary has been the subject of a lot of study by various legal experts and others...Although we can control access from the land side, we do not apparently have jurisdiction when approaching from the ocean side. That is to say, from the water line to the vegetation, there is a question about just where our authority ends.

The signage is intended to both educate and discourage access, and we plan to prepare a second display sign at the overlook that will be specifically educational. We have visitors and programs that work in the area, and believe it will raise awareness in both the visiting folks and our own PMRF family.

Look forward to seeing you in February...Cody is still trying to get o here, I believe.

v/r  
John

-----Original Message-----

From: George H. Balazs [mailto:gbalazs@honlab.nmfs.hawaii.edu]  
Sent: Wednesday, October 11, 2006 14:54  
To: Burger, John CIV PMRF  
Cc: Pepi, Vanessa E CIV NAVFAC PAC ; Cody.Hooven@noaa.gov; Clements, T  
H CIV PMRF  
Subject: Re: Update: Turtles Basking at Barking Sands

Nice to hear from you, John. I'll be a Kauai in February for a two day of lectures, etc. I hope to visit you then if your time allows. Regarding the pictures, I couldn't see the wording as well I was would like to, can you please send some other pictures taken with a straight-on view. Question- is all of that beach, from the vegetation zone right to the water's edge, under Navy jurisdiction? Sorry to not know, I guess I should.  
Best Regards, George



> Been some time since we communicated, and seeing the article in the  
> Garden Island on the NCL/NOAA release reminded me of the past  
> exchanges with you and Cody on Green Sea Turtles @ PMRF. (BTW, I was  
> up snorkeling on the North Shore and saw the ship..wondered why it  
> looks so far out compared to it's normal route.)

> Attached is the creative signage done by Vanessa Pepi and Marc Myer  
> over at NAVFAC PAC, using PMRF photos of hauled-out GSTs at Nohili  
> Ditch, and executed on vinyl by our ITT Facilities Maintenance staff  
> (PMRF's BOS contractor), to advise folks to stay clear of Nohili  
Ditch.

> CAPT Mark Darrah is our current CO, and one of a line of Skippers that  
> we have been blessed to have who are exceptionally supportive of our  
> cultural and natural resource programs. The Nohili Ditch continues to  
> be a favorite haul-out/basking location but we still have no signs of  
> nesting or even false nesting. However, we want to keep the area  
> off-limits - regardless. CAPT Darrah has made that clear.

> The GSTs continue to feed on the attached growths either side of the  
> outfall, and as part of an ongoing monitoring program, our Wildlife  
> Services staffer from USDA/APHIS passes by to check on possible  
> activity during his regular rounds on the BASH/Predator Control  
> program (we have two wedge-tailed shearwater colonies that we  
> protect). Since the summer, we have been logging observations at the  
> Nohili Ditch outfall on a regular basis..activity or no activity..in a

> log devoted to GSTs and Hawaiian Monk Seals

> If by chance one of the transmitter-tagged juveniles arrives over  
> here...you will be the first to know. Maybe even before us?

V/R

John Burger

PMRF Environmental Coordinator







George  
just received  
from Don. Sent  
email asking if he has  
it in his freezer. will let  
you know.  
Shawn

Hawaii Division of Aquatic Resources  
Department of Land & Natural Resources  
3060 Eiwa Street, Room 306  
Lihue, Kauai, Hawaii (USA) 96766  
Cellular phone: (808) 645-0532; Email: [donheacock@midpac.net](mailto:donheacock@midpac.net)

To: Shawn Murakawa, NOAA Fisheries (FAX: 983-2902) 7 October 2003  
Fm: Don Heacock

**Re: Green sea turtle mortality at Waimea, Kauai**

On 6 October 2003, a dead honu washed ashore dead in Waimea about 1 km west of Kikiaola small boat harbor. The male honu measured 75.5 cm SCL and 59.5 SCW. The plastron was extremely concave and the animal had many fibropapalloma tumors in the following locations:

1. Top of left front shoulder: (1) 12 cm diameter, globose in shape; (1) 3.5 cm; (1) 2.5 cm;
2. Bottom of left front shoulder: (2) 2.5 cm;
3. Tumors covering both eyes: right eye (3) 2cm tumors; left eye (2) 2cm; turtle may have been blind;
4. Top of right shoulder: (3) 2cm tumors.

Also, the honu had no tags, and had several "old but healed" dents and nicks in the carapace, more than are usually seen in a healthy honu, and may indicate that the honu was infected with tumors for a relatively long period of time.

A local person present at the site stated he had seen another small, about 58 cm SCL, honu on the beach immediately west of Kikiaola boat harbor about 2-3 months ago that resting on beach, was lethargic, and had "many tumors all over its head and shoulders and eyes". The nearshore waters in this area are chronically turbid from discharges from the Waimea River and from Gay and Robinson sugar effluent discharges.

Sincerely,

*Don Heacock*

Don Heacock



377-C

Date: Sat, 9 Nov 2002 19:00:23 -1000  
From: hans gunter <gunter@hawaiian.net>  
To: gbalazs@honlab.nmfs.hawaii.edu  
Subject: Kauai-Turtle

[ Part 1, Text/PLAIN (charset: ISO-8859-1 "Latin 1 (Western Europe  
[ 5 lines. ]  
[ Unable to print this part. ]

[ The following text is in the "iso-8859-1" character set. ]  
[ Your display is set for the "US-ASCII" character set. ]  
[ Some characters may be displayed incorrectly. ]

Hi, this is Hans from Seasport Divers on Kauai. Cody contacted you regarding a adult turtle tag # 377-C I saw at Sheraton Caverns on the South of Kauai on Tuesday 11-5-02. It had no tumors, tag was on LRF not sure the gender. The shell measured approx 39 inch from neck to tail. Pse feel free to contact me direct if you need more info. Aloha, Hans

KAWAI

Top of right shoulder; (3) 2cm tumors.

Also, the hony had no legs, and had several "old but healed" dents and nicks in the carapace, many that are usually seen in a healthy hony, and may indicate that the hony was infected with tumors for a relatively long period of time.

A local person present at the site stated he had seen another small, about 58 cm SC, hony on the beach immediately west of Kikiloa boat harbor about 2-3 months ago that resting on beach, was lethargic, and had "many tumors all over its head and shoulders and eyes". The nearshore waters in this area are chronically turbid from discharges from the Waimea River and from Gay and Robinson sugar effluent discharges.

Sincerely,

*Jon Heacock*

Jon Heacock



Fredric A. Litt

2204 Edgerton Road, University Heights OH 44118 (216) 932-7093

August 20, 2001

NMFS Honolulu Lab  
Marine Turtle Research  
2570 Dole Street  
Honolulu, HI 96822

Fax: (808) 983-2902

Gentlemen:

*Reduce  
Kauai Book*

Following are the turtle sightings during my recent trip to Hawaii. These observations were reported to R.E.E.F., but I am sending them to you separately since their reporting form does not provide the actual count.

Kauai

July 2	Sheraton Caverns	dive	10 am	6 healthy +1 with tumor (sev. 2)
July 6	Haleohonu (Waimea)	dive	10 am	14 healthy
July 10	Haleohonu (severe weather conditions)	2 dives	2 pm	4 healthy
July 11	Kee Lagoon	snorkel	2 pm	1 healthy

Maui

July 16	Rose's Garden	dive	10 am	2 healthy
July 20	Tank & Landing Craft	dive	9 am	1 healthy
July 21	Puu Olai	dive	10 am	5 healthy
July 25	Puu Olai	dive	11 am	4 healthy

I hope it's data you can use.

Sincerely,  
*Fred Litt*



1005

2005

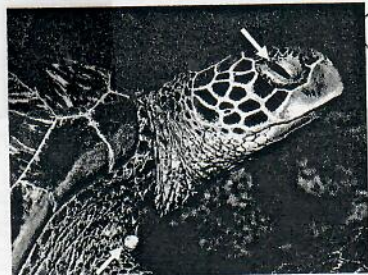
Sea Turtle Sightings

Date	Time of Sightings		Distance and Route covered	Sky, Wind, and Surf Conditions	Underwater Visibility	Total number of turtles seen	Size of turtles <sup>A</sup> (No. turtles)	Severity of tumors <sup>B</sup> (No. turtles)	Behaviors seen (No. turtles)
	Scuba	Snorkel (Shore)							
11/20-11/24	4p	6p (daily)	Our viewpoint was stationary - approx 15ft. from turtles.	partly cloudy, low surf, low wind	From shore, water was murky at times	9	S = 3 M = 5 L = 1	1 = 2 = 2 3 = 1	Swimming = 3 Resting = 2 Feeding = 4 Posing for cleaning = Other (explain below) =
LOCATION and DEPTH: *Koloa Landing, Kauai									

Other Comments and Descriptions: (Injuries, Hooks/Fishing line, Tags, etc.)

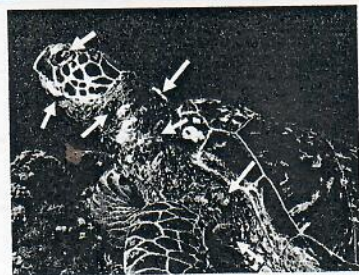
\* Freshwater inlet/cove - appeared to be a feeding/habitat area for honu. We were staying at a condo in Poiipu area (2660 Puholo) that had a lanai overlooking the inlet. We saw at least nine different individuals, three of which appeared to have tumors around the head area large enough to notice from a shore distance of 15-20 ft.

Sightings by (Name, address, phone number): SARA SCOFIELD, 1236 Castillo, Santa Barbara, CA 805-452-3904 Use reverse side if more space needed



1 = Lightly afflicted with tumors

Sent UT



2 = Moderately afflicted with tumors



3 = Heavily afflicted with tumors

<sup>A</sup> Shell size; S = small, < 24 inches (2 ft.); M = medium, 24 - 33 inches (2 - approx. 3 ft); L = Large, > 33 inches (3 ft or greater)

<sup>B</sup> 1 = Lightly afflicted, 2 = moderately afflicted, 3 = heavily afflicted

Note: HARASSMENT AND DISTURBANCE ARE STRICTLY PROHIBITED. All sea turtles in Hawaii are protected by State and Federal regulations. The distribution of this sighting form by the National Marine Fisheries Service is NOT a solicitation to conduct surveys or research. The objective is to record and obtain information from individuals who are normally encountering turtles during the course of their regular activities (recreational or visitor diving, hiking the shoreline, etc.)

SEND COPY TO:  
NMFS, Honolulu Lab  
Marine Turtle Research  
2570 Dole Street  
Honolulu, Hawaii 96821  
Phone: 808-983-5722  
Fax: 808-983-2900

Form design: Denise Parker 1/00  
Photos: Ursula Keuper-Bennett, www.turtles.org



I recognized the tumors from a book I had read on the possible origin of the condition. I can't recall the name of the book, but I remember the female author/researcher mentioned that a vet had removed tumors from some of the turtles and this appeared to improve their chance of survival (+ certainly their subsequent quality of life as they would be better able to swim and feed).



**Subject:** information on turtles

**From:** <rhanna@ntbg.org>

**Date:** Sat, 2 Jun 2007 17:19:49 -1000

**To:** <wichman@ntbg.org>

Aloha Chipper,

Attached is a justification for protection and restoration of Lawai Beach for turtle nesting. Should I release it to the Tour Program and volunteers? What else should we be doing to highlight the return of the honu? Rick

**Subject:** turtle alert

**From:** <rhanna@ntbg.org>

**Date:** Fri, 1 Jun 2007 10:14:27 -1000

**To:** <wichman@ntbg.org>

Aloha Chipper,

A turtle came up last night between 12:30 and 3:30 and dug three nests. Two of the nests have eggs and one was aborted after she dug into some buried drift wood. I have marked the nests and will go down later with Dave Lorence and GPS the sites. Attached are some photos. Rick "Turtle Boy" Hanna

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

Date: Tue, 10 Jul 2007 22:22:06 -1000

From: Hau`oli Wichman <[hwichman@ntbg.org](mailto:hwichman@ntbg.org)>

To: 'George H. Balazs' <[gbalazs@honlab.nmfs.hawaii.edu](mailto:gbalazs@honlab.nmfs.hawaii.edu)>

Subject: Turtles at Lawai kai

Hi George,

I found some email messages (they are attached) relating to the sighting of the turtles at L?wa?i kai from Rick to Chipper that I hope you'd find interesting. The night of the full moon was May 31/June 1, which is the morning (2 am) the first turtle came ashore?not June 2 as mentioned in my previous email to you. Sorry.

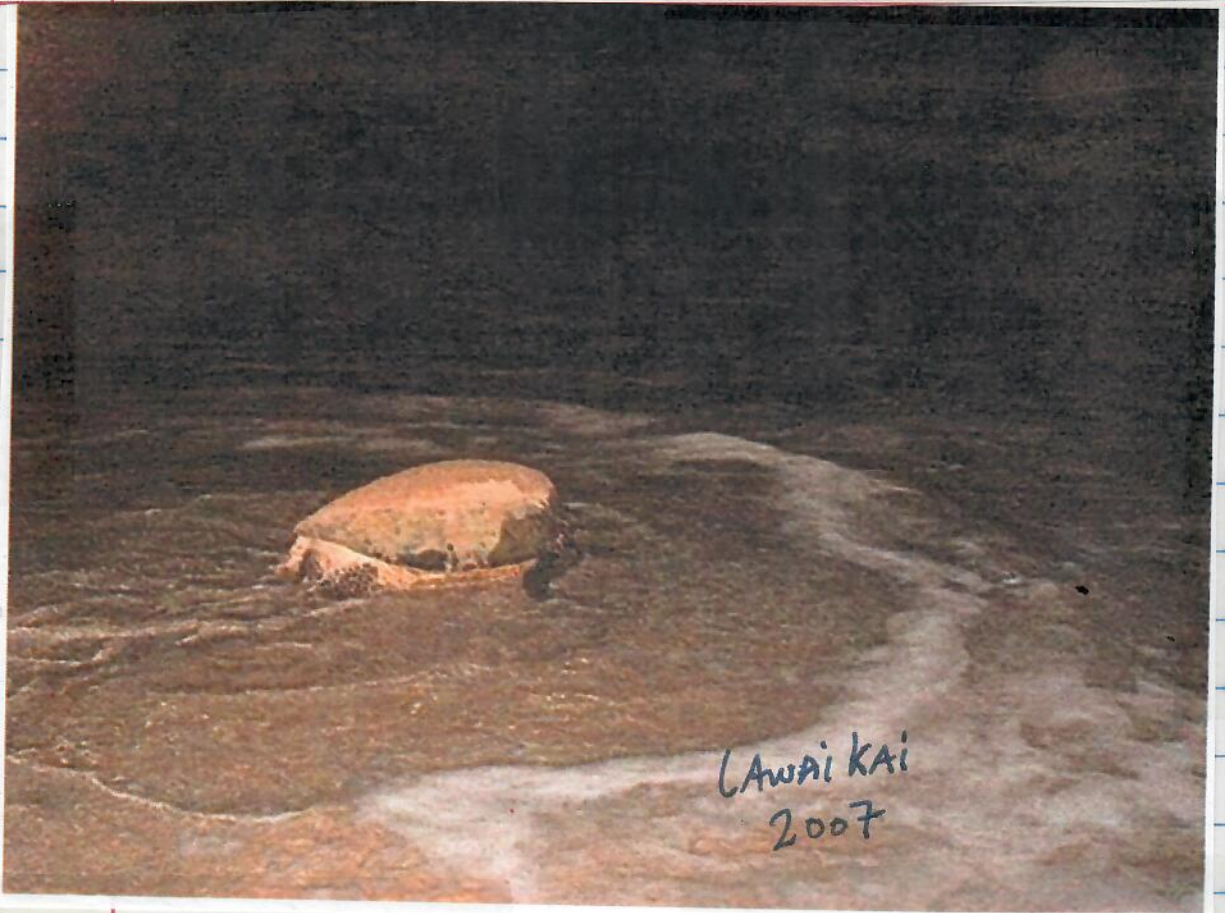
2nd email: ?turtle alert? has 3 digital pix attached--two of them you received in an earlier email from me. The other photo is of the mama turtle with sand on her back returning to the ocean. This one was not sent to you earlier.





LAWAI KAI  
2007





LAWAI KAI  
2007

Date:

Time:

Location:

Notes:

1. four

the 11

incubated

was the first turtle seen

at the beach

on June 2 as mentioned in my

earlier

email: ?turtle alert? has 3 digital pix attached--two of them you

with sand on her back returning to the ocean. This one was not sent to you

earlier

King of

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CAWAI KAI  
Summer 2007

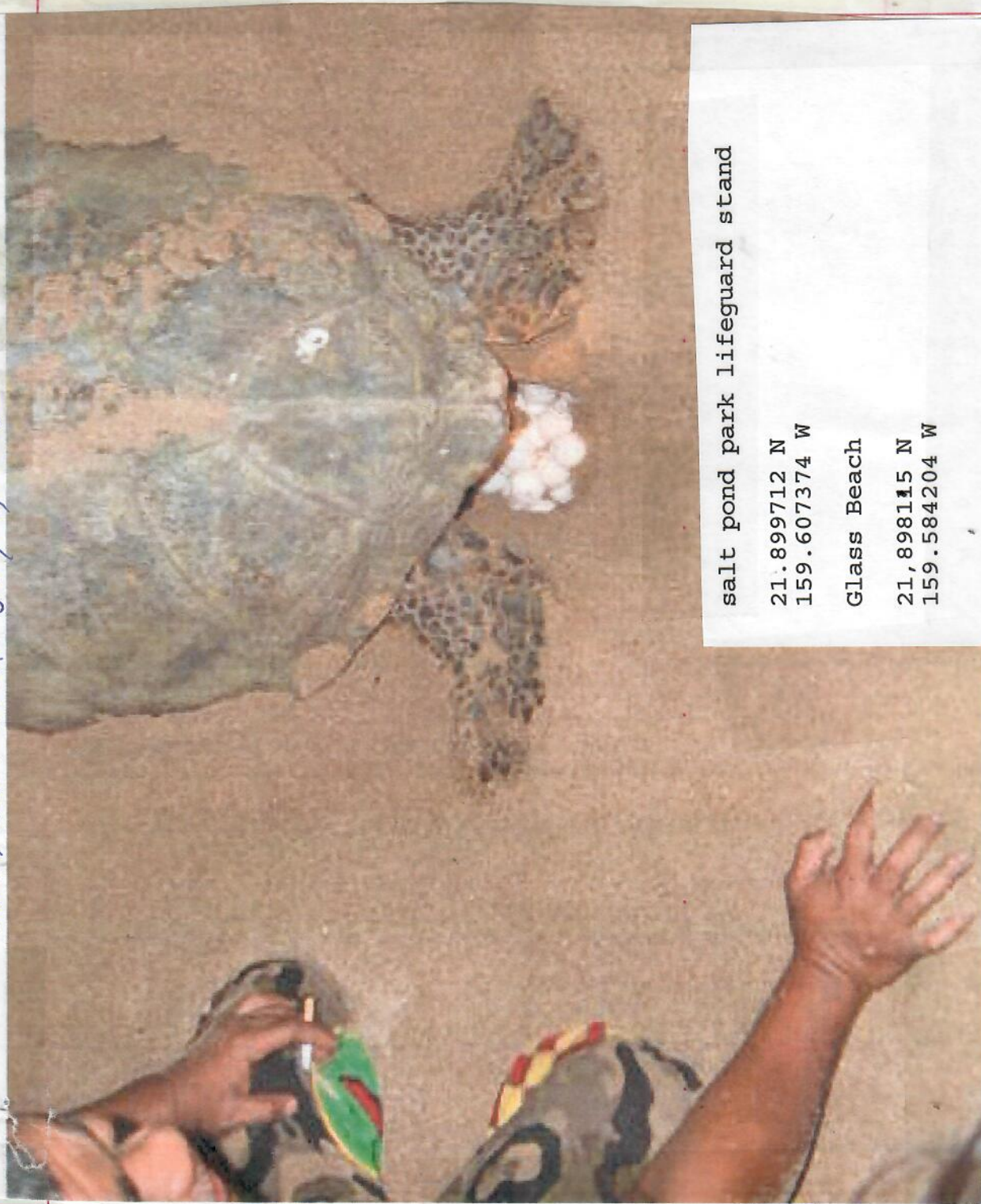




LAWAI  
KAI 2007



SALT POND BEACH July 4, 2007



salt pond park lifeguard stand

21.899712 N  
159.607374 W

Glass Beach

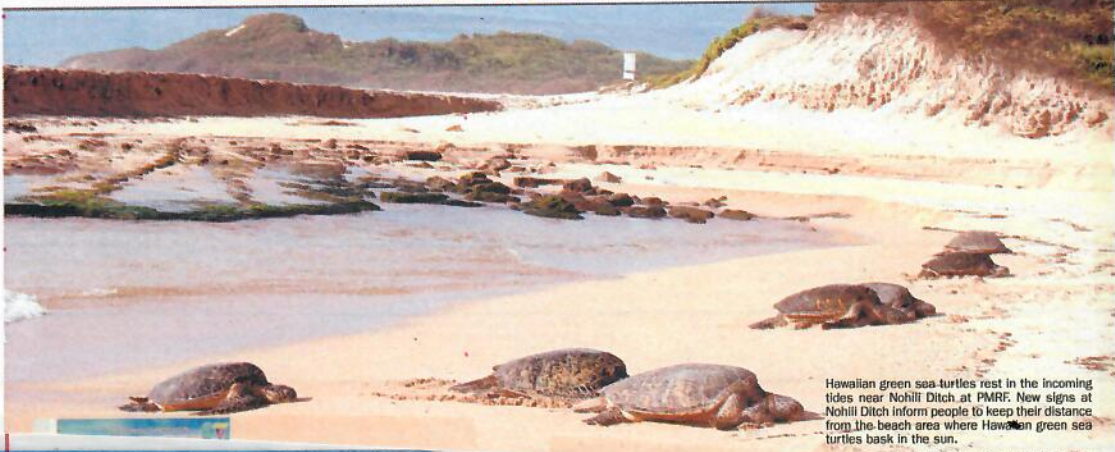
21.898115 N  
159.584204 W



Hawaii  
**NavyNews**  
July 14, 2006

# Life Leisure

**B**



Hawaiian green sea turtles rest in the incoming tides near Nohili Ditch at PMRF. New signs at Nohili Ditch inform people to keep their distance from the beach area where Hawaiian green sea turtles bask in the sun.

*Photo by John Berger, PMRF environmental coordinator*



# Protecting sea turtles

Terri Kojima

Navy Region Hawai'i Public Affairs

Pacific Missile Range Facility (PMRF) installed three new signs near Kauai's Nohili Ditch to increase awareness and protect an area where threatened green sea turtles are known to bask in the sun.

The signs, which warn people not to enter a limited area of the beach, are strategically posted on the north, south and front approaches to the turtles' habitat. PMRF and Navy Region Hawai'i environmental program leaders, who are constantly working to safeguard the environment, worked with Naval Facilities Engineering Command Pacific (NAVFAC PAC) to design and manufacture the signs.

"PMRF is the site of the world's largest instrumented, multi-environment range and concurrently, some areas of the base needs to be preserved to help protect endangered and threatened species and their habitat," said Capt. Mark Darrah, the installation's commanding officer. "We are serious about protecting our environment and sometimes it means we need to keep people out of certain areas," explained Darrah.

The signs, which include a graphic presentation of a noted instance of seven green sea turtles hauling up at the outfall of Nohili Ditch, were well received.

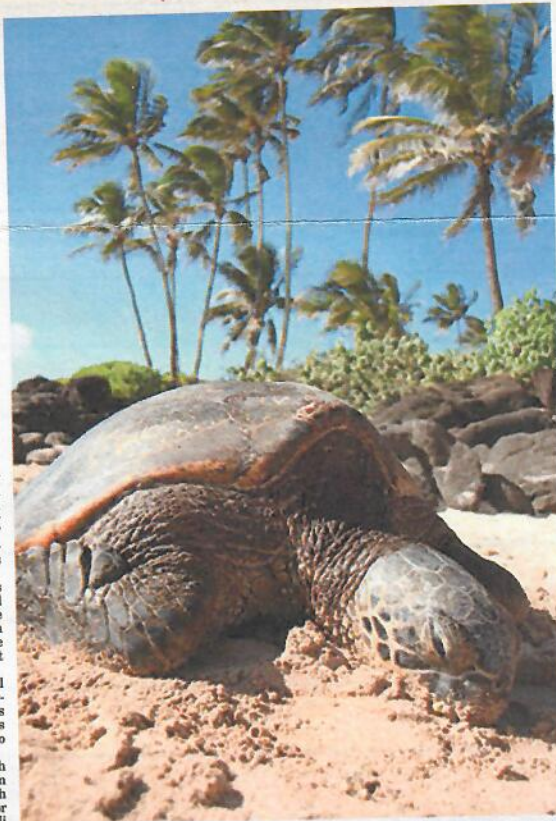
"The Navy is doing a great job of educating folks," said Dawn Greenlee, a biologist with the U.S. Fish and Wildlife Service, who had high praise for the new signs. "The Navy does good work - it's [sign] beautiful!" Greenlee expressed a desire for other beaches where sea turtles bask to follow the Navy's example at PMRF.

In Hawai'i, the green sea turtle is listed as a threatened species and protected by federal and state environmental laws. While there have been sightings of these quiet reptiles in various areas on the PMRF beach front, the turtles appear to have found a preferred spot on base.

"They (green sea turtles) frequently haul out at the Nohili Ditch outfall when it is flowing," said John Burger, who coordinates PMRF's environmental program. "The turtles feed on attached algae or seaweed adjacent to the outfall."

Vanessa Pepi, who conducted in-depth studies on the behavior patterns of the green sea turtle as a biologist with the U.S. Fish and Wildlife Service, describes some behavior patterns observed of the turtles at Nohili Ditch.

"Sometimes turtles crawl up and around the beach without digging, which is called a 'false crawl,'" said Pepi, who is a fish and wildlife biologist at NAVFAC PAC. "False



Hawaiian green sea turtles are a threatened species. It is illegal to disturb them. Photo courtesy of Ashika Hawaiian Images

crawl also include basking, a non-nesting behavior that is thought turtles may do to digest food quicker and/or to avoid predators.

Known locally in Hawai'i as "honu," green sea turtles get their name from the color of their body fat, which is green from the algae

or limu (seaweed) that they eat. They are cold-blooded reptiles whose ancestors evolved on land and entered the sea to live millions of years ago.

According to Pepi, the majority of honu forage around the main Hawaiian Islands and at least 90 percent migrate up to French Frigate Shoals, Hawaiian Islands National Wildlife Refuge to nest.

By limiting human access to and disturbance of some remote areas, the Navy in Hawai'i hopes to see threatened wildlife like the green sea turtle thrive. The signs at Nohili Ditch are communicating that message.

## Turtle tips

Terri Kojima

In most parts of the world, sea turtles are shy, elusive creatures. This can probably be partly attributed to a long history of humans hunting them. In Hawai'i, however, this has been changing for several years now and it's not uncommon for divers and snorkelers to encounter the threatened creatures in Hawaiian waters.

Today, green sea turtles venture onto various Oahu and outer island shores to bask as they become more and more accustomed to seeing humans who won't harm them. "Overall, the green turtle population in Hawai'i is recovering quite well," said Cody Hooven, a marine turtle specialist at National Oceanic and Atmospheric Administration's (NOAA) Pacific Islands Fisheries Science Center. "As people may have noticed it is pretty easy to go to the beach and see one," he added.

Islanders say the best place in the world to see marine turtles up close is at Laniakea Beach on Oahu's North Shore. Also known as "honu" in Hawai'i, the green sea turtles will allow people to swim and snorkel in the water with them. But it's important to remember that the turtles are a threatened species protected by state and federal law and it is illegal to disturb them.

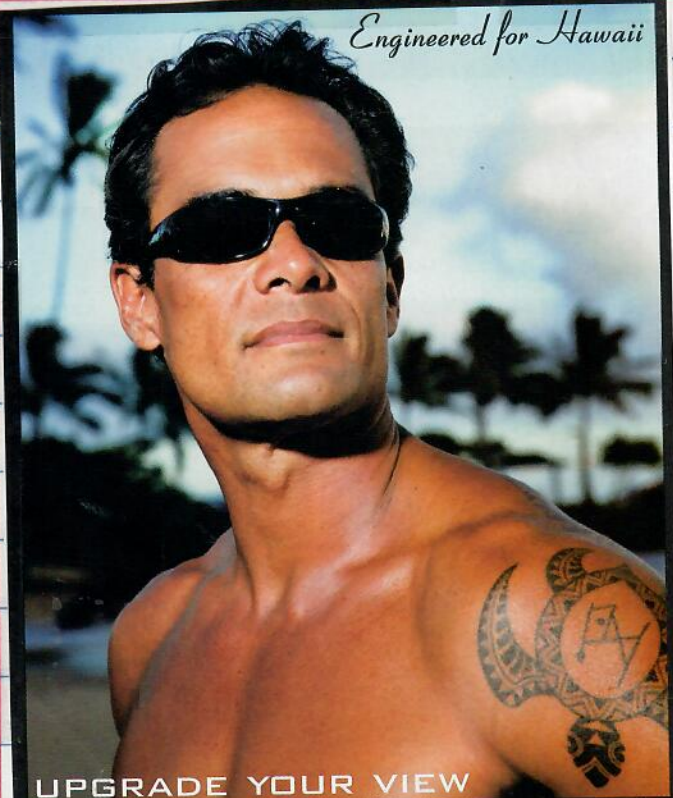
Although the honu are mostly timid, they have been known to snap or nip people who have ventured too close. Therefore, experts such as Hooven, who study and handle green sea turtles under NOAA's Marine Turtle Research Program in the Pacific, ask for everyone's cooperation in respecting the honu.

Hooven provided the following guidelines from NOAA to enjoy the magnificent creatures in a responsible way.

- Never feed or try to feed the honu - they may become aggressive and bite people in the water.
  - While snorkeling or swimming, try to give the honu 10 feet of space and do not block the path of a surfacing sea turtle.
  - Observe the honu from a distance - do not crowd, chase or tease them.
  - Do not handle or touch the honu.
  - Never ever ride on or sit on a honu.
  - Always keep your pet(s) on a leash and away from areas frequented by the honu.
  - Lend a hand with trash removal - trash on the beach becomes trash in the water and can be confused with food by some marine life.
- Individuals who are interested in helping out the "honu" may visit [www.turtles.org/laniakea.htm](http://www.turtles.org/laniakea.htm) for information on volunteering in the "Show Turtles Aloha" training.



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