

Volunteers turn out on Maui to aid baby turtles

By GARY T. KUBOTA
Maui correspondent

KEALIA, Maui — Meagan Jones stood on a sand dune with other volunteers watching nesting sites of endangered hawksbill turtles Sunday night, when she took a step and heard one of her friends say, "Ahh, Meagan."

"One of the turtles was below me. It was so cute," said Jones.

And there were many, an estimated 15 to 20 scurrying toward the volunteers' flashlights.

Volunteers who had been trained to help the turtles redirected the migration, casting light on the sand to lead the turtles into the ocean.

These turtles were fortunate. Wildlife officials say many are not.

Only about 30 female hawksbill turtles are known to nest in the Hawaiian Islands, the U.S. Fish and Wildlife Service said.

The turtles have been hunted to the brink of extinction because of their shiny hard shells, used for decorative objects such as combs.

At the 700-acre Kealia Pond National Wildlife Refuge, urban growth is threatening the survival of endangered species.

Because of human trash, the number of predators including mongoose, rats and wild cats are increasing and pose a threat to endangered species, officials say.

North Kihei Road, the main link between south Maui and Lahaina, cuts through the refuge. Lights of



By GARY KUBOTA, Star-Bulletin

Bettina Jones stands near a warning sign in the Kealia dunes area.

motor vehicles attract turtles.

A female Hawksbill turtle was killed on Aug. 19 when a vehicle apparently struck it.

Off-road vehicles degrade the sand dunes and crush the turtle eggs buried beneath the sand.

"We can't emphasize enough the importance of keeping vehicles off the beach right now," said Katherine C.E. Smith, manager of the Kealia refuge. "Obviously, hatchlings are pretty difficult to see as they scurry toward the ocean, so it would be very easy to unintentionally drive over them."

Since the female turtle's death, more than 30 volunteers from wildlife groups have begun a hawksbill turtle watch along the Kealia shoreline.

They have identified four places where the turtle eggs may hatch and are monitoring them to ensure

the baby turtles find the sea. About 100 eggs recovered from the dead turtle are buried at one of the sites.

Government officials are considering ways to improve the environment at the refuge. A citizens advisory committee in south Maui has recommended building a bypass road around the refuge and terminating North Kihei Road.

For some volunteers, the vigil will continue through year's end since Hawksbill turtles nest July through October, with eggs hatching through December.

Volunteers Howard Reiken and wife Donna, New Jersey visitors scheduled to leave Maui last night, delighted at the timing of the latest hatchlings.

"It's perfect," said Donna Olah-Reiken. "It could not have been greater."

maui file

[46] From: Shawn Murakawa 9/18/96 1:20PM (1575 bytes: 24 ln)
To: George Balazs
Subject: telephone msg.

----- Forwarded with Changes -----
From: George Balazs 9/18/96 9:02AM (530 bytes: 7 ln)
To: Shawn Murakawa
Subject: telephone msg.

----- Forwarded with Changes -----
From: Gloria Wong 9/18/96 8:38AM (201 bytes: 2 ln)
To: George Balazs
Subject: telephone msg.

----- Message Contents -----

I finally got through to her....

- 1) The nest that starting hatching out...
 - a) 20 were found on Monday
 - b) 9 were found during the early hours of Tuesday morning
 - c) 0 were found today
 This occurred during a 24-hour coverage starting on Friday, 9/13.
- 2) Lots of public interest being shown. She said that she would like to take down the barrier/fencing by Friday evening. How do you feel about a Thureday night excavation?
- 3) The data logger was buried at 7:30am today by the nest that was laid on 8-31-96.
- 4) She's sending you a fax.
Could you please call her back.

Please call her and she what's-up. Mention to her about my being tied up for several hours with our Annual Program Review. Geo. Answer any questions you can.

please call kathy smith on maui
ph: 875-1582



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Fisheries Center Honolulu Laboratory
2570 Dole St. • Honolulu, Hawaii 96822-2396

Commercial: (808) 943-1221
Telefax: (808) 943-1290

TELEFAX FOR:

KATHY SMITH

DATE:

9/18/96

FROM:

George Balazs

TELEPHONE EXT: _____

NUMBER OF SHEETS TRANSMITTED (including this page)

ONE

MESSAGE:

Dear Kathy -

Sorry for not getting directly back to you. We're really tied up here with annual program review. I'm delighted the boxes arrived.

Based on what you've said, a Thursday night operation sounds appropriate to me. Please freeze (for DNA) all dead hatchlings, & dead partially developed eggs.

Best regards, George





**Kealia Pond
National Wildlife Refuge**



U.S. Fish and Wildlife Service
P.O. Box 1042
Kihel, Maui, HI 96753
Tel: (808) 875-1582
Fax: (808) 875-2945

FAX TRANSMISSION COVER SHEET

Fax #:

Date:

9/18/96

TO:

George Balazs

Pages:

2

From: Kathy Smith, Refuge Manager

Re:

"Due Dates" for Maui Nests

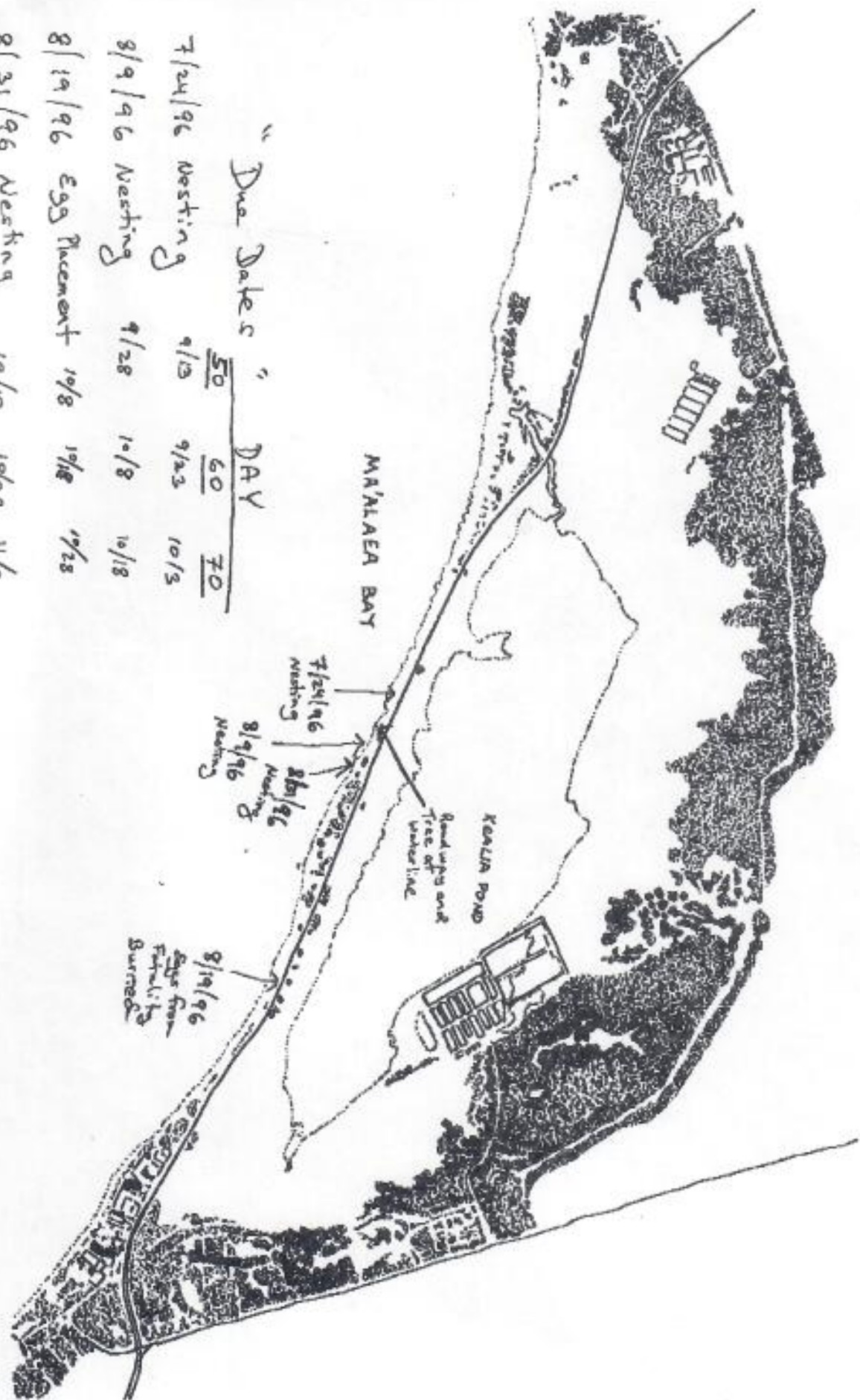
I can't recall if I sent you this.
Also note that on Sept 25
the Na Le: Ula oka oina (Hawaiian
Immersion Program) will be performing
a chant + hula for perpetuation
of the Honu'ea on the
at Kealia.

Hawksbill Sea Turtle 196 Nesting Sites
and Due Dates based on 50 to 70
day incubation period.

X. Smith

"Due Dates" DAY

	50	60	70
7/24/96 Nesting	9/13	9/23	10/3
8/9/96 Nesting	9/28	10/8	10/18
8/19/96 Egg Placement	10/8	10/18	10/28
8/31/96 Nesting	10/19	10/29	11/8





United States Department of the Interior

FISH AND WILDLIFE SERVICE

Pacific Islands Ecoregion

300 Ala Moana Blvd., Room 3108

P.O. Box 50088

Honolulu, Hawaii 96850

Telephone: (808) 541-3441, Fax: (808) 541-3470

FAX TRANSMISSION

November 7, 1996

2 pages

To: Hawksbill Sea Turtle Meeting Attendees (see attached)

From: Craig Rowland, Fish and Wildlife Biologist

Subject: November 12, 1996, Meeting Agenda

Below is an agenda for our upcoming meeting. If there are other items you would like to have discussed, please let me know, so that I can add them to the agenda. If you have not contacted me yet, please do so, to let me know if you will be able to attend.

MEETING AGENDA - Kealia Sea Turtle End of Season Meeting

November 12, 1996, 9am - 12noon

HGEA Conference Room - David Trask Building

2145 Kaolu Street, Room 207

Wailuku, Maui - Ph: 244-5508

- | | |
|----------|---|
| 9:00 am | Review of Beach Restoration Project
Project Proposal
Status of Implementation
Implementation Needs
Future Plans |
| 10:30 am | Break |
| 10:45 am | Discussion of Turtle Monitoring Program
Review of 1996 Season
Possibilities for 1997 Season |
| 12 noon | Pau |

Directions to the meeting place: Going West on Ka'ahumanu Avenue, take a left on Honoapi'ilani Highway at Ka'ahumanu Church, then the second left onto Koahu Street. The David Trask Building is the first one on the right. It's a white, two-story building.

*CRAIG -
MINUTES*

Kealia Sea Turtle Protection Meeting Attendees

George Balazs Deputy Chair, IUCN Marine Turtle Specialist Group, c/o 2570 Dole St., Honolulu, HI 96822-2396, ph.: (808) 943-1240, fax: (808) 943-1290

Hannah Bernard Hawaii Wildlife Fund, P.O. Box 5361, Lahaina, HI 96761
ph.: (808) 667-0437, fax: (808) 661-9126

Bill Gilmartin Hawaii Wildlife Fund 55-472 A Palekana St., Laie, HI, 96762
ph. and fax: (808) 293-9558

Skippy Hau Aquatic Biologist, Department of Land and Natural Resources, Division of Aquatic Resources, 130 Mahalani Street, Wailuku, HI 96793,
ph.: (808) 243-5294, fax: (808) 243-5326

Jimmy Gaperou Maui Police Department, 55 Mahalani St., Wailuku, HI 96793
ph.: (808) 244-6340, fax: (808) 244-6411

Charles Jencks Director, Dept. of Public Works, County of Maui, 200 S. High Street, Wailuku, HI 96793, ph.: (808) 243-7845, fax: (808) 243-7955

Larry Katahira Hawaii Volcanoes National Park, P.O. Box 44, Hawaii Volcanoes, Hawaii 96718, ph.: (808) 967-8226, fax: (809) 985-8614

Keith Kesu Division of Conservation and Resource Enforcement
ph.: (808) 984-8110, fax: (808) 984-8111

Charles Maxwell Hawaiian Cultural Specialist, ph.: (808) 572-8038, fax: (808) 572-0602

Gene Nitta Endangered Species Coordinator, National Marine Fisheries Service, 2570 Dole St., Honolulu, HI 96822
ph.: (808) 973-2987, fax: (808) 973-2941

Craig Rowland Biologist, U.S. Fish and Wildlife Service, Ecological Services, Pacific Islands Office, P.O. Box 50088, Honolulu, HI 96850
ph.: (808) 541-3441, fax: (808) 541-3470

Robert Siarot, P.E. Maui District Engineer, Highways Division, Department of Transportation, State of Hawaii, 650 Palapala Drive, Kahului, HI 96732 ph.: (808) 877-5061, fax: (808) 877-7072

Kathy Smith Refuge Manager, Kealia Pond National Wildlife Refuge, P.O. Box 1042, Kahei, HI 96753, ph.: (808) 875-1582, fax: (808) 875-2945

Brooks Tamaye Information Specialist, Department of Land and Natural Resources, Division of Aquatic Resources, 130 Mahalani Street, Wailuku, HI 96793,
ph.: (808) 243-5294, fax: (808) 243-5326

Mercer "Chubby" Vincens Vice President, A&B Properties, Inc., 33 Lono Ave., P.O. Box 156, Kahului, HI 96732, ph.: (808) 877-5523, fax: (808) 871-7497

Louis Wada Land Management Agent, Department of Land and Natural Resources
ph.: (808) 984-8101, fax: (808) 984-8111

Dr. Thierry Work Honolulu Field Station, National Wildlife Health Research Center National Biological Survey, 300 Ala Moana Blvd., Suite 3317A, Honolulu, HI 96850,
ph.: (808) 541-3445, fax: (808) 541-3472

MAUI JAYCEES 8982421719 P.81

THE MAUI JAYCEES

PRESENTS

TURTLE DAY '95

WHEN : DECEMBER 9-17, 1995
OR UNTIL FINISHED.

TIME : 9:00 AM TO 4:30 PM

WHERE : KEALIA POND KIHEI MAUI

WHY : TO HELP SAVE THE SEA TURTLES
AS OF APRIL 24, 1995 THE US
CONGRESS ADOPTED 1995 THE YEAR
OF THE SEA TURTLE.

WE WILL BE INSTALLING RECYCLED
PLASTIC GUARD RAILS TO HELP THE
US FISH AND WILDLIFE REFUGE TO
RECOVER FROM THE DECADES OF OFF
ROAD VEHICLE DAMAGE.

REFRESHMENTS : WILL BE PROVIDED

FUND RAISING : THERE WILL BE TEE SHIRTS
AVAILABLE FOR PURCHASE AT
20.00 EACH THE MONEY WILL
GO INTO A FUND TO HELP WITH
THE UP KEEP OF THE KEALIA
POND.

POINT OF CONTACT : WILLIAM BASEY
THE MAUI JAYCEES
808 244-1605 OFFICE

[48] From: Shawn Murakawa 10/22/96 8:16AM (1304 bytes: 1 ln)
To: George Balazs
cc: Denise Ellis
Subject: Maui eggs

Maui
File

----- Message Contents -----

Skippy will be shipping the eggs to us sometime today. He will call and let us know the details once he drops it off at the airport.

Here's the rundown....

1) The eggs that were retrieved from the run-over hawksbill....134 eggs appeared undeveloped. The nest was excavated on Saturday, 10/19. Out of the 134, 2 appeared to be broken from a vehicle that had run over the nest.

Need DNA sample

2) The second nest was excavated yesterday ^{10/21/96} around 5:30pm. There were 32 partially developed eggs (not fully developed, but shell appears cracked, hatchlings look undersized), 3 dead hatchlings, 145 undeveloped eggs, 14 empty shells and 3 live hatchlings released.

Skippy and Brooks also checked out two other possible sites, but they only saw tracks and no false nests. Skippy will be sending a majority of the eggs, but Kathy Smith and DLNR will be keeping a couple of the eggs for educational purposes.



BY LOIS BISQUERA, Special to the Star-Bulletin
Wildlife refuge manager Kathy Smith
beside a turtle-crossing sign.

Off-roaders endangering hawksbills

Beach erosion can push the
turtles to head for the road

BY LOIS BISQUERA
Special to the Star-Bulletin

KIHEI, Maui — Why did the turtle cross the road?

Because the beach keeps getting closer, said Kathy Smith, manager of the Kealia Pond National Wildlife Refuge.

Officials recently posted four signs to warn motorists of the potential turtle traffic on North Kihei Road bordering the refuge.

In the past, critically endangered hawksbill turtles have come ashore to nest and wandered onto the road.

Last year, a large female that made it across was quickly escorted back to the beach by wildlife officials. But two years ago, another female was killed as it tried to cross the busy road.

The "Turtle King" signs are so novel, however, that someone has already ripped one off.

"Some people are so inconsiderate," Smith said, shaking her head.

She said many people aren't aware there's an endangered species in the

The "Turtle King" signs are so novel, however, that someone has already ripped one off.

area, especially fishermen and campers who park and drive on the beach. "The off-road vehicles contribute to the severe sand dune erosion, which means egg-bearing females sometimes pass the scoured-away beach

and continue toward the road, looking for a good nesting site," she said.

Although state law allows driving on the beach, Smith is asking drivers to park along the road and walk to the beach.

Normally, the turtles crawl above the high tide line and lay their eggs in a nest burrowed less than 30 inches deep. When vehicles drive over the nest, the eggs are crushed. Because there are only about two dozen female hawksbills in Hawaii, the July-November nesting season is especially crucial.

To further protect the refuge area, a road barrier made of recycled plastic will be installed later this fall. The barrier will prevent off-roaders from taking a shortcut across the wetlands, which become a tempting 4-wheel-drive course during the dry season.

"Even when that side of the pond is dry, it's home to stilts that nest right on the ground — their sand-colored eggs are so perfectly camouflaged, you can't see them until you're right on top of them," Smith said.

The wetlands are key nesting grounds of the Hawaiian Stilt, which is on the endangered species list.

Smith said birds come from polar regions all over the world to spend the winter, including 30 species of shorebirds and waterbirds such as ruddy turnstones, wandering tattlers, golden plovers and migratory ducks.

An environmental assessment is being conducted for a 4,400-foot raised boardwalk project, which would include beach access, a paved parking lot and conservation measures. An interpretive kiosk would allow visitors to see how the wetlands' ecosystems work, and on the fish farm end of the refuge, keiki fishing and outdoor education programs would be offered.

Smith said county, state and federal funds are making the project possible. Construction begins early next year, with completion scheduled at the end of summer.



COPY

DIVISION OF AQUATIC RESOURCES - MAUI
DEPARTMENT OF LAND & NATURAL RESOURCES
130 Mahalani Street
Wailuku, Hawaii 96793
Phone # (808) 243-5327
FAX #(808)243-5326
October 19, 1996

To: Bill Devick, Acting Administrator
From: *Sh*
Skippy Hau, Aquatic Biologist
Subject: Recovery of Planted Hawksbill Eggs
From 19 August 1996 Turtle Accident

This morning, Mrs. Gloria Adlawan a volunteer from Kihei helped me look for and recover the eggs planted after the turtle accident. On Wednesday night, October 16th, Brooks Tamaya and I tried to find the eggs. I could not find the location that night.

Kathy Smith marked the location with some coral and took note of the location after I showed her the location after the accident. From the directions she gave to Gloria, we found the eggs (61 days later).

We counted a total of 134 eggs. None of the eggs appears to have developed as we had hoped. Two eggs were found broken. They could have been broken when a vehicle drove over the nest. Tire tracks were seen and photographed a couple weeks ago.

The eggs were placed in a plastic bag and stored in the freezer. A total of eleven eggs will be used for educational purposes. Five of the eggs were given to Fish and Wildlife Service (Larry).

A total of 123 eggs will be sent to NMFS Honolulu Laboratory for further analyses.

c: George Balazs, NMFS
Kathy Smith, USFWS
DOCARE - Maui

need for DNA

WAG
COPY

DIVISION OF AQUATIC RESOURCES - MAUI
DEPARTMENT OF LAND & NATURAL RESOURCES

130 Mahalani Street
Wailuku, Hawaii 96793
Phone # (808) 243-5327
FAX #(808)243-5326

October 22, 1996
TUESDAY

To: Bill Devick, Acting Administrator
From: *Sh* Skippy Hau, Aquatic Biologist
Subject: Hawksbill Nest Excavation

Yesterday, around 17:35, Brooks Tamaye and I excavated a hawksbill turtle nest after a total of six hatchlings were observed by volunteers. Five hatchlings were observed on Saturday (day 50) and one hatchling was seen on Sunday (day 51).

I called Larry Katahira with Hawaii National Park's hawksbill turtle project. He said they try to excavate two days after the major emergence. He felt that late developers and isolated hatchlings would have less of a chance to emerge from the nest on their own.

no
2 days
after
best
emergence

This particular nest was located on the top of a dune next to North Kihei Road. The dune is covered with grass and other vegetation. The nest was located next to a kiawe tree. The nest appeared to have been buried shallow, about 10 centimeters below the surface. The female dug down into the soft part of the dune to bury her eggs. The last live hatchling was recovered about 25 centimeters deep. The bottom of the nest was about 35 centimeters deep.

The following items were recovered from the nest:

- 4 Live Hatchlings (released)
- 3 Dead Hatchlings
- 32 Partial Developed/Dead Hatchlings in Eggs
- 145 Unbroken/Undeveloped Eggs
- 14 Empty Shells

The total number of eggs in the nest appears to be 191. The eleven hatchlings represents a 6% hatch rate. The recovered items were placed in plastic bags and stored in the freezer. Two hatchlings and two undeveloped eggs were kept for educational purposes. The remains of the nest were shipped to NMFS Honolulu Laboratory.

c: George Balazs, NMFS
Kathy Smith, USFWS
DOCARE - Maui

[47] From: Shawn Murakawa 10/28/96 2:38PM (1197 bytes: 1 ln)

To: George Balazs

Subject: Phone call from Skippy

----- Message Contents -----

He called to let you know that another meeting is being set-up for a follow-up of the Kealia situation. It's tentatively set for Nov. 12 with the same group of people and Nov. 13 with the volunteers starting at 6:00pm, 7:00 slide show, and ending at 8:00pm. They also want to discuss the putting up of fencing between now and the next season. Also, he talked with Kathy Smith and they decided that they would like to ease out of the volunteer monitoring. He said that it's gotten out of hand and that they would like to only do dawn patrols for tracks. His second question is did you get any genetic material from the hatchling and eggs that he's sent to you yet? I told him that you were out in the field today and tomorrow and that the earliest would be Wednesday that you could get back with him. He said that he might try calling you then.



United States Department of the Interior

FISH AND WILDLIFE SERVICE
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300 Ala Mouna Blvd., Room 3108
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Honolulu, Hawaii 96850
Telephone: (808) 541-3441, Fax: (808) 541-3470

FAX TRANSMISSION

October 29, 1996

5 pages

To: Hawksbill Sea Turtle Meeting Attendees (see attached)
From: Craig Rowland, Fish and Wildlife Biologist
Subject: End of Season Meeting and Beach Protection Plan

1.5 hour
We would like to hold a meeting to review the 1996 hawksbill sea turtle nesting season and make plans for next year's season. We are planning the meeting for November 12, 1996, from 9:00 to 10:30 am (location to be determined). Please let me know if you will be able to attend.

The attached is a proposal for beach restoration at Kalia. The Fish and Wildlife Service was able to obtain funds for the purchase of all the fencing materials (which should arrive on Maui next week). One of the things we would like to do at the November meeting is to determine how each party can contribute to the implementation of a beach restoration effort.

I will send out an agenda to confirm the place and time of the meeting.

If you have any questions, please feel free to contact me at the above numbers or via email at craig_rowland@mail.fws.gov.

attachments

A handwritten signature in cursive script, appearing to read "Craig", with a long horizontal flourish extending to the right.

Kaula Sea Turtle Protection Meeting Attendees

George Balazs Deputy Chair, IUCN Marine Turtle Specialist Group, c/o 2570 Dole St., Honolulu, HI 96822-2396, ph.: (808) 943-1240, fax: (808) 943-1290

Hannah Bernard Hawaii Wildlife Fund, P.O. Box 5361, Lahaina, HI 96761
ph.: (808) 667-0437, fax: (808) fax 661-9126

Bill Gilmartin Hawaii Wildlife Fund 55-472 A Palekana St., Laie, HI, 96762
ph. and fax: (808) 293-9558

Skippy Hau Aquatic Biologist, Department of Land and Natural Resources, Division of Aquatic Resources, 130 Mahalani Street, Wailuku, HI 96793,
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Jimmy Gagero Maui Police Department, 55 Mahalani St., Wailuku, HI 96793
ph.: (808) 244-6340, fax: (808) 244-6411

Charles Jencks Director, Dept. of Public Works, County of Maui, 200 S. High Street, Wailuku, HI 96793, ph.: (808) 243-7845, fax: (808) 243-7955

Keith Keau Division of Conservation and Resource Enforcement
ph.: (808) 984-8110, fax: (808) 984-8111

Charles Maxwell Hawaiian Cultural Specialist, ph.: (808) 572-8038, fax: (808) 572-0602

Gene Nitta Endangered Species Coordinator, National Marine Fisheries Service, 2570 Dole St., Honolulu, HI 96822
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Phil Ohta Land Management Agent, Department of Land and Natural Resources
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Craig Rowland Biologist, U.S. Fish and Wildlife Service, Ecological Services, Pacific Islands Office, P.O. Box 50088, Honolulu, HI 96850
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Kathy Smith Refuge Manager, Kaula Pond National Wildlife Refuge, P.O. Box 1042, Kihui, HI 96753, ph.: (808) 875-1582, fax: (808) 875-2945

Brooks Tamaye Information Specialist, Department of Land and Natural Resources, Division of Aquatic Resources, 130 Mahalani Street, Wailuku, HI 96793,
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Dr. Thierry Work Honolulu Field Station, National Wildlife Health Research Center National Biological Survey, 300 Ala Moana Blvd., Suite 3317A, Honolulu, HI 96850, ph.: (808) 541-3445, fax: (808) 541-3472

Immediate Action Fencing Plan for Kealia Beach, Maui

The problem:

Degraded sand dunes at Kealia Beach lead to Hawaiian hawksbill sea turtles (*Honu'ea* or *Fretmochelys imbricata*) moving onto North Kihei Road, where two nesting females were killed within the last three years. Off-road vehicles driving on Kealia Beach could cause injury to sea turtle nests. Additionally, off-road vehicles cause direct damage to coastal dunes and damage vegetation, leading to increased dune erosion. This increased rate of erosion leads to damage of the roadway and degradation of nearshore water quality and marine life.

The solution:

A wooden drift fence running the length of the degraded area would serve multiple purposes in the effort to restore the ecosystem of this shoreline and provide protection to the sea turtles. First, it would prevent nesting female sea turtles and emerging hatchlings from accidentally reaching the road. A barrier of this type would provide the turtles with much greater protection than that currently provided by volunteer beach patrols.

Secondly, the fence would be a deterrent to off-road vehicle access. There may be some damage done to the erosion control fence by disgruntled off-roaders. However, the public is behind this project, and conscientious beach goers will understand the damage caused by driving on the beach and will accept the effort required to park near the road and walk to their destination. Without damage by off-road vehicles, vegetation will spread into barren areas and stabilize the sand. The vegetation will allow the dunes to grow in size through natural accumulation of sand. The growing dunes and vegetation will serve as natural barriers and light shields between the nesting beach and North Kihei

Road. The restoration of this shoreline ecosystem would benefit native plants, nesting sea turtles, shorebirds, near shore marine life and water quality.

Lastly, the fence will act as a sand stabilization mechanism which will allow sand to accumulate, increasing dune height. Restored dunes will provide better sea turtle nesting habitat, making it more likely that the turtles will nest away from the road. Restored dunes will serve as a light shield to keep hatchlings from being distracted by the headlights of vehicles on North Kihei Road.

The Proposal:

To effectively address the concerns of shoreline ecosystem restoration in general, and sea turtle protection in particular, wooden drift fence and off-road vehicle barriers will have to extend along approximately 1.3 miles of coastline.

Fence: A total of 166 rolls of fence (50 feet by 4 feet) will be required. This length will cover the 1.3 miles plus 20% for hills and bends. Additionally, 1035 fence posts (at 8 foot spacing) will be needed. Materials for this fence total \$ 18,530. Labor can be expected to be almost as much, bringing the total material and labor cost for the fence to approximately \$ 37,000.

Off-road Vehicle Barriers: access routes will need to be blocked off. These dozen or more roadways can be blocked off at minimal cost using boulders.

The placement of the fence must provide for pedestrian access to the beach. This can be accomplished through the allowance of gaps that are not wide enough for vehicular access, and not easily maneuvered by sea turtles.

In conjunction with the building of the fence, informational signs should be deployed to convey the following messages: "This area is used by nesting sea turtles and native plants," "Please protect the sea turtle and help prevent erosion of this beach by keeping your vehicle off the dunes and beach," and "Driving on the beach is against the law." Additionally, an educational sign at one of the wider turn-outs could be erected to explain the idea of shoreline restoration.

Hawaiian hawksbill sea turtles come ashore to nest between the months of May and October, with hatchlings emerging through December. While dune restoration will be a gradual process, the protection provided by this fence to nesting sea turtles and hatchlings will be immediate. This project should proceed as rapidly as possible in order to provide much needed protection.

The Funding:

The US Fish and Wildlife Service is able to provide \$18,500 to cover the cost of fencing materials.

STATE OF HAWAII
Department of Land and Natural Resources
Division of Aquatic Resources - Maui
130 Mahalani St.
Wailuku, Hawaii 96793
(808) 243-5294

October 7, 1996

Memorandum

To: William Devick, Acting Administrator
From: Brooks Tamaye, Information Specialist *BT*
Through: Randy Honebrink, Education Coordinator
Subject: Hawksbill Turtle Hatchlings on N. Kihei Rd. 10/5/96

On 10/5/96, at approximately 9:15 p.m., I was notified of dead turtle hatchlings on N. Kihei Rd. and a possible nest on the mauka side of the roadway. The report was relayed from M.P.D. through DOCARE Officer Okamoto. A phone number was given; the person there said he was a friend of Hannah Bernard (Hawaii Wildlife Fund) and that she had left for the site about 30 minutes prior.

Skippy Hau also responded based on messages left by various people on his answering machine. We both arrived at the site at about 10:00 p.m.. The site is located near the 3 mile marker sign about 200 yds. west of the condos at Sugar Beach.

Observed upon arrival were about 6 volunteers on the mauka side of the road. Containers illuminated with flashlights were set up to trap hatchlings at two adjacent spots where the volunteers suspected there were nests. One volunteer was gathering dead hatchlings.

Hannah Bernard had already left to contact more volunteers and Eric Brown of the Pacific Whale Foundation seemed to be the volunteer coordinating this effort. He related that about 15 hatchlings were observed smashed on the road at about 7:00 a.m.. When questioned why we weren't contacted sooner, he said he only had Skippy's old number. He was informed that both Skippy and I are listed in the phone book. He also said he tried to contact Kathy Smith but that she was on vacation.

It was recommended that the lights be shut-off, dead hatchlings be left in place, and that volunteers relocate to the makai side of the road further away from the traffic. The 4 dead hatchlings (3-smashed, 1- intact) picked up by the volunteer were recovered.

An inspection of the mauka and makai side of the road and beach could not confirm where the hatchlings had emerged from. No other hatchlings were observed during the time we were there. We left at approximately 11:45 p.m.. The volunteers were planning to stay till 2:00 a.m..

On 10/6/96, at 7:00 a.m., Skippy and I conducted another inspection of the area. One volunteer who had come on at 12:30 a.m. was there, but departed shortly after. Dead hatchlings were counted and mapped to try and determine the vicinity of the nest. A total of 9 smashed hatchlings were recovered from the road. Whereas the volunteers indicated that the hatchlings were observed

Hatchlings
10/8/96

smashed in the middle of the road on Saturday, the hatchlings we recovered were found on the paved shoulder of the road. This was probably due to the dried carcasses being moved about by passing vehicles.

Another 7 intact hatchlings were found on the mauka side of the road in the dirt and gravel. Some were right up into the pickleweeds along the road. These hatchlings probably died from exposure to the sun as no other injuries were observed.

I also found one live hatchling on the makai side of the road under some brush and trees. After observing it in a bucket with seawater for awhile this hatchling was released.

To try and determine the exact location of the nest, Skippy and I returned to monitor the area that evening between 7:00 p.m. and 10:30 p.m. No hatchlings were observed and we did not encounter any volunteers.

A total of 21 hawksbill hatchlings were found (12-smashed, 8-intact but dead, 1-live). The dead specimens were frozen and Skippy shipped them to NMFS on 10/7/96 along with a tumored green turtle recovered on Saturday.

Although there may be a remote possibility that the hatchlings came from a nest on the mauka side of the road, it seems more likely that the hatchlings came from a nest on the makai side. After emerging these hatchlings may have been disoriented by lights and instead of heading down the beach to the water, went in the opposite direction. This area is frequented by many people and there are a number of eroded places in the sand dunes that the turtles could have come through. Since no hatchlings have been observed since, it seems likely that the main emergence occurred on or about 10/4/96.

c: DOCARE, Maui
G. Nitta, NMFS
G. Balazs, NMFS
K. Smith, USFWS

Kealia Pond

Turtle
X King
X King
X King

45
MON

Not site surveyed
by Blumens

Published
birds
X X X X X

Road shoulder

Maalea
←

N. Kihei Rd.

Kihei
→

Road shoulder

30 ft
C.D.H.

X
30 ft
Base

30 ft
Low
cut

Misc
S

Adopt
Hydrology

30
MON

Fence

X-line

Beach

Map of locations where Hatching Eggs collected

X = Hatching and Incubation

Cover

HATCHLINGS

Shawn

Saturday, 10/5, 10:00pm

Found 4 dead flattened hatchlings on road, apparently run over by vehicles, by volunteers. Skippy told them to leave it as is.

Sunday, 10/6

Skippy/Ronoks went down to see if they could find the nest. They found 12 squashed hatchlings and 8 dried out hatchlings. They also found 1 live hatchling which they released. Skippy will be sending these 20 dead hatchlings to us.

Which freezer in A2?

Monday, 10/7

Skippy placing the dead hatchling in a box in the wooden box with the live hibernated turtle.

He said this was an unexpected nest.

He also said that the 2nd nest will make 50 days on 10/8 and that it may hatch, but he did not fire marks on nest.

He also mentioned that the volunteer group has set up a plastic box with a light in it to attract the hatchlings.

- Skippy says they're not authorized to do this or handle the hatchlings. He said they're only suppose to be monitoring.

He wants to know how you feel about this.

- Skippy said that Ronox is talking to Gene about this.

regular squashed hatchlings

Difficult thing for GIB to appraise

because Craig Rowland setup

Encouragement concerns to 1st: Craig Rowland

2nd: Kathy Smith

and Gene - June Baker photo

Called Skippy 10/8/8:16 re: call Craig Rowland &

Kathy Smith +

Gene with

He said he'll be calling Craig and hopefully having everyone sitting down to talk

DIAGNOSTIC CASE REPORT

NATIONAL BIOLOGICAL SERVICE
NATIONAL WILDLIFE HEALTH CENTER-HONOLULU FIELD STATION
P. O. BOX 50167, 300 ALA MOANA BLVD., Rm. 5302
HONOLULU, HAWAII 96850
808-541-3445, FAX 541-3472, R8_NWHR.HON@NBS.GOV

Case # 12412

Epizoo # _____

Submitter:

Mr. George Balazs
NOAA-NMFS-SWFC
2570 Dole Street
Honolulu, HI 96822-2396

Specimen description/identification:

1 hawksbill turtle carcass

Date Submitted: (08/19/95)
(mm/dd/yy)

Date Collected: (08/19/95)
(mm/dd/yy)

Date Examined: (08/19/95)
(mm/dd/yy)

Location: Kealia Pond NWR (N. Kihei Rd.)

County/Site: Maui

HISTORY: This animal was found dead on North Kihei Road on Kealia Pond NWR (Maui) at 1 a.m. on 8/19/96.

SIGNIFICANT FINDINGS: Grossly, there was a large fissure down the midline of the shell exposing the internal organs. There were large amounts of red fluid and albumin in the body cavity, the liver and kidneys were macerated and large numbers of fully formed and developing eggs were noted in the animal. Histology revealed bleeding in the kidneys and lung and diffuse inflammation of abdominal organ secondary to contact with albumin and perhaps intestinal contents.

DIAGNOSIS: Trauma secondary to vehicle strike.

COMMENTS: Gross lesions were indicative of an animal that suffered from acute severe trauma. Histology confirmed gross diagnoses. There was multiple inflammation of the surface of abdominal organs in response to release of albumin and possibly gastrointestinal material into the body cavity. This inflammation indicated the animal survived for some time after the traumatic incident. The animal was infected with flukes as evidenced by presence of rare eggs in the lungs and intestines. Fluke infestation was nowhere as severe as that observed in green sea turtles. The vascular inflammation was mild and its cause undetermined.

MANAGEMENT: A meeting was held in Maui to discuss possible options to prevent vehicle strikes in hawksbill turtles. Some options discussed included use of flashing signs, redesign of road, use of volunteers to look for turtles, and fencing off of beaches to vehicles.

_____ Preliminary Report (/ /) _____ X _____ Final Report (10/01/96)
date date date

Necropsy report is: _____ enclosed _____ X _____ available upon request.

X : Copies of this report sent to:

- Ms. Kathy Smith (USFWS)
- Ms. Karen Rosa (USFWS)

Pathologist: Thierry M. Work MS, DVM, MPVM

If you have questions regarding this case, contact Thierry M. Work MS, DVM, MPVM
at 808-541-3445. Include above Case Number. Diagnostic findings may
not be used for publication without the pathologist's knowledge and consent.

Histopathology (Cont.)

Ventriculus: No remarkable lesions are observed.

Spleen: In one section, there are prominent infiltrates of mixed granulocytes and mononuclears near the adventitia of a large artery. There are also rare trematode eggs present in the splenic white pulp.

Kidney: There are moderate numbers of proximal tubular cells containing variably sized intracytoplasmic hyaline droplets mainly concentrated near the luminal surface. There are also occasional large vessels with prominent perivascular or intramural cellular infiltrates composed of mononuclears and granulocytes. In another section, within perirenal fatty and connective tissue, there are massive infiltrates of red cells mixed with variably sized clumps of basophilic material (albumin).

Small Intestine: There are areas on the serosa where serosal cells appear columnar, hypertrophied and packed with variably sized eosinophilic granules. Occasional clumps of pleomorphic basophilic material are noted on the serosa. One section contains a single trematode eggs surrounded by macrophages.

Large Intestine: The serosa is diffusely coated with basophilic pleomorphic material. There are also diffuse aggregates of basophilic rods coating the serosa.

Morphologic Diagnoses:

- 1) Severe, diffuse, acute, hemorrhage, capsule, kidney.
- 2) Moderate, multifocal, acute, hemorrhage and albumin aspiration, lung.
- 3) Moderate, focal, acute, inflammation, capsule, liver.
- 4) Moderate, multifocal, acute, inflammation with albumin, serosa, small intestine.
- 5) Mild, acute, focal, inflammation, arterioles, spleen, kidney.

Comments: Gross lesions were indicative of an animal that suffered from acute severe trauma. Histology confirmed gross diagnoses. There was multiple inflammation of the surface of abdominal organs in response to release of albumin and possibly gastrointestinal material into the body cavity. The presence of albumin is compatible with leakage of albumin in the pleuroperitoneal cavity as seen grossly. The animal was infected with flukes as evidenced by presence of rare eggs in the lungs and intestines. Fluke infestation was nowhere as severe as that observed in green sea turtles. The vascular inflammation was mild and its cause undetermined. The gastrointestinal trematodes have been reported from hawksbill turtles from Cuba, Puerto Rico, India and Australia and were considered an incidental finding.

Final Diagnosis (in order of importance)

	topog.	morph.	etiol.	funct.	disease	link
1. <u>Trauma</u>	(T10050)	()	(E90020)	()	()	()
2. _____	()	()	()	()	()	()
3. _____	()	()	()	()	()	()

Diagnostic findings may not be used for publication without the pathologist's knowledge and consent.

NATIONAL WILDLIFE HEALTH CENTER
NECROPSY REPORT

Submitter's Name, Affiliation Address

Mr. George Balazs
NOAA-NMFS-SWFC
2570 Dole Street
Honolulu, HI 96822-2396

Case: 12412
Accession: 001
Collected: 08/19/96
Exam Date: 08/19/96
Pathologist: T.M. Work
Prosecutor: T.M. Work

Species: Hawksbill turtle Specimen: Carcass
Bandtype: (N) Ref/Band No: () Euth: (N) Weight (Gm): (104545)
History Summary: This animal was found dead on North Kihei Road on Kealia Pond NWR (Maui) at 1 a.m. on 8/19/96.

EXTERNAL/INTERNAL OBSERVATIONS - LABORATORY RESULTS

External: The entire shell is cracked midline with a single fissure extending from head to tail. There are several large lateral fissures extending 8 to 12 inches from the midline. One of these lateral fissures is on the left side and four are on the right side indicating that the animal may have been hit initially on the right side. The internal organs are exposed. The animal is in a dorsal presentation and internal organs are examined through the shell crack in situ. The head and flippers are not examined.

Internal: There are large amounts of red fluid mixed with egg yolk within the pleuroperitoneal cavity. The liver is firm, smooth, homogenous brown and macerated. The heart is firm, smooth, homogenous pink and otherwise unremarkable. The lungs are spongy and homogenous dark pink. The spleen is firm, smooth, homogenous purple and measures -8 X 5 cm. The kidneys are firm, smooth, and homogenous red-brown. The left kidney is macerated. The brain is not examined. The oviduct is smooth, homogenous tan-pink with >100 maturing follicles. Approximately 100 fully formed eggs were removed prior to necropsy and ~70 eggs were removed during necropsy. The esophageal mucosa is smooth and homogenous tan. The stomach mucosa is smooth homogenous pink. Red flukes measuring 1.2 cm long are lightly adhered to the stomach mucosa. The small and large intestines are smooth homogenous pink. There are occasional small, firm, fleshy nodules on the gut wall that seem to merge with large arteries. The small intestines contain small bits of coral and moderate amounts of green fluid. The large intestines contain no feces. No lesions are seen in the pericardial sac, heart valves, gastrointestinal mucosa and serosa, ovary, and superficial and cut surface of heart, kidney, spleen, and lungs.

Preliminary Diagnosis: Trauma Exam Type: (GO)
Sex (F) Age (A)/() Body Cond. (G) Postmortem State (G) Giz. Lead ()/()
Laboratory Tests/Samples Saved:
1. Histo: Lung (A-B); spleen (C); liver (D); kidney (E-F); heart (F-H); large artery (I); small intestine (J-L); stomach (L); large intestine (M); oviduct (N).
2. Frozen: stomach contents.
3. Saved: flukes - small intestine.

PARASITOLOGY:

The parasites in the turtle were Diaschistorchis pandus. (Michael Kinsella)

HISTOPATHOLOGY:

Lung: There are variably sized clumps of deeply basophilic globular material within the small airways. These are occasionally associated with clumps of red cells and clumps of fibrin and degenerating thrombocytes. Rare mononuclear infiltrates are noted within smooth muscle walls. Within the smooth muscle wall of one section, there are the remains of a trematode egg accompanied by little to no inflammatory response.

Large artery: No remarkable lesions are observed.

Liver: Focally, some capsular cells appear hypertrophied and vacuolated with intracytoplasmic accumulations of variably sized round basophilic to eosinophilic granules that appear aggregated away from the capsular surface. Occasional clumps of fibrin mixed with red cells and thrombocytes are noted adhered to endothelium of venules.

Heart: There are rare focal mononuclear infiltrates within the myocardium.

Scientists learn from rare turtle killed on Maui

By TIMOTHY HURLEY
Staff Writer 8-28-76

KIHEI — Last week's hit-and-run killing of a hawksbill turtle was bad news for a species struggling to survive. But the death may serve in the long run to advance scientific knowledge about the critically endangered sea turtles.

"We're trying to make the best out of a bad situation," said George Balazs, National Marine Fisheries Service zoologist and turtle expert.

The Bishop Museum in Honolulu has agreed to accept the carcass into its zoology collection, the first adult hawksbill available for archiving, preservation and display.

In addition, samples of the hawksbill's tissue will be examined by a University of Hawaii researcher, and some of the bones will be sent to a laboratory in Washington, D.C., to determine how old the animal was.

The large egg-bearing hawksbill was struck and killed on North Kihei Road at about 1 a.m. Aug. 19.

A necropsy was conducted last week at the Honolulu Field Station of the National Wildlife Health Center in Honolulu. Federal veterinarian Thierry Work found what he described as a normal healthy turtle that died of major trauma.

Work said it was the first necropsy he had conducted on a hawksbill, although, internally, the animal appears very much like its more common cousin, the green sea turtle.

Work said the hawksbill was absent the cancerous tumors that plague so many green sea turtles. Hawksbills are not known to have tumors.

As part of the necropsy procedure, Work extracted 70 eggs, which he sent to the National Marine Fisheries Service for possible hatching. Work also noted the presence of developing egg follicles, which means the turtle's hatching season was long from over.

The turtle weighed in at 230 pounds and was measured at nearly 37 inches long. Although the hawksbill was probably was more than 30 years old, the exact age remains uncertain, Balazs said, and some bones will be sent to a Washington laboratory to determine the age.

Balazs said U.H. pathology Professor Yoshitsugi Hokama, an expert on ciguatera toxin, has agreed to examine a portion of the hawksbill's tissue.

Hawksbill turtles are occasionally known to be toxic, Balazs said. A recent incident in the island na-

tion of Zanzibar off the east coast of Africa resulted in 47 dead and hundreds ill after some hawksbills were eaten. Another incident in Fiji 1½ years ago resulted in illness.

Balazs noted that at least one Native Hawaiian historical account calls the hawksbill a "kapu turtle" that is not supposed to be eaten. That might point to the toxicity.

There has never been an opportunity in Hawaii to test an adult hawksbill for toxicity, the scientist said.

After reviewing the facts of Aug. 19 accident, Balazs said wildlife officials have two theories for what happened that early morning: A tire ran right over the animal, from posterior to anterior, explaining why the turtle's shell was crushed and broken along natural seams; or, perhaps the turtle was hit by something underneath the body of a raised 4-by-4 vehicle, such as a strut. A good size shell chip was found 50 feet from the accident scene, and there were no skid marks on the shell or the street.

Police were called to the scene north of the Sugar Beach condominiums on North Kihei Road at 1:20 a.m. and found the fatally injured hawksbill. By the time a state Department of Land and Natural

Resources official arrived, the animal was dead.

DLNR aquatic biologist Skippy Hau pulled more than 100 eggs from the turtle's carcass and buried them in a safe, undisclosed location in the dunes.

Wildlife officials said they believe the animal was looking for a suitable nesting spot and, finding none on the narrow beach or eroded dune, headed inland across the road.

The death represents a significant blow to a species considered extremely rare. Officials have estimated that only a couple dozen hawksbill turtles nest in the Hawaiian islands each year. The animal is on the U.S. endangered species list.

Only a handful of hawksbill nests have been discovered on Maui in the last five years, all in the Kealia area.

Two nests have been found at Kealia this year — more evidence that the hawksbill is either continuing to establish a presence at Kealia or making a comeback. The area is not known as a traditional hawksbill nesting site.

The nesting season of the hawksbill ranges from late July to November, during which the large females come onshore to bury their eggs at night.



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Pacific Islands Ecoregion

300 Ala Moana Blvd., Room 3108

P.O. Box 50088

Honolulu, Hawaii 96850

Telephone: (808) 541-3441, Fax: (808) 541-3470

FAX TRANSMISSION

September 16, 1996

7 pages

To: September 6, 1996 Hawksbill Sea Turtle Meeting Attendees (see attached)

From: Craig Rowland, Fish and Wildlife Biologist

Subject: Meeting Notes and Update

Thanks for attending the meeting to discuss potential solutions to the sea turtle/beach degradation problem at Kealia Beach. I think we made a lot of progress in a short period of time. Attached are notes from that meeting along with a press release that was distributed to the media today. Also attached is a map of sea turtle nesting sites thus far in 1996.

Approximately 20 hatchlings were detected by beach patrol volunteers after emerging from a nest last night. The nest has been fenced and is being monitored in order to detect additional hatchlings that are expected to emerge over the next few nights.

Since our meeting, many of us have been working on various aspects of seeking protection for this area:

Beach Patrols: The Hawaii Wildlife Fund organized beach patrols which started on September 13, 1996. The volunteers participating in these patrols will be monitoring the beach for nesting females as well as for hatchlings, and diverting them from the road or untangling them as needed, with minimal disturbance.

Solar Flashing Lights: Bob Siarot obtained a price of \$4,000 each for these. He and Kathy Smith also talked about the possibility of using temporary flashing lights (the ones used at road construction sites) for the signs. The problem with these is that the batteries need to be changed often, which is something the beach patrol volunteers might be able to do. One suggestion that came up since our meeting was to use roadside sawhorses (the type used at road repair sites, with flashing lights) to support sea turtle signs. These signs would be deployed in the evening and retrieved in the morning by volunteers or others. Let me know what you think of this idea.

Public Service Announcement: Drafted by Charlie Maxwell and Kathy Smith, this announcement was recorded for air play by Uncle Charlie.

Drift Fencing: Kathy is awaiting for cost estimates and shipping details for wooden drift fencing.

Video Project: The Honu Project, a non-profit conservation group is producing a video on Hawaiian hawksbills (funded by USFWS). They have been filming recently with the Larry Katahira (National Park Service), George Balazs and Bill Gilmartin on the Big Island. The video project will include information on the Maui population and will be a good way of providing public education. The Honu Project's other video on sea turtle tumors has been shown on public access television over the past couple of years.

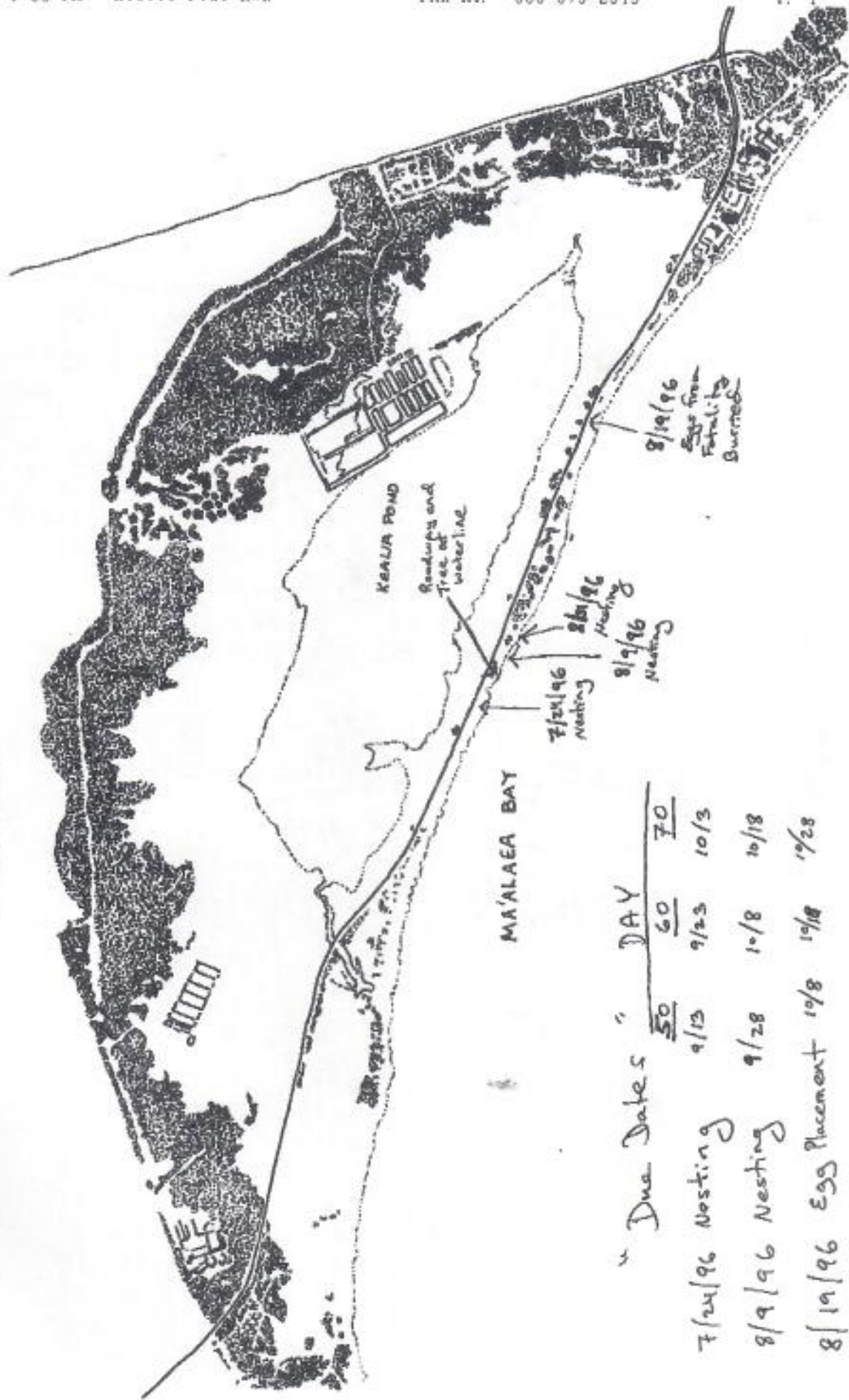
Thanks to everyone for keeping the ball rolling. If you have any questions, please feel free to contact me at the above numbers or via email at craig_rowland@mail.fws.gov.

attachments

cc: The Honu Project

Hawksbill Sea Turtle 1996 Nesting Sites
and Due Dates based on 50 to 70
day incubation period. *K. Smith*

vegetation
water



Due Dates	DAY
7/24/96 Nesting	50
8/19/96 Nesting	60
8/19/96 Nesting	70
8/19/96 Egg Placement	9/13
8/31/96 Nesting	9/23
	10/3
	10/8
	10/18
	10/28
	10/18
	10/28
	10/19
	10/29
	11/8

FACSIMILE TRANSMITTAL SHEET

HAWAII
WILDLIFE FUND

Date	9-13-93
# of pages	3
Company	HAFS
Attention	George Balase
From	Hannah Bernard

Nesting
Sequence
TO WCG

MESSAGE:

 KEALIA POND NATIONAL WILDLIFE REFUGE
 VOLUNTEERS FOR HAWKSBILL NIGHT WATCH
 (HONU'EA PATROL)

Nancy Greene	34 Luanaiki Pl., Kihei 96753	874-2828
Patrick Ryan	532 Kaiola St., Kihei 96753	879-7926
Charnan Carroll	288 Pule Pl., Wailuku	242-8847
Larry Epton	288 Pule Pl., Wailuku	242-8847
Bettina Jones	P.O.B 803, Kihei 96753	879-4781
Allen Glabeison	P.O.B. 803, Kihei 96753	879-4781
Steve Williams	537 Kumulani Dr., Kihei 96753	874-6194
Donna Liddicote	19 Hale Malia Pl, Lahaina 96761	669-7580
Robin Newbold	190 Hauoli St., #204, Wailuku 96793	244-5066
Eric Brown	101 N. Kihei Rd., #21, Kihei 96753	875-9179
Howard Reiken	619 Willow Ave, #2L, Hoboken, N.J. (201) 792-2672	
	07030	
Donna Olah-Reiken	" "	" "
Patti Wey	101 N. Kihei Rd., #21, Kihei 96753	875-9179
Michelle Guilbeault	1450 S. Kihei Rd., #F504, Kihei 96753	875-0517
Allan Guilbeault	" "	" "
Lisa Davis	101 N. Kihei Rd., Kihei 96753	879-8811
Linda Turnbull	338 Naniloa, Wailuku	244-3218
Rich Weaver	25 Wailana Pl., #206, Kihei	875-1451
Meagan Jones	16 Kulani Pl., Paia 96779	579-8829
Tamar Murray	483 S. Kihei Rd., #109, Kihei 96753	874-2861
Kinzee Kubek	483 S. Kihei Rd., #120, Kihei 96753	879-6437
Tanzayo Brown	P.O.B. 1279, Paia 96779	572-0519
Chris Mentzel	P.O.B. 273, Makawao	573-1942
June Freiwald	15 Kulanihakai St., #5G, Kihei 96753	874-4860
Wes Freiwald	" "	" "
Diana Schulte	2737 S. Kihei Rd., #245, Kihei 96753	874-3679
Ted Mickowski	P.O.B. 1773, Lahaina 96761	667-5678
Gloria Adlawan	760 S. Kihei Rd., #201 96753	879-8266
Sid Adlawan	" "	" "
Tristan Adlawan	" "	" "
Suzanne Canja	P.O.B. 12082, Lahaina 96761	669-4814
Tim Stark	101 N. Kihei Rd., Kihei 96753	879-8811
Stephanie Crawford	" "	" "
Michael Milot	760 S. Kihei Rd., #226, Kihei 96753	891-0176
Rachael Cartwright	P.O.B. 1773, Lahaina 96761	667-5678
Don O'Malley	c/o P.O.B. 12082, Lahaina 96761	661-9183
Scott Cardin	" "	661-8787
George Brown	19 Hale Malia Pl., Lahaina 96761	669-7580
Susie Dodge	5170 B Hanawai St., Lahaina 96761	669-4814
Ronaldo Macedo	" "	" "
Ann Coopersmith	P.O.B. 149, Paia 96779	579-8577

Ted Grupenhoff
 Steve Zeff
 Jennifer Durnin
 Ann Rillero

P.O.B. 5361, Lahaina 96761 661-5366
 " " " 573-4164
 1010 Front St., D208, Lahaina 96761 661-5635
 101 N. Kihei Rd., Kihei 96753 877-8860

Hannah Bernard

POB 5361, Lahaina 96761 667-0437

John Ensign

25 Kahana Pl, Lahaina 96761 665-0577

Tory Ensign

" " " "

Bill Gilmartin

55-472A Palakona St, Lāie 293-9558
 96762

HAWAII WILDLIFE FUND

55-472 A PALEKANA ST.
LAIE, HI 96762
(808) 293-9558 (VOICE AND FAX)

FAX TRANSMISSION

TO: Kathy, Hannah, Craig, George

FAX NUMBER:

FROM: BILL GILMARTIN

RE: Maui hawksbill turtle watch

PAGES: 3

DATE: 9/14

COMMENTS:

Draft guidelines for volunteers
follow - for double-side printing on
one page. Please get your
comments back to me asap.

Thanks

MA'ALAEA BAY TURTLE PATROL

INSTRUCTIONS

What to do:

- * **Keep adult turtles from getting onto the roadway.**
Use the plywood boards provided and place one in front of a turtle that attempts to cross the road. The turtle will probably turn to move along the board rather than turn around. Place the second board next to the first board in the direction the turtle begins to move, then move the original blockade board to the other side of the second board. Continue this leapfrog road blockade attempting to guide the turtle to a dune or vegetation area. When the turtle appears to stop its attempt to cross the roadway, ~~then~~ back off well away from it with the boards. Continue to watch it from a distance and be prepared to return with the boards if it makes another attempt to cross the road. These females are trying to get to the beach crest and vegetation to dig a nest - try to guide them to these areas using the boards. Keep your body low (behind the boards), speak softly (when necessary to speak), and do NOT use flashlights at any time near the adult turtle.

- * **Keep hatchlings from getting onto the roadway.**
Hatchlings that emerge from a nest above the beach crest may be attracted away from the ocean by highway lights or other lights behind the beach. If this happens, use a board to attempt to block the light source the hatchlings seem to be attracted to - this is likely to be sufficient for them to reorient to the light reflected off the ocean and then they will head in the correct direction. If they do not move toward the ocean, their view of the sea may be blocked by vegetation or sand dunes. Either use a flashlight to attract the hatchlings to an area where they can see the ocean (then turn off the light), or pick up the hatchlings and place them on the sea side of the material blocking their ocean view.

- * **Remove trapped hatchlings from debris, vegetation, and tire depressions.**

What to do (continued):

- * If you observe a turtle coming up the beach to nest, stay well away from her, continue to watch her, do not use flashlights. Be prepared to act, if she attempts to cross the highway. If she digs a nest and lays eggs (she may false nest-dig, but not lay eggs), mark the nest site with a few pieces of coral after she has covered it and left to return to the water. REPORT the nest site to Kathy Smith at 875-1582.
- * Report any emergence of hatchlings observed to Kathy Smith.

What NOT to do:

- * Use flashlights as little as possible when patrolling the beach for turtles. Use your hand to focus the light only where you may need it. Do not point any lights toward the ocean.
- * Do not build fires on the beach.
- * Do not dig into any nests for any reason.
- * Do not approach vehicles on the beach and attempt to caution the drivers about turtles - see "special items" below.

MOUSE
AROUND

Special items:

- * If there are vehicles on the beach in the vicinity of turtles (adults or hatchlings) or if you have cause to be concerned for your personal safety on the beach, call 911 and request that a police officer be dispatched to your location. Be prepared to tell the dispatcher exactly where you are on the beach, what the problem is, and give the police your phone number (and leave the phone on in case they have difficulty locating you and need to call you back).

[51] From: Gloria Wong 9/10/96 4:06PM (592 bytes: 7 ln)
To: George Balazs
Subject: telephone msg.

Size?

----- Message Contents -----

kathy smith @ usfws called about an hawksbill turtle that has been hanging around Molokini island. ~~it's the one with the deformed flipper.~~ kathy said capt. alan glaberson has some good photographs of it and if you want to talk to him you can call him at (879-4781) (maui). kathy also said that capt. glaberson said he'll forward the photographs to her and in turn she'll send you some.

* Lick werner

MAUI FILE

[56] From: Denise Ellis 9/12/96 7:48AM (1521 bytes: 22 ln)
To: George Balazs
cc: Shawn Murakawa
Subject: Re: question from Skippy Hau

----- Forwarded -----

From: George Balazs 9/11/96 8:28PM (1334 bytes: 22 ln)
To: Denise Ellis
cc: Eugene Nitta
Subject: Re: question from Skippy Hau

----- Message Contents -----

Gene Nitta is the correct person. I suspect Gene will need much more information in order to render an official opinion. I would imagine Skippy has spoken to Gene by now, however, I'll call Skippy later on when I have the opportunity.

Come to think of it, since this is BEACH monitoring, I NMFS wouldn't have direct final word. It would be first and foremost in the FWS camp. Geo.

George-

Skippy called, said Craig @ FWS called him in regards to people wanting to start a volunteer group to monitor the Kealia Refuge Area. Wanted to know if you knew what permissions would be needed for this ect.. I gave him Gene Nitta's number which he was going to call, but he did want to hear from you, too. People suggesting monitoring beach and area for Hawksbill turtles (adult and hatchlings) are Hana Bernard and Bill Gilmartin with the Hawaii Wildlife Fund. Craig thought they should be State volunteers and Skippy wasn't sure. He had no idea what exactly they were intending to do with their monitoring program.

Denise

Synopsis

Geo. FYI

United States Department of the Interior

To: BALAZS



FISH AND WILDLIFE SERVICE
Pacific Islands Ecoregion
300 Ala Mouna Blvd., Room 3108
P.O. Box 50088
Honolulu, Hawaii 96850

FAX TRANSMITTAL

ROLDEX

To: Bill Gilmartin/Hanoah Bernard Hawaii Wildlife Fund P.O. Box 5361 Lahaina, HI 96761 ph: (808) 667-0437 fax: (808) 293-9558, (808) 661-9126	From: Craig Rowland Fish and Wildlife Biologist phone: (808) 541-3441 fax: (808) 541-3470 email: craig_rowland@mail.fws.gov	Date: September 11, 1996 Pages: 1
Subject: Ma'alaena Hawksbill Sea Turtle Monitoring		

We are reviewing procedures that can be taken to allow this project to move forward legally. There isn't sufficient time for your organization to obtain a permit of it's own for this work. Such a permit should be pursued for monitoring next year.

For this year we will determine the best available option to allow this work to be done without a permit being issued, in conjunction with a State or Federal agency. Due to the immediate need for this information, we have not had time to determine the most appropriate avenue for authorization. However, we foresee that the following actions will be reasonable and allowable:

- Nesting females:** If turtles are about to enter North Kihei Road the volunteers can turn them back toward the ocean.
- Hatchlings:** If hatchlings are about to enter North Kihei Road the volunteers can turn them back toward the ocean. Additionally, entangled or trapped hatchlings can be released (if vegetation, tire ruts, or trash) and allowed to continue their progress to the ocean.

While conducting nesting beach patrols, volunteers will use flashlights minimally, and only when necessary in order to reduce disturbance to the sea turtles.

So that we can pursue authorization, please get back to me as soon as you can with the names of your volunteers as well as the actions you foresee them conducting while involved in this project.

- cc: Skippy Hau, DAR, Maui Office
 Gene Nitta, NMFS
 George Balazs, NMFS
 Kathy Smith, Kealia Pond NWR
 Gene Hester, LE, Honolulu

Craig

**If you are in log
0700 - please call
me at home - Bill**

Road death reflects threat to rare turtle

By Edwin Tanji
Advertiser Maui County Bureau

MAALAEA, Maui — Hawksbill turtles are so rare that only two or three try to nest on Maui each year. But human intrusion has turned one nesting spot into a lethal gantlet.

A female hawksbill laden with eggs was killed by a passing car at Kealia Beach early yesterday.

"It's a terrible tragedy," said George Balazs, a federal fisheries biologist who specializes in sea turtles.

Hawksbill turtles are an endangered species, as rare as Hawaiian forest birds that are threatened with extinction, he said.

As most sea turtles do, female hawksbills return to the beach where they were born to lay eggs, Balazs said.

But turtles returning to Kealia Beach find the area dras-

tically changed in the last 25 years.

Erosion has reduced the width of the sand beach that runs for two miles alongside Kealia Pond. Condominiums have sprouted on both ends of the beach. With homes, hotels and businesses, Kihei's population has grown from barely 1,600 in 1970 to an estimated 15,000 today, not including visitors.

North Kihei Road, which runs within 50 feet of the shoreline, has turned from a potholed country road to a 45-mph, two-lane thoroughfare with cars speeding to and from Kihei.

A state aquatics resources specialist, Skippy Hau, said Maui police reported the dead turtle on the road about 1 a.m. Its shell was split open from the impact and its eggs were scattered over the road.

Hau and Kathryn Smith, manager of the Kealia Pond



Edwin Tanji/The Honolulu Advertiser
A turtle-shaped figure on signs posted in Maui warns motorists of turtles crossing roads.

National Wildlife Refuge, said it appeared the turtle had crawled up the beach, looking for a safe place to nest. It climbed over a low sand dune and crawled across the road, where it was struck.

See Turtle, Page A2

Turtle: Rare hawksbill dies

FROM PAGE ONE

Some of the eggs survived intact and scientists hope to hatch them.

Another hawksbill was killed similarly in August 1993, prompting Smith to post "turtle crossing" signs on both ends of that stretch of road.

"We want to call attention to the fact that those signs are not a joke," Hau said.

The turtle that died yesterday was nearly four feet long and weighed possibly 200 pounds. Smith and Balazs estimated that it was 25 to 30 years old.

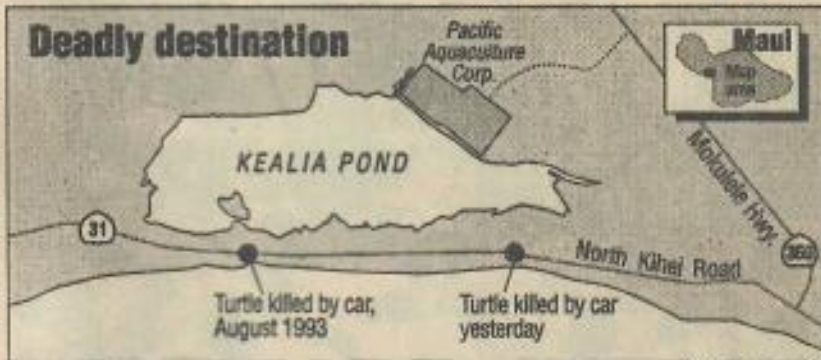
Balazs said hawksbills mature at about 15 years. The dead turtle probably represents one of only two or three nesting attempts on Maui this year, he said.

In a study, he placed radio tracking devices on two turtles on the Big Island and found hawksbills apparently spend their lives around the island where they are hatched, he said.

The more commonly seen green sea turtles are known to migrate to the Leeward Islands to nest. Nesting beaches there have been less disturbed.

Green sea turtles have distinct plate-like patterns on their shell, while hawksbill shells are

Deadly destination



plain. The hawksbill also is identified by the shape and color of its head.

Balazs said it's been only in the last six or seven years that hawksbill nestings have been reported in the area. It's possible turtle nests have been unnoticed before.

It's also likely that the hawksbill population is very slowly recovering, along with the green sea turtles, under federal and state laws that protect marine turtles as endangered species, he said.

Recovery will be difficult. In addition to problems with development of hotels and homes at nesting sites around the Islands, lights along the beach are likely to confuse turtles, which usually nest on moonless nights.

At Kealia Beach, there is no

development but the beach has eroded and turtles try to get beyond the high-water line by climbing the low dunes.

Smith said one way to protect turtles would be to re-establish the high sand dunes that once lined the Kealia shoreline or fence off the beach to keep turtles away from the road, she said.

Another solution would be to build a bypass road on the other side of Kealia Pond to take the heavy traffic away from the beach.

Either solution likely will involve Alexander & Baldwin, which owns the narrow strip of land between Kealia Beach and the road, and has proposed a bypass around Kealia Pond.

An A&B representative yesterday said the company would be willing to discuss options with Smith and community vol-

near Maui nesting site



Edwin Tanji/The Honolulu Advertiser

Larry Whitford, far left, a Fish and Wildlife Service sanctuary worker, Skippy Hau, second from left, and Kathryn Smith examine the hawksbill turtle killed on North Kihei Road.

unteers.

Mercer "Chubby" Vicens, an A&B Properties vice president for Maui, noted that A&B donated Kealia Pond to the Fish & Wildlife Service for the wildlife refuge and is interested in helping to protect native species.

Vicens also said the company has "suggested and recommended a road above the pond, rather than further expand North Kihei Road." The bypass road proposal is included in the Kihei community plan under review before the Maui Council.

HAWAII WILDLIFE FUND

55-472 A PALEKANA ST.
LAIE, HI 96762
(808) 293-9558 (VOICE AND FAX)

FAX TRANSMISSION

TO: GEORGE BALAZS
FAX NUMBER:
FROM: BILL GILMARTIN
RE: MAUI HAWKS BILLS
PAGES: 1
DATE: September 10, 1996

COMMENTS:

A "heads up" (I don't have a special form for this like you gov't guys do!) - I'll stop to see you Tues am or Wed. pm regarding any input you'd like to make regarding what to say to those that are now volunteering to do the night turtle watches at Ma'alaea. I have to talk to Craig about this too ... since I'm not going to say anything without authorization from him! I see the job as pretty simple, with primary job being to keep turtles off the road and 4-wheelers off the turtles on the beach. The below is for discussion:

Nesting:

- if turtles are seen, monitor from a good distance.
- if turtle is approached by a vehicle on the beach, stop the driver and request they avoid the area
- if turtles approach the road, use plywood boards (3'X4') to encourage turtle to dunes or vegetation, then leave them alone
- if they persist in attempting to cross the road, just stay with them blockading their mauka movement till they turn around
- if staff observe nesting, stay well away from the turtle until it covers the nest and leaves for the water, attempt to mark the nest area and report it to Kathy next a.m.

Hatchlings:

- I hesitate here to suggest anything other than simply being alert for the little ones and be sure any seen are heading to sea! (Asking them to check the known nest areas would probably mean they'd trample all over the area, making more of a problem than a solution...what do you think.)
- If hatchlings are detected, as above, request drivers to avoid the area for the evening.
- No nest excavations - what do you think?

Also...on tracking task on B.L., I was thinking of having a hand-GPS with the receiving stations to get station position and heading of signal...I think you've had experience with these units, what do you think of this approach?

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Edward K. Noda & Associates prepared the chart.

Endangered, egg-bearing hawksbill turtle killed on road

Continued from Page A1

The turtle carcass was sent to a National Marine Fisheries Service laboratory in Honolulu, where a necropsy was scheduled to be conducted — the first ever on an adult hawksbill.

George Balazs, National Marine Fisheries Service zoologist and turtle expert, described the episode as tragic.

"It's beyond all probability in my mind — as rare as they are — that there would be two hit-and-runs in a couple of years," Balazs said.

The death is particularly bad news, Balazs said, because a mature adult female is vital to perpetuating the species. It represents thousands of hatchlings in a lifetime.

Smith said a U.S. Fish and Wildlife Service meeting was scheduled this week to discuss strategies to protect the hawksbill in Maalaea Bay.

Only a handful of hawksbill nests have been discovered on Maui in the last five years, all in the

Kealia area.

With volunteers searching this year, two hawksbill nests already have been found in the dunes that separate the beach from the refuge and North Kihai Road.

Two years ago a big female was able to cross the road before wildlife officials hauled the turtle back to the ocean. Last year officials installed "turtle crossing" signs on North Kihai Road to warn motorists about the turtles.

"We want everyone to be aware that the turtle signs are real," Hisu said Monday.

The speed limit is 45 mph, but it's common for motorists to travel at much faster speeds.

"I've clocked guys 80 miles per hour," said refuge enforcement officer Larry Whitford.

The nesting season of the hawksbill ranges from late July to November, during which the large turtles come onshore at night to bury their eggs before heading back to sea by morning.

This year's nests represent more

evidence that the hawksbill is either continuing to establish a presence at Kealia or making a comeback. The area is not known as a traditional hawksbill nesting site.

Hawksbill nests hold more than 100 eggs, and they hatch between 50 and 70 days after laying. The babies then instinctively head for the ocean.

Turtles that live to adulthood mate two or more decades after hatching, and the females return to the beach of their hatching to lay their own eggs.

The hawksbill is characterized by a hooked, beaklike upper jaw and by two pairs of large shields on top of the head between the eyes. It is considered the most valuable of the sea turtles, and is coveted in Japan, where craftsmen use tortoise shell in jewelry, eyeglass frames and other products.

Found on the U.S. endangered species list, the hawksbill is protected by federal law with a fine of up to \$25,000 and a year in jail for killing one.





Kealla Pond National Wildlife Refuge Manager Kathy Smith pulls a tarp over a rare Hawksbill turtle killed when it was

The Maui News / MATTHEW THAYER photo
struck by a car on North Kihei Road Monday morning. The death poses a significant blow to the species, officials said.

Rare turtle struck, killed

Egg-bearing creature's death a blow to species

By **TIMOTHY HURLEY**
Staff Writer

KIHEI — Less than a week after wildlife officials warned motorists to watch out for hawksbill turtles along North Kihei Road, a large egg-bearing member of the critically endangered species was struck and killed there early Monday morning.

The death represents a significant blow to a species considered extremely rare, according to officials. It has been estimated that on-

ly a couple dozen hawksbill turtles nest in the Hawaiian Islands each year.

Police were called to the scene several hundred yards north of the Sugar Beach condominiums on North Kihei Road at 1:20 a.m. Monday and found a fatally injured hawksbill that apparently was hit by a vehicle in the road's makai lane and thrown into the mauka lane.

The shell of the turtle was split down the center from the impact, and its eggs were exposed, some of them splattered on the road.

The animal, estimated to be roughly 30 years old and weighing more than 200 pounds, was dead by the time state Department of Land and Natural Resources officials arrived.

DLNR aquatic biologist Skippy Hau said he pulled more than 100 eggs from the turtle's carcass and buried them in a safe, undis-

closed location in the dunes.

"We've got nothing to lose," he said.

The accident scene was less than a mile away from the spot where a similar egg-carrying hawksbill turtle was struck and killed three years ago.

As was the case in that incident, wildlife officials said they believe the animal killed Monday was looking for a suitable nesting spot and apparently wasn't satisfied with the narrow beach and eroded dune. Officials found meandering turtle tracks on the beach.

Kathy Smith, Kealia Pond National Wildlife Refuge manager, said that because turtles follow the moonlight, perhaps this one became disoriented by the flashing headlights on the road.

See ENDANGERED
on the next page

**United States Department of the Interior**

FISH AND WILDLIFE SERVICE
Pacific Islands Ecoregion
300 Ala Moana Blvd., Room 3108
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Honolulu, Hawaii 96850

FAX TRANSMITTAL

To: Ma'alaea Sea Turtle Meeting Attendees (see attached list)	From: Craig Rowland Fish and Wildlife Biologist phone: (808) 541-3441 fax: (808) 541-3470 email: craig_rowland@mail.fws.gov	Date: August 28, 1996 Pages: 2
Subject: Ma'alaea Sea Turtle Meeting		

This fax is sent to confirm our meeting scheduled for September 6, 1996, at 1pm, at the Division of Aquatic Resources Conference Room, 130 Mahalani Street, Wailuku.

The purpose of the meeting will be to discuss methods for preventing sea turtles from crawling onto South Kihici Road where they can be injured or killed by vehicles. I am optimistic that we will be able to arrive at some implementable solutions to this problem, and anticipate the meeting will cover the following subjects:

- Overview of the problem
- Discussion of Potential Solutions
- Selecting Strategies
 - Short-term Actions
 - Long-term Plans

If you need directions to the conference room, please call Van at the Division of Aquatic Resources (ph. 243-5294, fax 243-5006). If you have any questions or suggestions regarding this meeting please feel free to contact me.

Ma'alaea Sea Turtle Protection Meeting
 September 6, 1996, 1pm
 Division of Aquatic Resources Conference Room
 130 Mahalani Street, Wailuku, HI 96793
 Ph. 243-5294, fax 243-5006

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 fax: (808) 949-7400

Also

Phil Ota
 District Land Agent for DNR

STATE OF HAWAII
 Department of Land and Natural Resources
 Division of Aquatic Resources - Maui
 130 Mahalani St.
 Wailuku, Hawaii 96793
 (808) 243-5294

August 28, 1996

Memorandum

To: William Devick, Acting Administrator
 Through: Randy Honebrink, Education Coordinator
 From: Brooks Tamaye, Information Specialist ↗
 Subject: Turtle Nest at Waihe'e Beach Park

On 8/27/96, at approximately 2:15 p.m., a caller (Brian) reported to our office that he saw what appeared to be turtle eggs being exposed by waves at Waihe'e Beach Park. It was also reported to us by Kathy Smith of Kealia Pond NWR a few minutes later.

I arrived at Waihe'e at approximately 2:40, just in time to get a description of the location before the caller had to leave for an appointment. He also reported that about ten eggs had washed away. The nest was located about 100 yds. west of the parking lot. The area has high (about 15'), relatively steep sand dunes that are slowly being eroded away. The nest was located at the base of the dune and it was being inundated by the rising tide. Several eggs could clearly be seen at the surface. Each wave that washed over exposed the eggs further.

After consulting with Gene Nitta of NMFS (via Van at our office), it was decided that it would be best to move the eggs. I dug a hole approximately 8' away and up on the dune at the height that some beach morning glory was growing. I dug until damp sand was reached (about 14" down). The eggs were transferred to their new location trying to maintain their original orientation. The eggs were covered and the site marked. After covering the eggs, I observed other eggs being thrown about in the shorebreak and recovered whatever I could.

Since people in the general vicinity saw me working, I reinspected the site later. It was undisturbed. However, early this morning another inspection revealed some amount of disturbance. Whether it was from humans, animals, or naturally shifting sand could not be determined. I dug down a little and could feel an egg, so everything was left in place. Hopefully the level of disturbance was only on the surface. An empty egg casing was also recovered from the shoreline at this time.

Count of eggs recovered

Reburied: 76 (one of which had a puncture)
 Cracked: 1
 Intact eggs recovered from shorebreak: 7
 Casings recovered from shorebreak: 2 (one recovered 8/27 and one recovered 8/18)

A total of *at least* 86 eggs were deposited by the turtle. The eggs did not appear to be well developed; evidenced by the one cracked egg recovered in which only yolk was observed. The

See A2

Turtle Nest Waihe'e
8/28/96
Page 2

other eggs also appeared to have only yolk.

It is uncertain at this time what species of turtle nested. The eggs appear larger than hawksbill's eggs, though. Eggs will be sent to NMFS for their determination. The site will be monitored periodically as time permits for about the next 60 days.

- c: DOCARE-Maui
- G. Balazs, NMFS
- G. Nitta, NMFS
- K. Smith, USFWS

MEETING AGENDA
Ma'alaea Sea Turtle Protection Meeting
September 6, 1996, 1pm
Division of Aquatic Resources Conference Room
130 Mahalani Street, Wailuku, HI 96793
Ph. 243-5294, fax 243-5006

1:00 pm Overview of the problem - Why did the turtle cross the road?
Dune erosion
Headlights
Obstacles - trash and introduced plants

1:20 pm Discussion of Potential Solutions

Short Term:

Keeping Turtles Off the Road

Drift fencing along mauka edge of dune

Jersey barriers for areas where the road is very near the shore

Sand deposition (thru direct placement, drift fences and plantings)

Dune re-vegetation

Alerting Drivers to the Presence of Turtles

Flashing lights on turtle signs

Rumple strips on road

Reduced speed limit

Public education

Keeping Turtle Nests from Being Damaged by Vehicles

Restricted Access

Increased law enforcement

Monitoring of nesting activity

Community involvement

Others?

Long Term:

Rerouting South Kihei Road

Dune restoration

Monitoring and research

Community involvement

Others?

2:30 pm Selecting Strategies
Short-term Actions
Long-term Plans

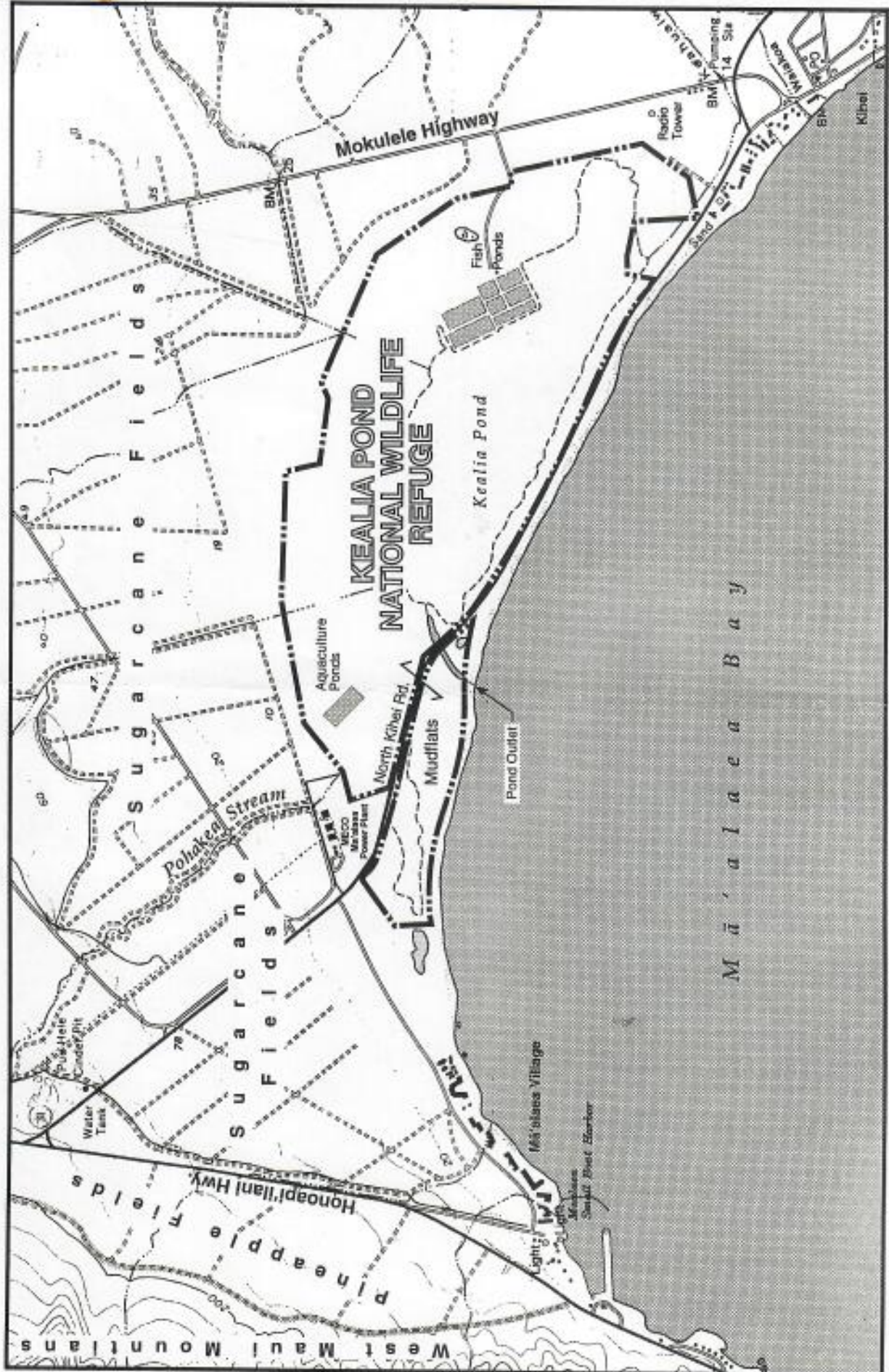
3:00 pm Pau

*Preservatives?
old telephone poles*

NAUPAKA

Ma'alaea Sea Turtle Protection Meeting
September 6, 1996, 1pm
Division of Aquatic Resources Conference Room
130 Mahalani Street, Wailuku, HI 96793
Ph. 243-5294, fax 243-5006

- George Balazs Deputy Chair, IUCN Marine Turtle Specialist Group, c/o 2570 Dole St., Honolulu, HI 96822-2396, ph.: (808) 943-1240, fax: (808) 943-1290
- Bill Gilmartin Hawaii Wildlife Fund, P.O. Box 5361, Lahaina, HI 96761
ph.: (808) 667-0437, fax: (808) 661-9126
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- Charles Maxwell Hawaiian Cultural Specialist, ph.: (808) 572-8038, fax: (808) 572-0602
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ph.: (808) 973-2987, fax: (808) 973-2941
- Phil Ohta Land Management Agent, Maui County
- Craig Rowland Biologist, U.S. Fish and Wildlife Service, Ecological Services, Pacific Islands Office, P.O. Box 50088, Honolulu, HI 96850
ph.: (808) 541-3441, fax: (808) 541-3470
- Robert Siarot, P.E. Maui District Engineer, Highways Division, Department of Transportation, State of Hawaii, 650 Palapala Drive, Kahului, HI 96732
ph.: (808) 877-5061, fax: (808) 877-7072
- Kathy Smith Refuge Manager, Kealia Pond National Wildlife Refuge, P.O. Box 1042, Kihei, HI 96753, ph.: (808) 875-1582, fax: (808) 875-2945
- Howard H. Tagomori Chief of Police, Maui Police Department, 55 Mahalani St., Wailuku, HI 96793, ph.: (808) 244-6300, fax: (808) 244-6411
- Brooks Tamaye Information Specialist, Department of Land and Natural Resources, Division of Aquatic Resources, 130 Mahalani Street, Wailuku, HI 96793,
ph.: (808) 243-5294, fax: (808) 243-5006
- Mercer "Chubby" Vincens Vice President, A&B Properties, Inc., 33 Lono Ave., P.O. Box 156, Kahului, HI 96732, ph.: (808) 877-5523, fax: (808) 871-7497
- Dr. Thierry Work Honolulu Field Station, National Wildlife Health Research Center National Biological Survey, 300 Ala Moana Blvd., Suite 3317A, Honolulu, HI 96850, ph.: (808) 541-3445, fax: (808) 541-3472



Source: USGS, 1983



LEGEND

— Kealia Pond National Wildlife Refuge Boundary



United States Department of the Interior

FISH AND WILDLIFE SERVICE
KEALIA POND NATIONAL WILDLIFE REFUGE

P.O. Box 1042
Kihei, Maui, Hawaii 96753
Tel. (808) 875-1582
Fax (808) 875-2945



August 31, 1996

MEMORANDUM

To: Files

From: Refuge Manager, Kealia Pond National Wildlife Refuge

Subject: 1st Nesting Attempt by Hawksbill Sea Turtle at Ma'alaea Bay Since Roadway Fatality

8/31/96

On their 6:00 A.M. patrol of the beach between Kihei and Ma'alaea, volunteers Gloria Adlawan and Diane Schulte encountered fresh turtle tracks and diggings. The site is located approximately 200 ft W of the old aerial navigation marker along N. Kihei Road and 300' E of a large kiawe tree that extends over the beach to the water's edge. Park at the navigation marker (a several foot square diamond shape atop a tall pole between the two and three mile posts.) Note that this location is within 100' of the August 9 attempted nesting and track width corresponds with those earlier measurements.

The crawl extended 60 ft or more along the shoreline, with two climbs onto the low dunes separating the eroded beach from N. Kihei Road. There are two locations that should be watched as possible nests--these are marked with inconspicuous white coral placed mauka of excavation. The most likely nest is up on the dunes near two small kiawe saplings (max ht. 7 ft). The excavated area is immediately W and makai of the saplings. A second highly disturbed site lies at the toe of the dune. The sand at the face of the dune had been "mined" by the turtle to form a ramp. This appears to be where she climbed down from the dune, but should be watched as a possible nest site due to amount of disturbance and fact that tracks went directly to the water from there. A third site to the E about 30' near where the crawl began, had much disturbance of vegetation @ base of dunes. This location was also marked with coral.

Note that in the half hour it took me to get to the site from when it was discovered, a truck had driven within three feet of our possible nest. Dog and mongoose tracks were also clearly evident all along the course of the turtle's travels.

✓ cc:

George Balazs, NMFS
Skippy Hau/Brooks Tamaye, DLNR Aquatic Resources
Brooks Harper, USFWS

LIST OF SAMPLES COLLECTED FROM ADULT FEMALE HAWKSBILL TURTLE
SALVAGED FROM ROAD-KILL ON MAUI, AUGUST 19, 1996

submitted by

George H. Balazs
National Marine Fisheries Service
Marine Turtle Research Program
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1. Pectoral Muscle
2. Pelvic Muscle
3. Deep Pelvic Muscle
4. Left Hind Pelvic Depot Fat
5. Right Pelvic Depot Fat
6. Heart
7. Intestine with Yellow Fat
8. Kidney
9. Liver
10. Lung
11. Skin
12. Undeveloped Eggs

8/26/96
Dr. Hokama 956-8682
OH Biomed Bldg 5th floor
Dept. Pathology

Road death reflects threat to rare turtle

By Edwin Tanji
Advertiser Maui County Bureau

MAALAE, Maui — Hawksbill turtles are so rare that only two or three try to nest on Maui each year. But human intrusion has turned one nesting spot into a lethal gantlet.

A female hawkbill laden with eggs was killed by a passing car at Kealia Beach early yesterday.

"It's a terrible tragedy," said George Balazs, a federal fisheries biologist who specializes in sea turtles.

Hawkbill turtles are an endangered species, as rare as Hawaiian forest birds that are threatened with extinction, he said.

As most sea turtles do, female hawkbills return to the beach where they were born to lay eggs, Balazs said.

But turtles returning to Kealia Beach find the area dras-

tically changed in the last 25 years.

Erosion has reduced the width of the sand beach that runs for two miles alongside Kealia Pond. Condominiums have sprouted on both ends of the beach. With homes, hotels and businesses, Kihei's population has grown from barely 1,600 in 1970 to an estimated 15,000 today, not including visitors.

North Kihei Road, which runs within 50 feet of the shoreline, has turned from a potholed country road to a 45-mph, two-lane thoroughfare with cars speeding to and from Kihei.

A state aquatics resources specialist, Skippy Hau, said Maui police reported the dead turtle on the road about 1 a.m. Its shell was split open from the impact and its eggs were scattered over the road.

Hau and Kathryn Smith, manager of the Kealia Pond



Edwin Tanji/The Honolulu Advertiser
A turtle-shaped figure on signs posted in Maui warns motorists of turtles crossing roads.

National Wildlife Refuge, said it appeared the turtle had crawled up the beach, looking for a safe place to nest. It climbed over a low sand dune and crawled across the road, where it was struck.

See Turtle, Page A2

Turtle: Rare hawksbill dies near Maui nesting site

FROM PAGE ONE

Some of the eggs survived intact and scientists hope to hatch them.

Another hawksbill was killed similarly in August 1993, prompting Smith to post "turtle crossing" signs on both ends of that stretch of road.

"We want to call attention to the fact that those signs are not a joke," Hau said.

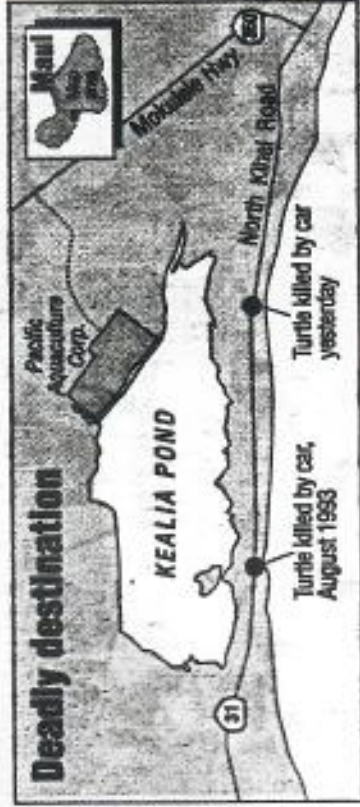
The turtle that died yesterday was nearly four feet long and weighed possibly 200 pounds. Smith and Balazs estimated that it was 25 to 30 years old.

Balazs said hawksbills mature at about 15 years. The dead turtle probably represents one of only two or three nesting attempts on Maui this year, he said.

In a study, he placed radio tracking devices on two turtles on the Big Island and found hawksbills apparently spend their lives around the island where they are hatched, he said.

The more commonly seen green sea turtles are known to migrate to the Leeward Islands to nest. Nesting beaches there have been less disturbed.

Green sea turtles have distinct plate-like patterns on their shell, while hawksbill shells are



Advertiser Graphic

plain. The hawksbill also is identified by the shape and color of its head.

Balazs said it's been only in the last six or seven years that hawksbill nestings have been reported in the area. It's possible turtle nests have been unnoticed before.

It's also likely that the hawksbill population is very slow recovering, along with the green sea turtles, under federal and state laws that protect marine turtles as endangered species, he said.

Recovery will be difficult. In addition to problems with development of hotels and homes at nesting sites around the Islands, lights along the beach are likely to confuse turtles, which usually nest on moonless nights.

At Kealia Beach, there is no

development but the beach has eroded and turtles try to get beyond the high-water line by climbing the low dunes.

Smith said one way to protect turtles would be to re-establish the high sand dunes that once lined the Kealia shoreline or fence off the beach to keep turtles away from the road, she said.

Another solution would be to build a bypass road on the other side of Kealia Pond to take the heavy traffic away from the beach.

Either solution likely will involve Alexander & Baldwin, which owns the narrow strip of land between Kealia Beach and the road, and has proposed a bypass around Kealia Pond.

An A&B representative yesterday said the company would be willing to discuss options with Smith and community vol-



Edwin Tami/The Honolulu Advertiser
Larry Whitford, far left, a Fish and Wildlife Service sanctuary worker, Skippy Hau, second from left, and Kathryn Smith examine the hawksbill turtle killed on North Kihel Road.

unteers.

Vicens also said the company has "suggested and recommended a road above the pond, rather than further expand North Kihel Road." The bypass road proposal is included in the Kihel community plan under review before the Maui Council.

Date: Tue, 20 Aug 1996 06:51:38 -0600
From: "R8_NWHR.HON" <R8_NWHR.HON@nbs.gov>
To: gbalazs@honlab.nmfs.hawaii.edu
Subject: Hawksbill

Geo-

Findings: Animal's shell was split dorsally down midline revealing internal organs. Animal was examined inside box through the crack in the shell (plenty of room to get in and out and remove organs). Liver partially macerated as was left kidney. Lots of fluid and blood in body cavity. Fully developed ovary with 100+ yolk follicles and 60+ fully formed eggs most of which were sent to you. Other than trauma, no visible organ pathology. Few to no GI contents (stomach contents saved frozen) and a few trematodes inside the stomach lumen (species unknown-samples saved). Histo samples of most major organs including gut, spleen, liver, kidney, lung, heart were saved. Did not examine the head and flippers and took no measurements as turtle was too heavy to lift out of box at the time. Figured you would do morphometrics anyway.

Carcass is in walk in cooler at ag station. We have to go there today to do some other necropsies so maybe we can coordinate your picking it up and help out. Let me know.

Separately, I'm generally not the crusading type but I find this whole event a little outrageous. It would seem that a 240 lb turtle would be kind of hard to miss. You would certainly notice it once you hit it as it would probably do a hell of a job on the wheel alignment. Anyway, is there any way we can use this tragic mortality (we lost more than a mature healthy hawksbill here)? Perhaps talk to Gary Sprinkle at News 4 to get the message out that people need to look out for turtles? Perhaps coordinate with Cathy Smith at Kealia Pond in Maui? These are just naive ideas but it would be important to strike while the iron is hot.

TMW

ie' lit! theatre ers 34



Fleeing Grozny Massive attack is threatened A10



West Maui brush fire Traffic is tied up, but blaze quickly contained A3

The Maui News

Maui's Newspaper Since 1900

8/20/96

50 Cents

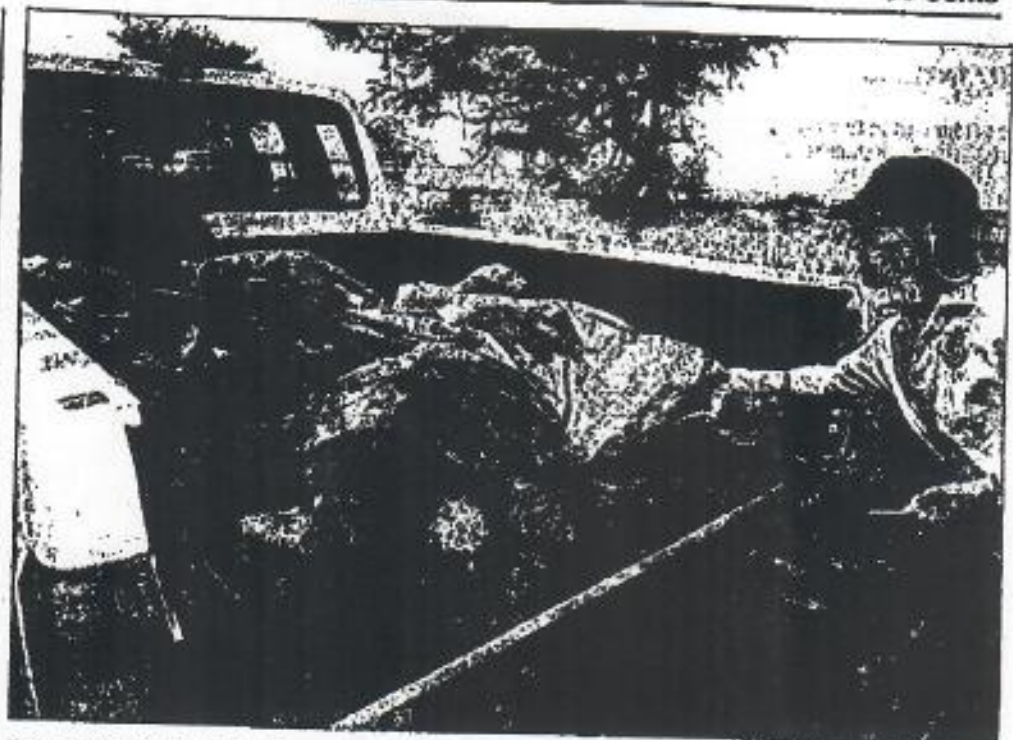
S/e ers

...ing Department of both Aridic to submit the day he accused the Plan- of concealing a Maui vice recommendation that not be made in land, not ide regional park. "quick the Planning De- ough these things," said n't appreciate it. ver Don Schneider had sentation that introduced mentioning that the com- mending two conditions lading one on parks, al- so one on the committee

...nd more than an hour de- assessment, in the end less, with what the com- mitted. lary, since the commit- had been inspired by its county's parks assessment missioners have said it is ab- encroachment in lieu of about half the value of real estate there is no provision to assessments are used to the community plan dis- spect corner. ol weas the parks impact of review and it re- discussion amounted to ircle in self-criticism. ion was deferred, and the driter was asked to see y be some way to speed housing work. also deferred action on a al Ranch for zoning to al- f the commercial core of

David Nakamura (not as the Maui lawyer with aid the ranch's develop- reapples local's residential unaloes "like a doughnut" ack waste to rebuild the

See PANEL on the next page



Kealia Pond National Wildlife Refuge Manager Kathy Smith pulls a tarp over a rare Hawksbill turtle killed when it was struck by a car on North Kihai Road Monday morning. The death poses a significant blow to the species, officials said.

Rare turtle struck, killed

Egg-bearing creature's death a blow to species

By TIMOTHY HURLEY Staff Writer

KUHAU — Less than a week after wildlife officials warned motorists to watch out for hawksbill turtles along North Kihai Road, a large egg-bearing member of the critically endangered species was struck and killed there early Monday morning.

The death represents a significant blow to a species considered extremely rare, according to officials. It has been estimated that only

a couple dozen hawksbill turtles nest in the Hawaiian Islands each year.

Police were called to the scene several hundred yards north of the Sugar Beach condominiums on North Kihai Road at 1:30 a.m. Monday and found a fatally injured hawksbill that apparently was hit by a vehicle in the road's makai lane and thrown into the makai lane.

The shell of the turtle was split down the center from the impact, and its eggs were exposed, some of them splattered on the road.

The animal, estimated to be roughly 30 years old and weighing more than 200 pounds, was dead by the time state Department of Land and Natural Resources officials arrived.

DLNR aquatic biologist Skippy Haa said he pulled more than 100 eggs from the turtle's carapace and buried them in a safe, under-

closed location in the dunes.

"We've got nothing to lose," he said.

The accident scene was less than a mile away from the spot where a similar egg-carrying hawksbill turtle was struck and killed three years ago.

"As was the case in that incident, wildlife officials said they believe the animal killed Monday was looking for a suitable nesting spot and apparently wasn't satisfied with the narrow beach and eroded dunes. Officials found meandering turtle tracks on the beach.

Kathy Smith, Kealia Pond National Wildlife Refuge manager, said that because turtles follow the moonlight, perhaps this one became disoriented by the flashing headlights on the road.

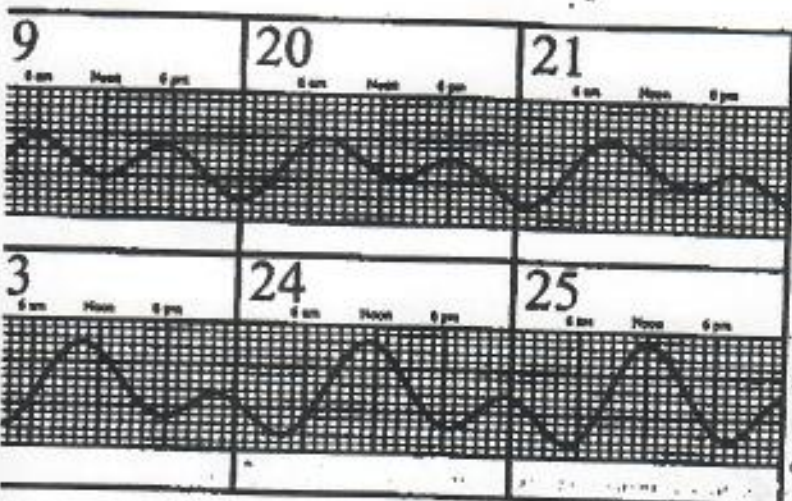
See ENDANGERED on the next page

on
m) 877-6825
headquarters.....572-7749
Information is available on NOAA



cold front
warm front
frontal remnant
high pressure center

low pressure center L
surface wind
jet stream
upper level wind



Tidal chart is aligned for Kahului Harbor. To identify the high and low tides and times for other Maui areas:

■ Hana. High, -40 minutes, +0.1 feet; Low, -17 minutes, -0.2 feet.
■ Makana. High, -1:21, -0.5 feet; Low, -1:09, -0.2 feet.
■ Maalaea. High, -1:52, -0.1 feet; Low, -1:19, -0.2 feet.
■ Lahaina. High, -1:18, -0.2 feet; Low, -1:01, -0.1 feet.

Off-Maui locations:

■ Kaunakakai. High, -1:48, -0.3 feet; Low, -1:33, -0.2 feet.
■ Kamalapa, Lanai. High, -1:55, -0.2 feet; Low, -1:44, -0.2 feet.
■ Kuhela Bay, Kahoolawe. High, -1:44, -0.2; Low, -1:32, -0.2 feet.

Edward K. Noda & Associates prepared the chart.

NATIONAL W

The AccuWeather



FRONTS:

COLD WARM STAY

H L
HIGH LOW SWIMERS

The Associated Press

Endangered, egg-bearing hawksbill turtle killed on road

Continued from Page A1

The turtle carcass was sent to a National Marine Fisheries Service laboratory in Honolulu, where a necropsy was scheduled to be conducted — the first ever on an adult hawksbill.

George Balazs, National Marine Fisheries Service zoologist and turtle expert, described the episode as tragic.

"It's beyond all probability in my mind — as rare as they are — that there would be two hit-and-runs in a couple of years," Balazs said.

The death is particularly bad news, Balazs said, because a mature adult female is vital to perpetuating the species. It represents thousands of hatchlings in a lifetime.

Smith said a U.S. Fish and Wildlife Service meeting was scheduled this week to discuss strategies to protect the hawksbill in Maalaea Bay.

Only a handful of hawksbill nests have been discovered on Maui in the last five years, all in the

Kealia area.

With volunteers searching this year, two hawksbill nests already have been found in the dunes that separate the beach from the refuge and North Kihei Road.

Two years ago a big female was able to cross the road before wildlife officials hauled the turtle back to the ocean. Last year officials installed "turtle crossing" signs on North Kihei Road to warn motorists about the turtles.

"We want everyone to be aware that the turtle signs are real," Hau said Monday.

The speed limit is 45 mph, but it's common for motorists to travel at much faster speeds.

"I've clocked guys 80 miles per hour," said refuge enforcement officer Larry Whitford.

The nesting season of the hawksbill ranges from late July to November, during which the large turtles come onshore at night to bury their eggs before heading back to sea by morning.

This year's nests represent more

evidence that the hawksbill is either continuing to establish a presence at Kealia or making a comeback. The area is not known as a traditional hawksbill nesting site.

Hawksbill nests hold more than 100 eggs, and they hatch between 50 and 70 days after laying. The babies then instinctively head for the ocean.

Turtles that live to adulthood mate two or more decades after hatching, and the females return to the beach of their hatching to lay their own eggs.

The hawksbill is characterized by a hooked, beaklike upper jaw and by two pairs of large shields on top of the head between the eyes. It is considered the most valuable of the sea turtles, and is coveted in Japan, where craftsmen use tortoise shell in jewelry, eyeglass frames and other products.

Found on the U.S. endangered species list, the hawksbill is protected by federal law with a fine of up to \$25,000 and a year in jail for killing one.

OF

Sean Asahi, 16

Sean Yoshio Asahi, 16, Molokai, died Aug. 1 at Molokai General Hospital. Friends may call Wednesday at the K Hou Church hall in Molokai, with a service. Burial of remains will be at Kapaakea Cemetery. Mortuary Inc. is assisting arrangements.

Mr. Asahi was born in Washington.

He is survived by Joyce (Mike) Bellino, Molokai, and his father (Linda) Asahi of Waikiki. His grandparents, Harold Iwane of Kamiloloa, N. Ted and Tomiko Asahi of Kauai.

Timotea Corpuz, 7

Timotea Morales Corpuz, 7, Lahaina, died Aug. 18, residence.

Visitation will be held 7 p.m. Friday at Mari Church, with Mass at 7:30 p.m. Visitation will continue at 8 p.m. at Borthwick Mc



United States Department of the Interior



FISH AND WILDLIFE SERVICE KEALIA POND NATIONAL WILDLIFE REFUGE

P.O. Box 1042
Kihei, Maui, Hawaii 96753
Tel. (808) 875-1582
Fax (808) 875-2945

MEMORANDUM

August 12, 1996

To: Files

From: Refuge Manager, Kealia Pond National Wildlife Refuge

Subject: Hawksbill Sea Turtle Nesting Attempts at Ma'alaea Bay by Refuge

Kealia Pond National Wildlife Refuge has a small but dedicated group of volunteers who are walking the beach at the head of Ma'alaea Bay on a regular basis from July - December of this year in search of hawksbill tracks and other evidence of nesting. They are covering the area from the Kealia Condominium/Sugar Beach Resort to Ma'alaea, with emphasis between the one and three mile markers of N. Kihei Road where most of the action has traditionally been. The beach is patrolled at dawn between three and seven days/week depending upon the availability of volunteers. To date volunteers have located and I have substantiated with photographs, the following nesting attempts:

7/24/96 Nesting Crawl and Body Pit Type Excavation the Evening of July 24th

Found by Kealia Pond NWR Volunteer Patrick Ryan. Located E. of the 2-mile marker and directly perpendicular from the USFWS survey marker on N. Kihei Road, this narrow section of beach is best referenced by a very large kiawe tree with branches extending out over the water. The "nests" are located just W of the small roadway and approximately 150 ft W of this tree. A very distinct crawl averaging 25" in width (between flipper marks) led 35' from the low tide line up to the toe of the sand dunes and then along the face of the dunes for more than 40' before returning to the sea. Along the way were three depressions averaging 3'x4' of disturbed sand. There was between 13' and 15' separating the three excavations. The easternmost being the most likely "nesting" attempt as it was farthest above the tide and dug deepest into the sand bank. Vegetation indicated reburial of the hole. The three excavated areas are marked with beer bottles (handy and not too obvious) inserted spout down into the dune area just mauka of excavations. The most likely nest is marked with a green beer bottle.

8/9/96 Nesting Crawl and Body Pit Type Excavation the Evening of August 9th

This nesting attempt is very close to the above and was found by Kealia Pond NWR Volunteers Gloria Adlawan and Diane Schulte. It is East of the large kiawe tree and area where the beach

has eroded to meet the roadway. Nesting area is only about 30' from the low tide line and no more than 20' from the white line of N. Kihei Road. Located in a treeless stretch of narrow dunes, this crawl led from the water to and up onto the dunes. No evidence of excavation in this area which is precariously close to the road (< 10' from toe of dune to blacktop). Turtle appears to have checked this out then headed back to the beach and along the face of the dunes for over 50'. She appeared to be checking out the bank of the dunes along the entire length of the crawl as there were disturbed areas and flipper marks on the clay/sand face of the dunes. Again three areas were more disturbed, with torn vegetation and piling of sand. These were marked using white coral placed inconspicuously on the dune just mauka of excavations.

Both of these locations will be watched carefully from day 50 to 70 post appearance. Will excavate after 70 days to see if any remains. Off road vehicles continue to be a problem on this beach. Hopefully the nests are high enough on the toe of the dunes to avoid being driven over...

Note too that a charter boat operator and diver reported seeing a hawksbill in the Molokini crater for several days around July 26. He says it had an injured front left flipper as though cut by something or wounded from a shark attack.

cc: George Balazs - NOAA, Oahu
Brooks Tamaye - Aquatic Resources, Maui
Craig Rowland - USFWS, Oahu

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The Maui M

August 14, 1996

Maui's Newspaper Since 1900

Hawksbill turtle time under way at Kealia

By **TIMOTHY HURLEY**
Staff Writer

KEALIA — It's hawksbill turtle nesting season, and motorists are being advised to keep a wary eye on North Kihel Road as they travel through Kealia Pond National Wildlife Refuge.

Already this year, two hawksbill nests have been found in the dunes that separate the beach from the refuge, the mudflats and the road. One was discovered July 24, the other on Friday.

Members of the highly endangered species have been known to lumber across the busy highway next to Maunaloa Bay, and that's why refuge officials last year installed "turtle crossing" signs to warn motorists.

Kathy Smith, Kealia Pond National Wildlife Refuge manager, said a newly formed volunteer "Dawn Patrol" has been strolling the beach nearly every day in search of hawksbill nests.

The nesting season of the hawksbill ranges from late July to November, during which the large turtles come onshore at night to bury their eggs before heading back to sea by morning.

This year's nests represent more evidence that the hawksbill is either continuing to establish a presence at Kealia or making a comeback. The area is not known as a traditional hawksbill nesting site. The discovery of nestings there has been recent: one in 1991 and the other in 1993.

Recent discoveries of hawksbill nests at Kealia have come late in the season, Smith said, and more finds are expected in the coming months now that the Dawn Patrol is on the job.

Smith said Friday's discovery came with a disturbing reminder of just how vulnerable the turtle nests are. An off-road vehicle tire track was etched in the sand no more than 2 feet from the nest, which is situated in a seemingly safe spot next to a dune.

See **HAWKSBILL TURTLE** on the next page

Taking a dive off Black Rock



Hawksbill turtle nesting season under way; be careful near Kealia

Continued from Page A1

"Driving on the beach this time of year can hinder the recovery of a highly endangered species," she said.

Federal law protects the hawksbill with a fine of up to \$25,000 and a year in jail for killing one. State law forbids driving on the beach.

Hawksbill nests hold more than 100 eggs, and they hatch between 50 and 70 days after laying. The hatchlings instinctively head toward the ocean but face many predators: rats,

birds and mongoose on the land and sharks and large fish in the sea.

Turtles that live to adulthood — the survival rate is about 1 percent — mate two or more decades after hatching, and the females return to the beach of their hatching to lay their own eggs.

If you see a turtle, its nest or tracks, don't disturb them. Note the location and report it to the state Division of Aquatic Resources at 243-5294 or the U.S. Fish and Wildlife Service at 875-1582.

Dole speaks normally

Candidate tax cut

By **TERENCE P.**
AP White House

SAN DIEGO — receives the Republican nomination tonight him the prize he has pursued for 16 years. His moment of triumph at hand Dole agonized over the speech that will propel him into the fall campaign.

Dole said at breakfast appearance that he was certain he could cut taxes and balance the budget at the same time. "We're very careful," President Clinton has ridiculed.

Invoking memory here, Dole said, "we can — as 10 years ago — to get ment out of your livelihoods." Lat

The Maui News / MATTHEW THAYER photo

Thrill-seekers through the years have made Kaanapali's Black Rock a jumping off point for flights of fancy that end with the refreshingly cool reality of the ocean's surface. Kawika Akai performed a swan dive from a high spot Tuesday while other divers waited their turn. In the background is the Sheraton Maui, where an army of construction workers scurried about in an effort to have the renovated resort ready to reopen by the November target date.



United States Department of the Interior

FISH AND WILDLIFE SERVICE
KEALIA POND NATIONAL WILDLIFE REFUGE

P.O. Box 1042
Kihei, Maui, Hawaii 96753
Tel. (808) 875-1582
Fax (808) 875-2945



August 19, 1996

MEMORANDUM

To: Files

From: Refuge Manager, Kealia Pond National Wildlife Refuge *K. Smith*

Subject: Road Kill of Hawksbill Sea Turtle on Highway 31 at Ma'alaea Bay

8/19/96 Skippy Hau of the State Division of Aquatic Resources called to report the death of a nesting Hawksbill between the two and three mile markers of N. Kihei Road (State Highway 31). Police called him around 1:20 a.m. to report the still-live animal they had pulled to the side of the road--the carapace was spilt open from head to tail. Skippy was able to salvage approx. 110 eggs which he moved across the street to the beach and buried about 6" deep in the sand at a referenced location. This large female (carapace length 96 cm by 84 cm wide) reportedly had perhaps 60 more eggs which were lost due to breakage; in addition, there was a loss of all her developing eggs visible in the body cavity.

The incident occurred in a 45-mph zone where the dunes are highly eroded (only several feet in height) and the beach is very close to and visible from the road. The impact site was approximately 100' East of the Highway 31 sign and 50' West of one of the Refuge's corner survey markers and approximately 30' from the high tide line. The State Highway black and yellow "Turtle X-ing" signs are less than 1/2 mile to the East. There were no brake/skid marks and turtle shell debris was picked up more than 50' from the impact site. No vehicle accident report was filed with the police.

The dead hawksbill's nesting crawl from the ocean started about 45' W of an orange road construction sign and 30' N of the Highway 31 sign on the opposite side of the road. The crawl meandered for over 80' through bafflegrass and beach morning glory dune vegetation and back down to the sandy beach. A possible nesting attempt in the form of disturbed vegetation at the makai toe of the dune was marked with white coral for future reference. The crawl then led back up onto the low dunes and over into the roadway. Headlights could have been a contributory factor in the turtle being on the roadway.

NOTE: Based on my measurements of the width of this nesting crawl compared with the nesting crawls of 7/24/96 and 8/9/96, I believe this dead turtle is a different individual than the one(s) nesting earlier this season. My notes from the late July and early August nests located approximately 3/4 of a mile to the West note an average track width of the crawls as 25" from outside of flipper mark to outside of flipper mark in sand, to a maximum width of 34". The tracks left by the dead turtle average 32" in width to a maximum of 40". Thus, the tracks left by the dead turtle are quite a bit larger than the tracks left by hawksbills attempting to nest farther to the West in earlier weeks.

We will continue to monitor the beach for additional nesting attempts to the extent possible with our limited pool of volunteers and constraints on staff time.

cc: George Balazs - NOAA, Oahu
Skippy Hau & Brooks Tamaye - HI Div. of Aquatic Resources, Maui
Brooks Harper - USFWS, Oahu

File - MAUI



United States Department of the Interior

FISH AND WILDLIFE SERVICE
KEALIA POND NATIONAL WILDLIFE REFUGE

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Kihei, Maui, Hawaii 96753
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Fax (808) 875-2945



6 PAGES
FAXED
8/15/96

August 15, 1996

MEMORANDUM

To: **Brooks Harper**, Project Leader, Ecological Services

From: **Kathy Smith**, Refuge Manager, Kealia Pond National Wildlife Refuge

Subject: **Hawksbill Sea Turtles Nesting at Ma'alaea Bay, Maui**

I sent Craig Rowland a copy of the attached memo a few days ago, but unfortunately I made a typo on the dates. The memo was forwarded to Karen Rosa who caught the mistaken dates and also noted that the proper routing for Maui Nui Team information was through you. I apologize for the confusion on both accounts. The attached memo has been revised to show the correct 1996 dates. I also included a copy of yesterday's Maui News front page story on the turtles.

There is growing public concern on Maui for this species. I have gotten at least five calls in the last two weeks and been approached a number of times in the field by locals and visitors asking why something isn't being done to protect the beach nesting area of an endangered species. Many would like for the landowner (A&B Properties) to block off the beach to prevent access by 4WD's and/or to put sand back in the eroded areas to prevent the turtles from winding up on the road. Note the attached copy of a letter I recently received.

The public is also becoming more aware that State law prohibits driving on the beach and they are asking why the police are not enforcing this. The police will tell you that they do not have the manpower, and that they only have one off-road/park patrol vehicle for the entire island. Note too that State and local laws do not agree on the matter of vehicles on beaches--the Maui County Code is weak on this point and allows driving on the beach if one is going picnicking, camping, fishing or swimming (only drag racing is out). The police are thus tending to follow the County Code in spite of the fact that the Hawaii Revised Statutes supersede County Code.

Let me know if you want copies of pertinent legislation or other information. If you feel we should approach the County on this, there are more details I should fill you in on. I might also note that we do have sympathetic parties within the County Administration and at State Highways. Chubby Vincens, Vice President of A&B Properties, and head of the Maui office would also be good to work with. He is up on the issue and may be feeling enough public relations pressure to want to do something. If the Recovery Branch and Law Enforcement can recommend a course of action, I'll of course be glad to help.

cc: Manager, Oahu/Maui/Molokai NWR Complex



**Kealia Pond
National Wildlife Refuge**



*U.S. Fish and Wildlife Service
P.O. Box 1042
Kihei, Maui, HI 96753
Tel: (808) 875-1582
Fax: (808) 875-2945*

FAX TRANSMISSION COVER SHEET

Fax #: 943-1290

Date: July 23, 1996

TO: George Balazs,

Zoologist/Leader of Marine Turtle Research **Pages:** 4

From: Kathy Smith, Refuge Manager

Re: Turtle Exhibits at Kealia Pond NWR, Maui

George:

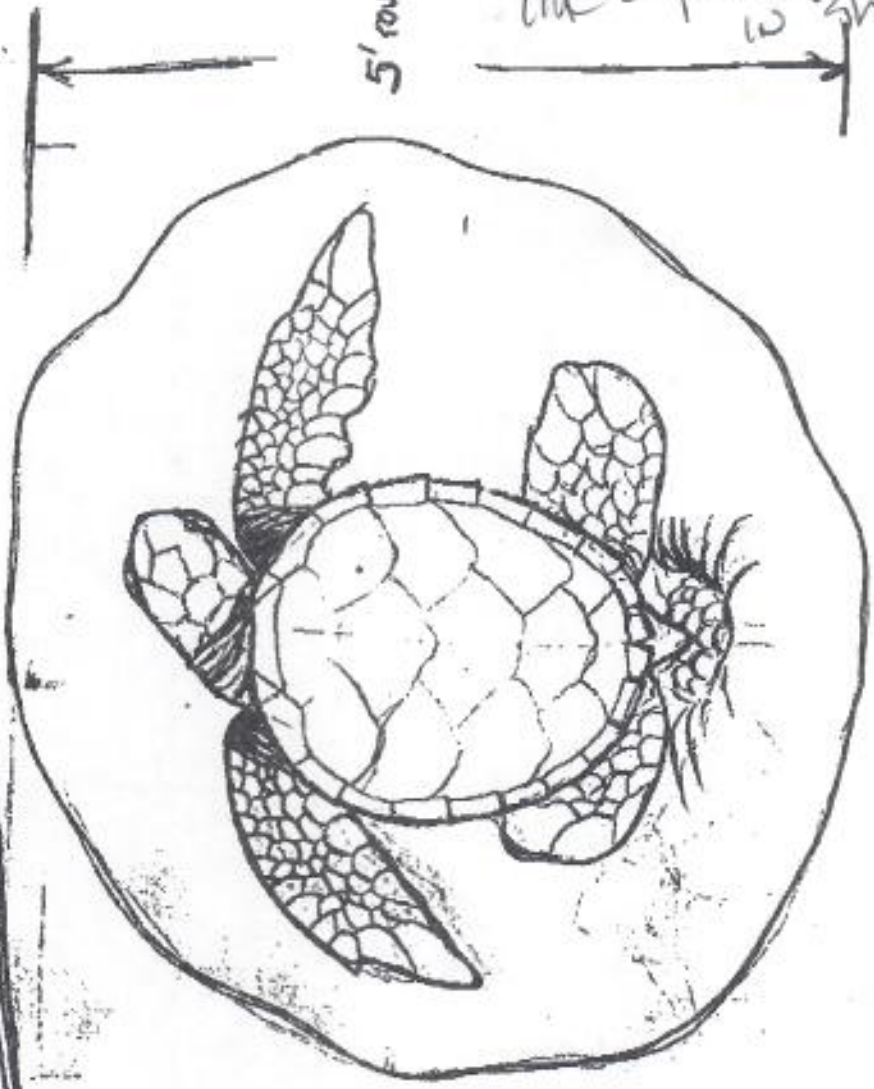
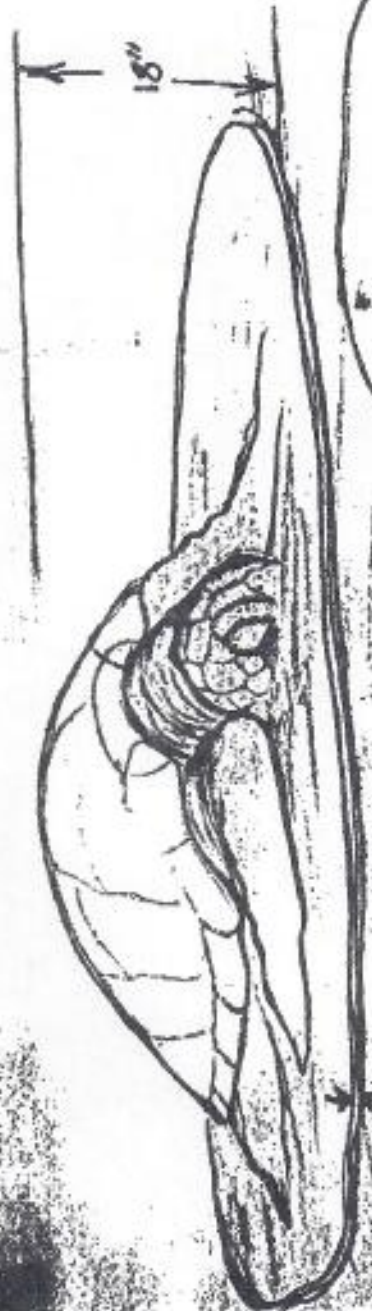
Thank you for offering to send a hawkbill slide for the Refuge to use for environmental education programs. The photo of the nesting hawkbill will also help our graphic artist develop a good display.

Attached are Conceptual Designs for two turtle panels along the planned 4400' boardwalk that will run just inside the sand dunes at Kealia. Please feel free to make suggestions on content, message . . .

Dale's sketch of a nesting female is also attached. We plan to give it center stage in the welcome area

Hope you can visit this season.

Bronze nesting Hawksbill Sea Turtle - To be Donated by
The Honu Project
and artist
Dale Zurella



Looks
like a post-hatched
w shape



Most of eggs drops below
from photo sketches.

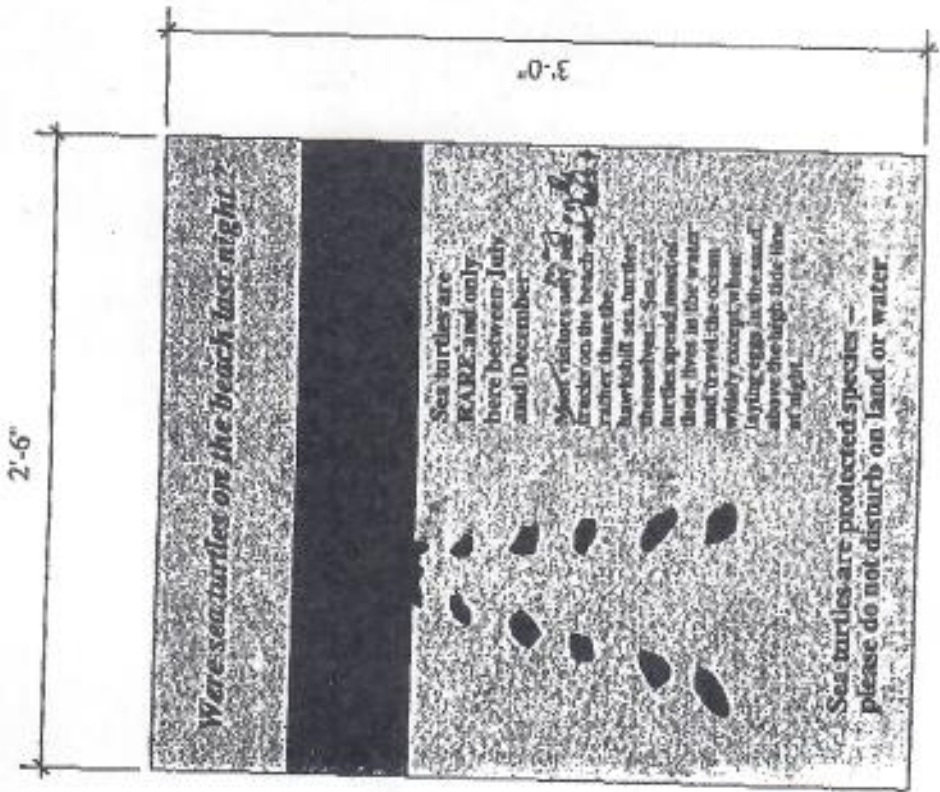
*Concept - wording yet to
Only be developed.*

Exhibit 20. Were turtles on the beach last night ?

Message Focus: The message here is quite simple. You are likely to see only tracks of sea turtles on the beach, as the turtles lay their eggs and return to the sea. ~~A + beach!~~ Occasionally you may see a turtle heading toward sea at sunrise. A caution should be given to not disturb turtles.

Graphic Emphasis: Turtle tracks are the focus here. Putting the turtle in the scene reduces the amount of explanatory text. The scene is supposed to be early morning with a turtle who got a late start!

Location: Past Kiosk C. - As visitors are just leaving walkway for return trip via beach - trail can be done as a loop in this way.



Scale 2" = 1'-0"

*Color GRAPHIC does not reproduce well - there is a turtle laying eggs here

Concept - Working yet to be only developed.

Exhibit 19. Hawksbill sea turtles dig nests at night.

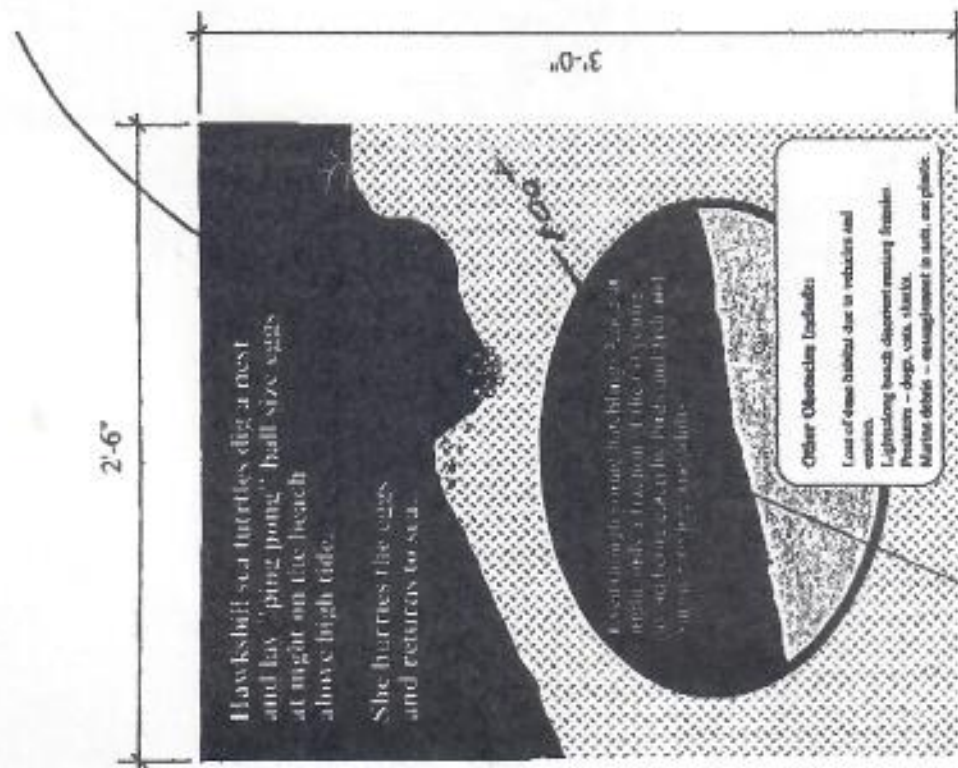
Message Focus: Even though sea turtles lay xxx eggs only a few survive to adult. They dig their nest at night and the young hatchlings usually return to the ocean at night but they are still eaten by birds and fish.

MONGOOSE

Graphic Emphasis: The main image is a beach cross section with the turtle in a 3 feet deep hole above the high tide line, at night. The bushes are the indicator that the turtle has reached the proper spot above high tide. The insert shows many small turtle hatchlings heading toward the water.

Location: At Just past Kiosk C. ??

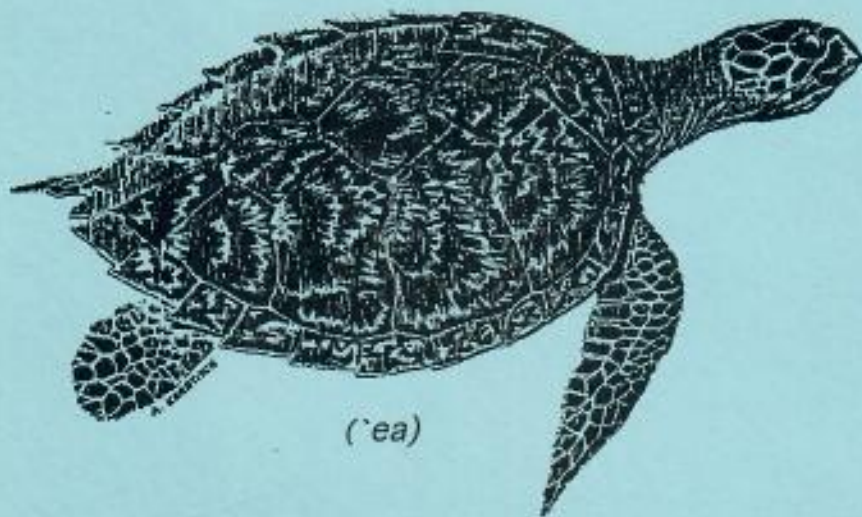
Kuehner 625596



Scale 2" : 1' 0"

Baby hawksbills shown here enroute to sea.

Help Protect the Endangered Hawksbill Sea Turtle



`Ea or hawksbill sea turtles are known to nest on only a few beaches in the main Hawaiian Islands, and one is in your neighborhood! Two nestings have been confirmed on Ma`alaea Bay beach, one in 1991 and another in 1993.

We need your help to protect these animals. If you see a sea turtle nesting site or its tracks on the beach, please do not disturb them. Make a careful note of their location and report your finding to the State or Federal fish and wildlife agency.

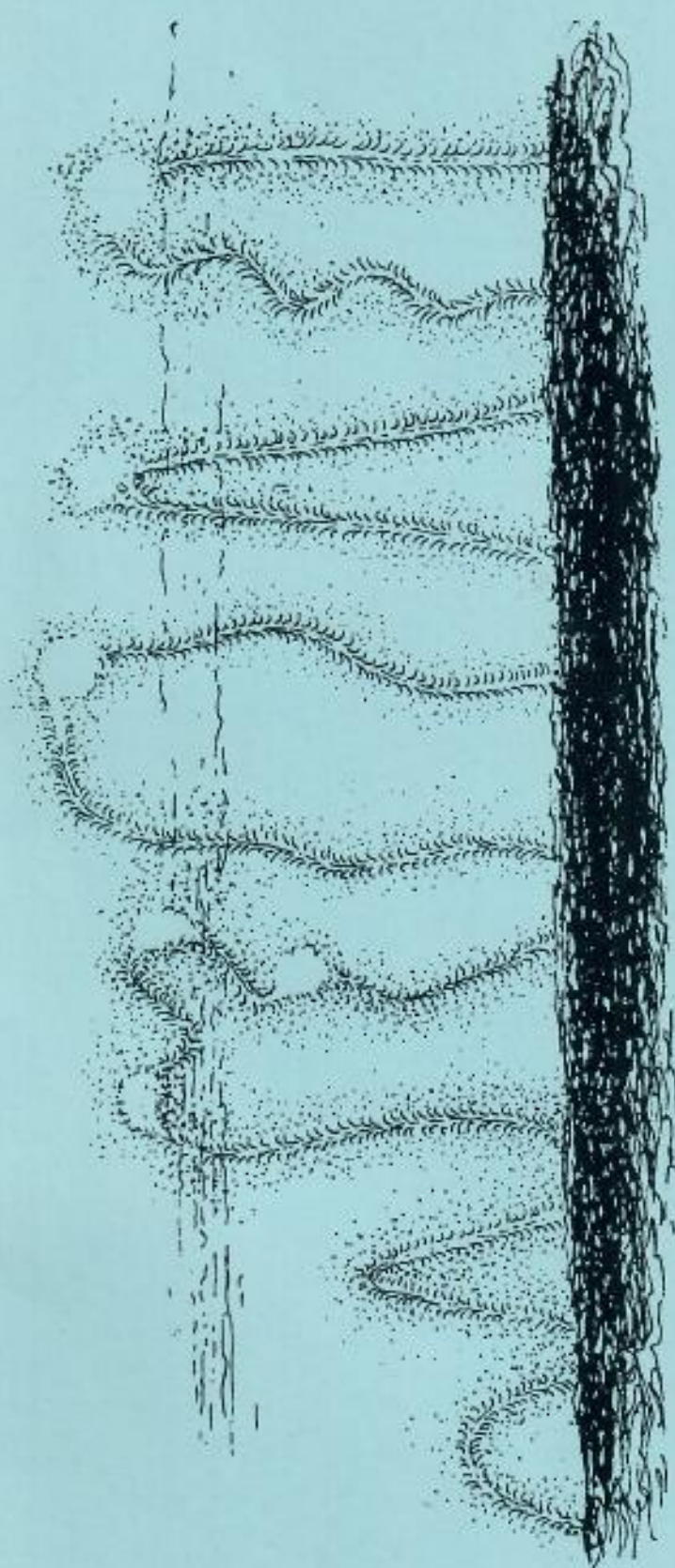


Thank you for your help!



Hawaii Department of Land
and Natural Resources
Division of Aquatic Resources
Wailuku, Maui
243-5294

U.S. Fish and Wildlife Service
Kealia Pond National
Wildlife Refuge
Kihei, Maui
875-1582



"False crawls" - a natural half-moon on the left, one made by a disturbed turtle on the right.

Tracks made by a turtle that made two false nests before nesting successfully.

Track and nest made by a turtle with virtually no wandering.

Track and nest made by a turtle with a minor amount of wandering.

Track and nest with characteristic wavy appearance.

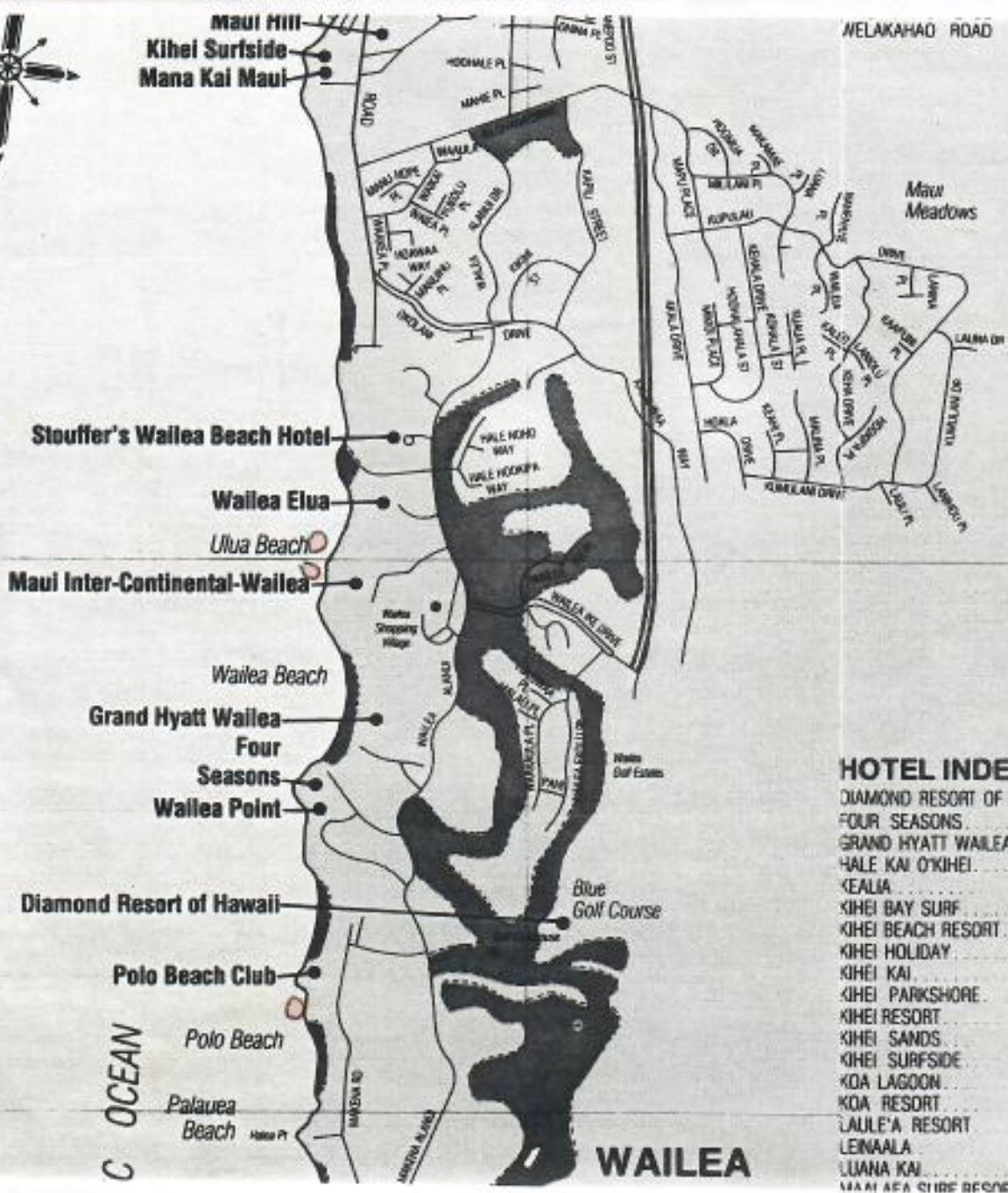
Sea turtles come ashore at night to bury their eggs, so their tracks and nesting sites may be recognizable by beachgoers at dawn. This drawing illustrates the various types of marks frequently seen on sandy beaches.



Maui Hill
Kihei Surfside
Mana Kai Maui

E

F

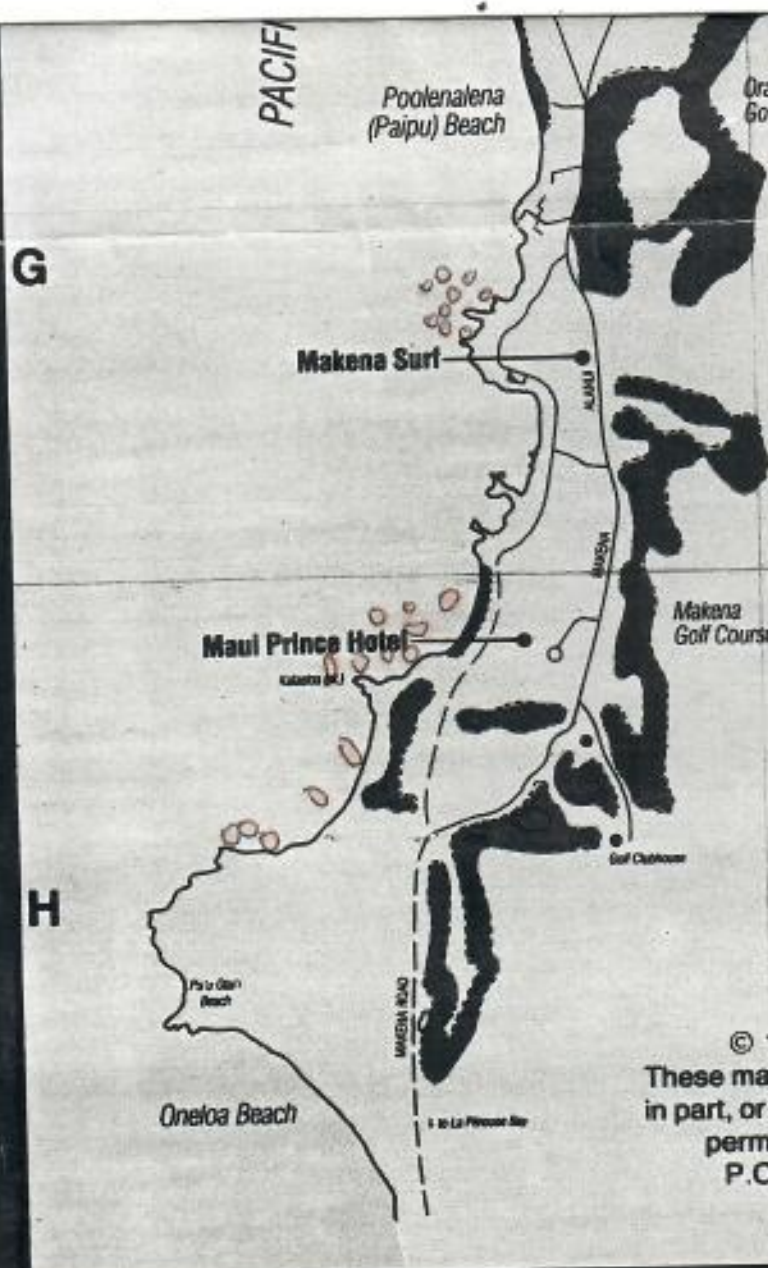


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C OCEAN

WAILEA



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(808)943-1221 • Fax: (808)943-1290

13 JUNE 95

TO: KATHY C.E. SMITH
FROM: GEORGE BALAZS
SUBJECT: SEA TURTLE SIGNS

NOTE - YOUR FAX HAD THE DATE "November 4, 1994"

THANKS FOR YOUR FAX ASKING FOR MY INPUT. I STRONGLY FAVOR SIGN "A", SINCE IT IS THE ONLY ACCURATE ONE. ONLY HAWKSBILLS ARE KNOWN TO NEST ALONG THIS COASTLINE, TO SHOW GREENS (HONU) WOULD BE IN ERROR. NOTE HAWKSBILL IS HONU'EA NOT JUST 'EA. ANY COLOR WOULD BE FINE. MY PREFERENCE IS GREEN WITH WHITE BACKGROUND, ALL IN REFLECTIVE MATERIAL. NOTE, INSTEAD OF X THE UNIVERSAL  should be used.

INSTEAD OF SHOWING CAR DRIVING BELOW HIGH ^{TIDE}, WHY NOT JUST DELETE THIS PART. IT SEEMS TO ENCOURAGE THE ACTIVITY. INSTEAD JUST SHOW CAR IN "NESTING AREA" WITH . IN ORDER TO DRIVE BELOW HIGH TIDE, ONE WOULD HAVE TO TRANSIT (UP & BACK) THE NESTING AREA. THIS IS BAD. ALSO, CARS GETTING STUCK IN WET SAND MAY SEEK DAMAGES FROM BEING ENCOURAGED TO DRIVE THERE.

I THINK THAT THE SIGNS SHOULD BE LARGER THAN 11" X 14", IF AT ALL POSSIBLE.

1995- THE YEAR OF THE SEA TURTLE IN THE PACIFIC

A SPREP Regional Marine Turtle Conservation Programme initiative



I WILL MAIL YOU A SIGN USED AT BOAT RAMP. PLEASE INSTALL SOMEWHERE, ALONG WITH OTHERS, ALONA, GEORGE

Friday, November 4, 1994

HAWAII

The Honolulu Advertiser A3



Island Briefs

Rare sea turtles cross Maui roads to lay eggs

MAALAEA, Maui —
“Turtle Crossing” signs could pop up on south Maui roads soon as the rare hawksbill sea turtles wander ashore to lay their eggs.

Maui officials have warned motorists traveling roads near Maalaea Bay at night to watch out for the endangered turtles, which have been seen crossing North Kihei Road at night.

“It can be as hazardous to the turtle as it is to the driver,” said Katherine Smith, manager of the Kealia Pond National Wildlife Refuge.

Last year a car struck and killed an egg-bearing turtle as she crossed the road. Smith said she would like to see signs alerting motorists to the turtles’ presence on the road.

Wildlife biologists estimate fewer than two dozen of the huge turtles remain in Hawaii.

The Maui News

Letters

Turtles need protection

Emergency measures need to be taken to prevent auto collisions with critically endangered hawksbill turtles trying to lay their eggs on the shores of Maalaea Bay. Just last year a nesting female was hit and crushed to death while trying to cross North Kihel Road in the dead of night. Now, in recent days, one or two more of these rare animals have had close calls on the same stretch of highway.

The immediate solution to this problem is to erect a low (2-foot) fence along the makai roadway where the danger exists. The turtles have no business crossing the road, and under no circumstances should be allowed to do so. If eggs are laid in a nest on the mauka side, the small hatching turtles that later emerge will be run over, or severely disoriented, when they try to crawl to sea.

Action urgently needs to be taken to reduce or eliminate this roadway hazard before last year's tragedy is repeated.

George H. Balazs
Honolulu
Deputy Chairman
Marine Turtle Specialist Group