

LANAI

15-20 SEPTEMBER 2002

31 JANUARY 03

21-22 AUGUST 2003

2002-2003

G. H. BALAZS

G. H. BALAZS

BALAZS 286-2899

SOON
YAI

31 JANUARY 03

- Page 19

TO Feb 3, 03 /
Friday

KAREN ARTHUR

Shandell Edmes

Bob Morris

GB

7 white Rock

3 Federation camp

DATA pages = 99-107

Glucose Summary
p. 52

10 TOTAL - NO TAG Recoveries, none with Tumors

~~21-22 AUGUST 2003~~

~~Page 21 Narrative~~

DATA Pages = 30-37

KAREN ARTHUR
Myles Roantree
Shawn Murakawa
GB

8 - White ^{Rock} STONE (2 Recap, 6 new) ^{NO}

5 Federation Camp (ALL new) ^{TUMORS}

13 TOTAL (ALL STOMACH flushed)

MALIA = 11
Shelly = 7

MIKE COE LTD

Abel R. AMARAL 247 FIFTH 559-6863
Dorothy (SOON YAI) 565-6055

			<u>Hand Swooker</u>	<u>Scoop net</u>	<u>net</u>
9/16/02	DAY 1 =	8			
9/17	DAY 2 =	14			
9/18	DAY 3 =	5			
9/19	DAY 4 =	14	12	2	∅
9/20	DAY 5 =	7	7	∅	∅
	TOTAL	48			

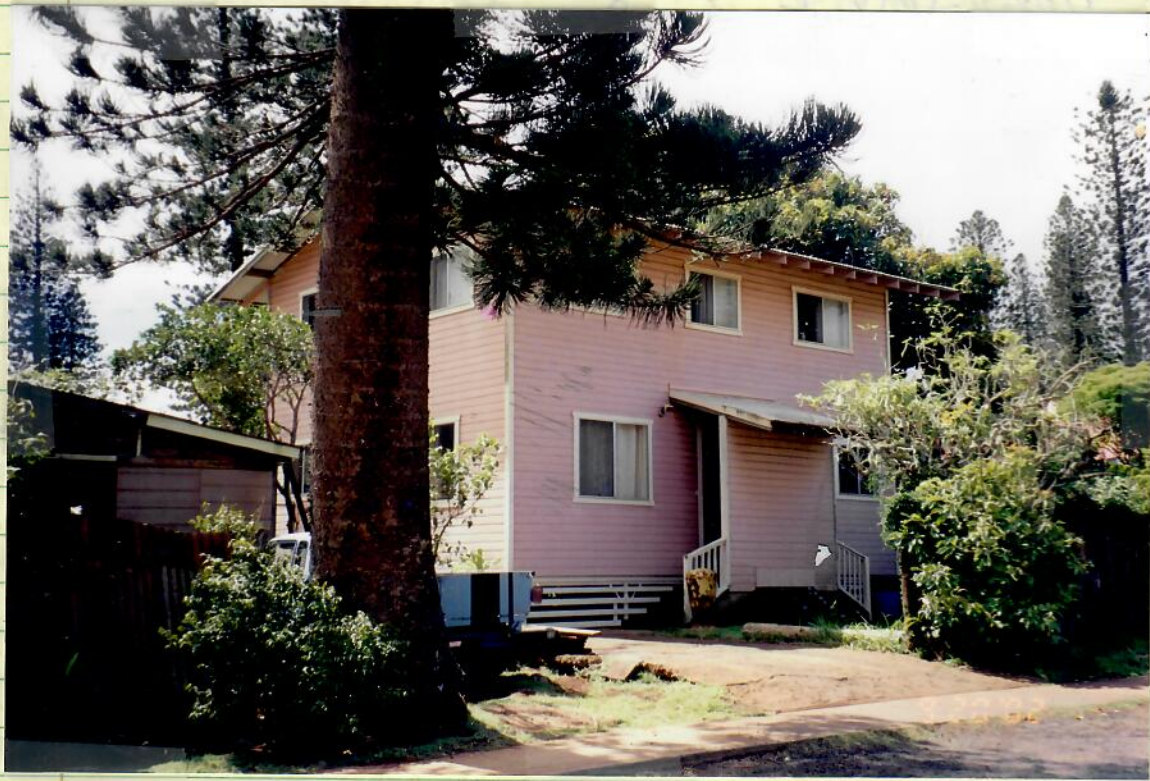
3/03 - 2/3/03
All flushed
NONE Turned
< 7 white Rock Handsworkel
3 Scoopnet Federation Camp area

2
Depart
3pm

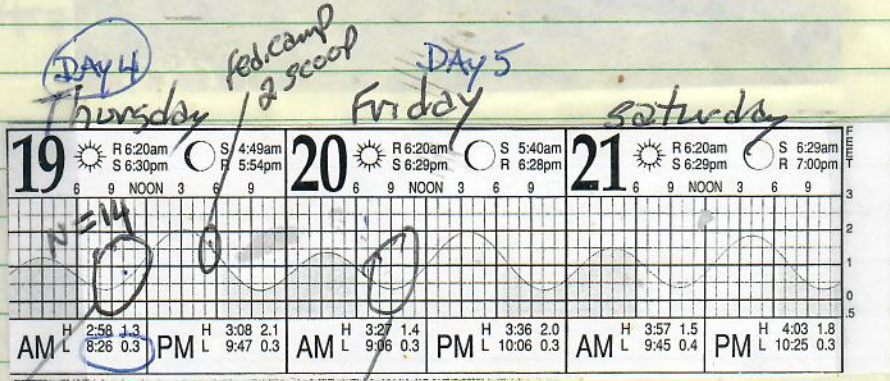
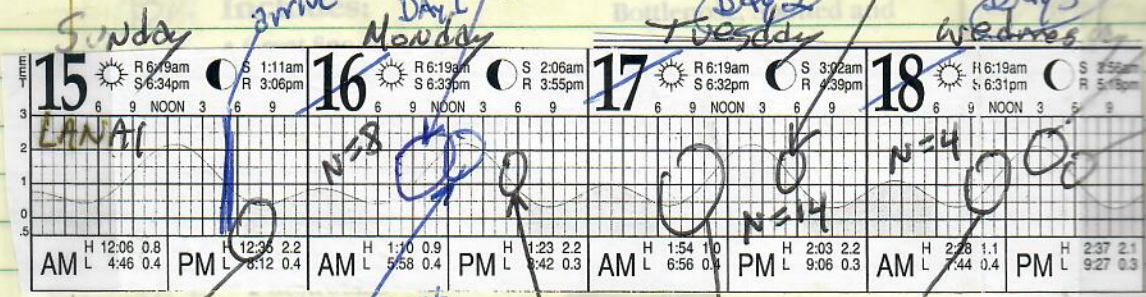
50 55
250 250
TAX TAX

#65 GAS #80 Excess Day #60 parking #4 Baggage POV mileage 40

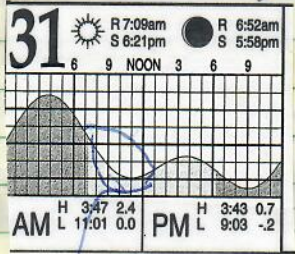
Per diem
7pm



September 2002



JAN. 2003





Awahua - $20^{\circ} 55.595'$
 $157^{\circ} 00.142'$

Polihua - $20^{\circ} 55.226'$
 $157^{\circ} 02.231'$

Liberty Ship - $20^{\circ} 55.061'$
 $156^{\circ} 59.510'$

White Rock $20^{\circ} 53.676'$
 $156^{\circ} 52.409'$

15-20 September 2002

5

Brendan Lavender Metaphisto@hotmail.com

Becky Emory becky1985@hotmail.com

Liz Evans lizevans100@hotmail.com

- Thank You!

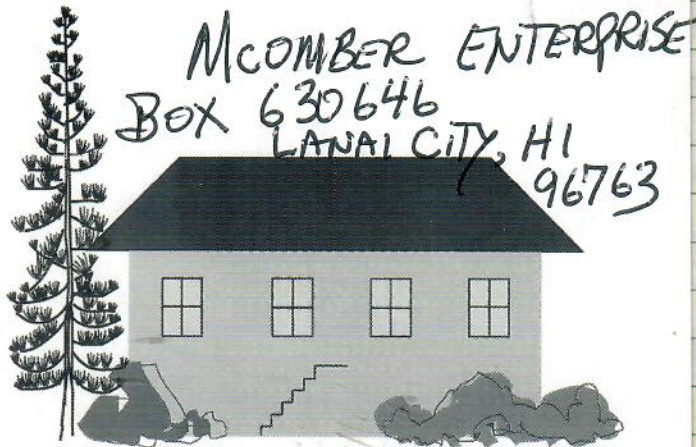
Nick Quaintance nquaintance@hpa.edu

Jill Quaintance^{CP} jquaintance@hpa.edu

ARJUN CLARRY ARJUN@HAWAII.EDU



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List of gear

LANAI

15-20 Sept 02
Sunday Friday

Flashlights; pole spears; snorkel gear (w/ belt, 2 bottles, gloves, 2 wet suits); 2 nets/mes; Cooler w/ gear; Digital camera; note book computer; Incomel TAGS/pliers; GPS; print camera; film; Tid bit logger; Nautical MAP of Lanai; Cash; Sunscreen; Towels; w/ belt; Clip + pocket for w/ belt; PIT TAGS; Tubes to collect algae; PIT TAG Scanner; 9 Volt; OMEGA Bag; Dermex; Swim pants; Electric toothbrush; shaver;

Sept 15, 02 Depart 4PM Hawaiian Air w/ Marc Rice, Liz Evans, Sunday Becky (Asheba), Brendan and Jill & Nick

Quaintance. ^{ARJIN CLAR} Via Molokai - arrive 5PM. Met by Roy Mcomber & Mike Cohelo - to 2 rental houses first night - mine at Jacaranda (near 3rd and Jacaranda). Dinner at Blue Ginver (mix plate) then drove to Federation Camp - walked along shoreline Kingston - tide low - no turtles seen. back ~ 10AM. Stayed up until midnight reading old notes, literature, on Lanai.

9/16/02
Monday

up 530 AM - breakfast at Blue Ginver - ^{break in} drove at ~ 7AM down to White Rock - Saw 2-3 turtles feeding by old iron post, foraging small boats. But they left shortly thereafter. Human presence caused this? walked to east - saw turtles feeding in several places. Wild Turkeys. Set 2 pieces 50' x 8' net outside. 2 turtles - nothing caught - turtles not seen again. Brown water - no visibility. MAC + 5 students went out toward reef to snorkel pot holes. Net left in place. 6 turtles captured - all robust no signs of tumors. Caliper not available. Drove to Federation

8
 9/16/02 Monday Camp - turtles feeding along limestone - tide almost high. Tried scoop netting - 2 caught, but probably 8+ others missed. Mark on sand near us swam up to us in the water. Returned to Laroai City ~ 3:30 PM. Moved to Rois 2 story house (pink) on Ilima street between 9th - 10th St. Spagetti dinner cooked here. Sunset ~ 6:15 pm. Went to Lushwa Boulder of Palauai Basin. Saw and photoed 02 turtle petroglyphs. TO bed ~ 8:30 PM.

DAY 2
 17 September 02 UP 5am, breakfast at House. TUESDAY 6:15am depart for White Rock, arrive ~ 7 AM low tide. ^{we} worked out to green holes - ^{we} captured turtles, brought them to shore w/ 2 inner tubes.

N = 14
 Drove to Mamele
 hotel walked
 to Sweetheart
 Island
 (vuhheie)

After 12 turtles (2 tag recoveries) we moved to Federation Camp - used ~~small~~ ^{set} net to catch 2 more turtles. Dinner at Blue Ginger ^{cafe} - talked to Ron Momba and Roy Walker. TO bed ~ 8:30 pm.

18 September 02 UP 6 AM - 7:55 AM drive to Wednesday Polihua - I drove to Polihua, Marc to Anaulua. 2.9 miles - straight line Polihua to Anaulua. Saw 3 turtles feeding at = Lot long =

From
11P

DIRECTIONS
TO Jump & Hei'ou

9/18/02 visit follows

into Airport (overnight parking - dirt to right, fence left as main, end of fence turn right, to end old pineapple, turns left ^{ON NEW 119} turn ^{FIRST} right, kava road 1/2 hour down to site, can see cliffs lighthouse can see.

9/18/02 [N 20.92608 > just after East end
Wednesday [W 157.02117

of Polihua + nesting - DRIFTS OF sand against
west end of beach (five tracks) heaved Lots of "TRACKS" ON
Lots of Brown ^{SOFT} IN sections, Road has been graded - fair good
condition but 4x4 essential. Lots of pictures Along the way.

Noon back at Town - Blue Ginger for lunch,
1 PM departed for kava - lost 2 miles
4x4 very rough. Saw ~~Hei'ou~~, Jump - pictures taken.
Hei'ou +

Returned to Laisi City - STEADY Rain. Departed
for Federating Camp - Set net parallel at
East end of beach rock - one caught +
3 with Scoop net N=4 Total for 9/18/02 Wednesday

9/19/02 up 6 AM Depart ~ 7:50 AM for White Rock.

Thursday Drove over elevated limestone mound
to ^{young brothers} containers on beach - pictures taken.
Turtles sent directly out from here. Rocks
(Smooth round) line the intertidal area making
it difficult to buy turtles on shore here.
White Rock site is ideal because of
muddy approach + shaded drive-yards
of vegetation giving nice shade to work
up turtles.

Drove back to White Rock ^{8 AM} - Tide still
dropping - 5 turtles seen on coral head
offshore - hauled out but still able to
"waddle" - crawl off. We walked/snowballed out

Dive PREZA

Thursday No others seen hauled out, I was able
9/19/02 to crawl out and get one - Marc
got another (top reef) as it swam
off. Proceeded to snorkel and catch
turtles in Green Holes; Marc saw
13 together at one site (channel).
Lots of *Lyngbya* (black and brown-wooly)
all over reef - many areas - mostly.
I've never seen anywhere in Hawaii.
12 captured hard snorkel.

Back to Laysan City ~ 12:30pm -

Back down to Federation Camp
~ 4pm. Used Scoop nets to catch
~~was~~ feeding back and forth in high tide
wave wash by limestone beach.

- Fecal Collections

Algae
ID's
needed

10 - Federation Camp ^{near} Beach Rock/Houses

10 - KAHUE POINT adjacent to Liberty
Ship wreck

10 - White Rock (near entry into water)

note I walked and counted along here ^{at} 200 yards -
counted ~ 210 pellets,

Dinner of Peter's pizza, TO Bed ~ 9pm
caught a cold-likey from Brendan (student),

9/20/02 TO White Rock - Marc and Students
Friday went out to catch turtles & stayed
at beach. 7 caught, worked
them up and went back to
town about noon. Cleaned packed
at temporary house assigned by Ron.
Departed ~ 6pm return to Honolulu.



LANAI KECAF (UKE)
09/16-09/20/02

Historical Information for Turtle Tag R968

George H. Balazs
Marine Turtle Research Program
National Marine Fisheries Service
2570 Dole Street
Honolulu, Hawaii 96822-2396
gbalazs@honlab.nmfs.hawaii.edu

Tag Information:

Tag Number	Date	Tag Type	Tag Position
11885	9/17/02	I681	LHF
424E215D42	9/17/02	PIT	RHF
4250266735	9/17/02	PIT	LHF
R968	6/2/93	I681	RFL
R988	6/2/93	I681	LFL
R989	6/2/93	I681	RHF

Date	Type of Encounter	Location	Tumor Rank	Nesting Act	Straight Carapace	Since Last Encounter			Overall			
						Interval Month	Year	Growth-Rates cm/mo	Interval Month	Year	Growth-Rates cm/mo	
6/2/93	Near Shore	Lanai, Lae Hi	0	-	47.5	---	---	---	---	---	---	---
9/17/02	Near Shore	Lanai, Lae Hi, White Rock	0	-	68.8	111.0	9.3	111.0	9.3	111.0	9.3	2.3

Historical Information for Turtle Tag R990

George H. Balazs
 Marine Turtle Research Program
 National Marine Fisheries Service
 2570 Dole Street
 Honolulu, Hawaii 96822-2396
 gbalazs@honlab.nmfs.hawaii.edu

Tag Information:

Tag Number	Date	Tag Type	Tag Position
423F446C1A	9/17/02	PIT	RHF
424F0D5853	9/17/02	PIT	LHF
R990	6/2/93	I681	RFL
R991	6/2/93	I681	LFL
R992	6/2/93	I681	LHF
R993	6/2/93	I681	RHF

Date	Type of Encounter	Location	Tumor/Rank	Nesting/Act.	Straight Carapace	Since Last Encounter			Overall			
						Interval Month	Year	Growth-Rates cm/mo	Interval Month	Year	Growth-Rates cm/mo	
6/2/93	Near Shore	Lanai, Lae Hi	0	-	55.5	---	---	---	---	---	---	---
9/17/02	Near Shore	Lanai, Lae Hi, White Rock	0	-	73.3	111.0	9.3	0.2	111.0	9.3	0.2	1.9

Historical Information for Turtle Tag R895

George H. Balazs
 Marine Turtle Research Program
 National Marine Fisheries Service
 2570 Dole Street
 Honolulu, Hawaii 96822-2396
 gbalazs@honiab.nmfs.hawaii.edu

Tag Information:

Tag Number	Date	Tag Type	Tag Position
424E0F4D04	9/19/02	PIT	LHF
424E3D7530	9/19/02	PIT	RHF
R895	6/1/93	I681	RFL
R896	6/1/93	I681	LFL
R897	6/1/93	I681	LHF
R898	6/1/93	I681	RHF

Date	Type of Encounter	Location	Tumor Rank	Nesting Act	Curved Carapace	Since Last Encounter			Overall		
						Interval	Year	Growth-Rates	Interval	Year	Growth-Rates
6/1/93	Near Shore	Lanai, Lae HI	0	-	67.5	---	---	---	---	---	---
9/18/02	Near Shore	Lanai, Lae HI, White Rock	0	-	82.5	111.0	9.3	111.0	9.3	1.6	1.6

Historical Information for Turtle Tag H867
 George H. Balazs
 Marine Turtle Research Program
 National Marine Fisheries Service
 2570 Dole Street
 Honolulu, Hawaii 96822-2396
 gbalazs@honlab.nmfs.hawaii.edu

Tag Information:

Tag Number	Date	Tag Type	Tag Position
424E20202D	9/19/02	Pit	LHF
H867	6/25/92	I681	RHF
V402	1/4/92	I681	LFL
V403	1/4/92	I681	RFL

Date	Type of Encounter	Location:	Tumor/Rank:	Nesting/Act:	Curved Carapace	Since Last Encounter			Overall			
						Interval Month	Year	Growth-Rates cm/mo	Interval Month	Year	Growth-Rates cm/mo	
1/4/92	Near Shore	Lanai, Lae Hi	0	-	74.0	---	---	---	---	---	---	---
6/25/92	Near Shore	Lanai, Lae Hi, Coral heads	0	-	75.5	5.0	0.4	0.3	5.0	0.4	0.3	3.8
9/19/02	Near Shore	Lanai, Lae Hi, White Rock	3	-	82.0	122.0	10.2	0.1	128.0	10.7	0.1	0.7

Nicknamed "Hawaii's Most Secluded Island," Lāna'i is often celebrated as the best spot in the Islands to get away from it all. And rightfully so: With a population numbering just a few thousand, there's a lot of open space to explore. Sometimes, in fact, there's *too* much open space—which is where **Trilogy Ocean Sports** on Lāna'i comes in. Operated by Maui's popular Trilogy Excursions, this new program of tours for Lāna'i-based visitors makes use of a different set of paths—i.e., waterways—to see otherwise rarely accessed portions of the island. "In the Footsteps of Royalty," for instance, provides a journey into Hawaii's past aboard the *Manele Kai*, a high-tech, jet-driven ocean raft that circumnavigates the island (about 60 miles) with stops to describe culture, history and habitat. Sites include, among others, an ancient Hawaiian fish preserve, snorkeling at Shark Fin Cove, and Chief Kahekili's Leap (more recently famous as the site of the Red Bull Cliff Diving

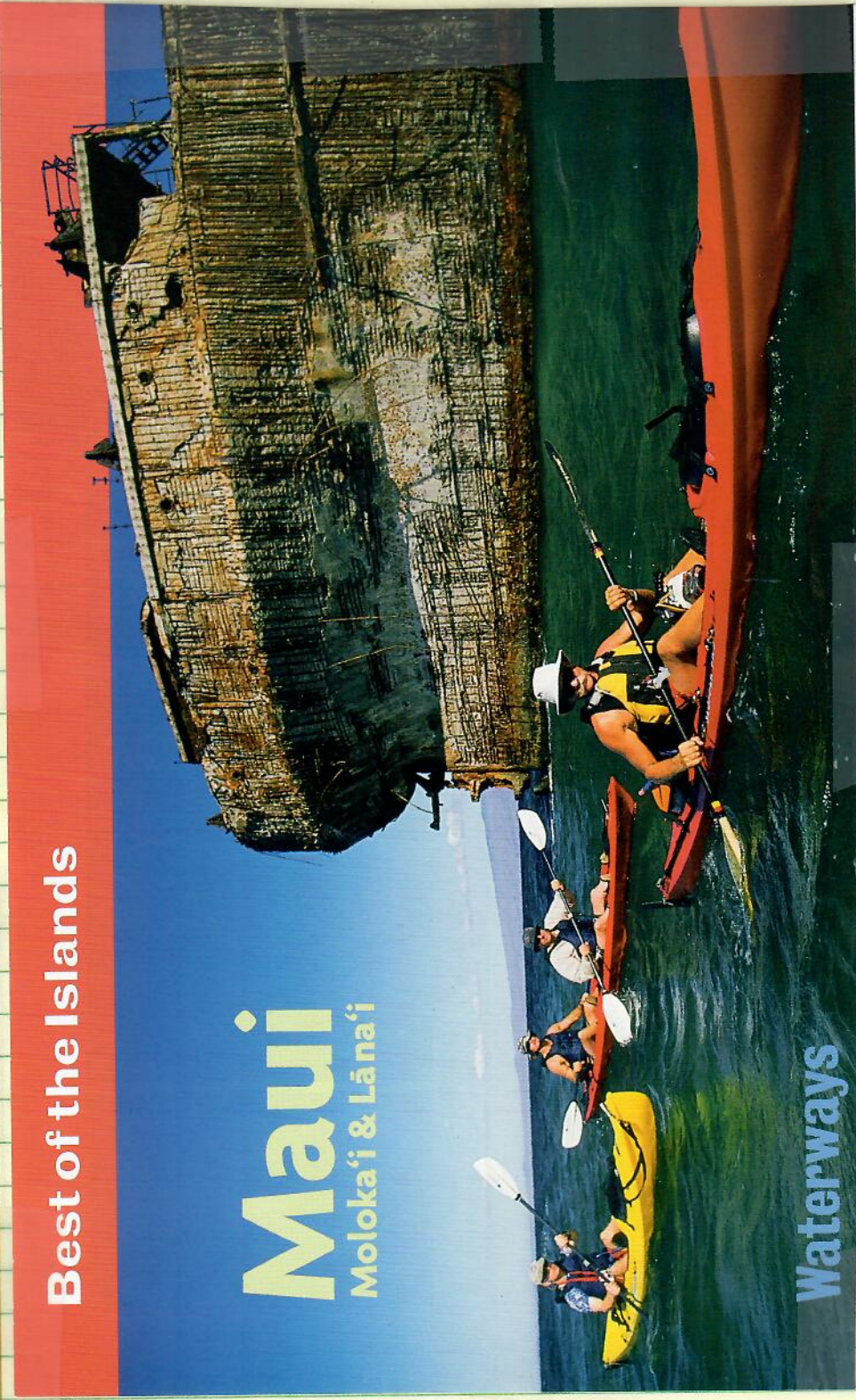
World Championship).

There's also an "Ocean Kayak Adventure," offering an up-close look at Lāna'i's complex coastal ecosystems and historical places of interest. For experienced paddlers, the "Southshore—Kahekili Ho'i" tour ventures to the site of 1,000-foot sea cliffs, sea caves and lava tubes. Meanwhile, "Northshore—Shipwreck Beach & Beyond," which explores one of the longest shelf reefs in the Islands, is a shallow-water trip ideal for any level of paddler. Call (888) 225-6284, or surf to sailtrilogy.com.

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Moloka'i & Lāna'i



Waterways

LANA'I

DAVE
LUCAS

off

White Rock
beachhead

off

Hi George!

I'm so sorry I missed you. Thanks
for visiting Mom and Dad. It
meant a lot to them. Mahalo
for the turtle book and articles.

Dear Uncle George, ^{lets keep in touch okay?}
Love, Diane

I really appreciate the wonder-
ful things that you sent us.
It was really nice of you to
think about me and Shelly.
I'll e-mail you some pictures
soon. Thanks again,
Malia Jean Preza

Dear Uncle George,

Thank you for the book.
Thank you for information on
turtles. I saw an article about
turtles in Island Scene
magazine.

With Love,
Shelly
Preza

Mr. & Mrs. Jonathan Preza

P.O. Box 631117

Lanai City, HI 96763



31 JANUARY 03
Friday

Depart Island Aie 6:40 AM
Bob Morris, Karen Arthur, Shandell Ames Gib,
Shipped 2 tubes & Scoop net prior.

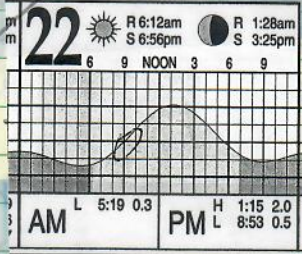
OBJECTIVES: ① Examine and Collect Cyngbya off
White Rock.

- ② Catch ^{hand} and stomach flush turtles off White Rock
③ Scoopnet and stomach flush turtles off Federation Camp

Returned 2/3/03 on last flight - 8 pm

IAVA

Aug 22 2003



Dear Uncle George,

Thank you for the book.
 Thank you for information on
 turtles. I saw an article about
 turtles in Island Scene
 magazine.

With love,
 Shelly
 Proulx

AUGUST 21, 03

Thursday 7:15 pm Departure ISLANDAIR
to LANAI w/ Shawn, Myles + Karen.

White Toyota rental truck from Pan at airport -
to 2 story pink house #38 night per person.
Blue Orchid closes at 8 pm.
Dinner at Hotel Lanai - Saw Roy Ohtomoto.

8/22/03 UP at 5:30 AM still dark.

Friday Breakfast at Blue Orchid opens at
6 AM. Drove to White Rock -
Shawn collected fecal pellets on beach -
2 tubes + Karen, and Myles out to blue holes
2 turtle resting areas offshore inside breakers.
from ~ 7 am - 10 AM. 8 turtles caught
I caught 7 of them. All worked
up on bed of truck - lots of food easily
flushed from at least 7 of them.
Lyngbya growth very high coverage -
noticed 3 colors = (green, gray black to the
right) and rare lemon-yellow color.

~ noon drove back up to town for
ice. ~ 2 pm back down to
Federation Camp. Scoop netted 5 turtles
and worked them up on beach in
shade by some shack house.

Noted Lyngbya floating in water
abundant.

Back to town ~ 5:00 pm cleared gear, checked
in at airport, ate dinner at Blue Orchid
departed 8 pm flight.

START 8/22/03 LANAI

DATE FORM FILLED OUT 08.22.03

CAPTURE DATE, LOCATION AND METHOD:

08.22.03 WHITE ROCK, LANAI

PERSON RECORDING DATA:

SKM

HANDY SNORKEL

TUMOR SCORE

0

OLD TAGS

Table with 3 columns and 3 rows for tumor and tag recording.

445266570C



443A02217C



ORAL TARS EXT:

YES OR NO

1

EMASCINATION CODE

0

STRAIGHT CARAPACE LENGTH:

71.8 cm

71.9 cm

1 cm

NOTCH LENGTH:

1 cm

0 L.O.

0 L.O.

CURVED CARAPACE LENGTH:

1 cm

76.5 cm

1 cm

HEAD WIDTH:

1 cm

32.6 cm

32.1 cm

SEX: YES OR NO OR NE

1

SEX: Male, Female or Undetermined

0

TAIL LENGTH: T

1 cm

C

SAMPLES COLLECTED:

08576

RIGHT FRONT FLIPPER WIDTH:

57.8 cm

1 cm

KA STOMACH

PLASTRON LENGTH:

1 cm

flush

WEIGHT:

710016

REPTIVE REMARKS:

NET weighed

DATE FORM FILLED OUT 08.22.03

CAPTURE DATE, LOCATION AND METHOD:

08-22-03 WHITE ROCK, LANAI

PERSON RECORDING DATA:

SKM

HANDY SNORKEL

TUMOR SCORE

0

OLD TAGS

Table with 3 columns and 3 rows for tumor and tag recording.

NEW TAGS:

08

08

08

ORAL TARS EXT:

YES OR NO

1

EMASCINATION CODE

0

STRAIGHT CARAPACE LENGTH:

40.0 cm

1 cm

NOTCH LENGTH:

39.4 cm

0 L.O.

0 L.O.

CURVED CARAPACE LENGTH:

43 cm

1 cm

HEAD WIDTH:

1 cm

15.1 cm

15.3 cm

SEX: YES OR NO OR NE

1

SEX: Male, Female or Undetermined

0

TAIL LENGTH: T

1 cm

C

SAMPLES COLLECTED:

08559

RIGHT FRONT FLIPPER WIDTH:

32.2 cm

1 cm

KA - Stomach Fls

PLASTRON LENGTH:

18 g

18 g

REPTIVE REMARKS:

old injury protrusion on snout probably broken bone

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

④

DATE FORM FILLED OUT 08/22/03

CAPTURE DATE, LOCATION AND METHOD:

WHITE ROCK,
LANAI

HAND/
SNORKEL

08-22-03

Myles

PERSON RECORDING DATA:

TUNOR SCORE

0

ORAL TAGS EXT.

YES OR NO

—

EVACUATION CODE

0

NEW TAGS:

RI LI

U

U

OLD TAGS:

—

—

—

NEW TAGS:

44516C772C

4452163061

—

STRAIGHT CARAPACE - LENGTH: 55.2 cm

WIDTH: — cm

NOTCH LENGTH: 55.5 cm

DB: 0 L.O.

CURVED CARAPACE LENGTH: — cm

HEAD WIDTH: — cm

AXIAL: 23.6 cm

LATERAL: 23.7 cm

SEX: Male, Female or Undetermined

SAMPLES COLLECTED: 08558

RIGHT FRONT FLIPPER WIDTH: — cm

FLASTRON LENGTH: 24.5 cm

WEIGHT: 54 g

DESCRIPTIVE REMARKS: sea fern in mouth

③

DATE FORM FILLED OUT 08/22/03

CAPTURE DATE, LOCATION AND METHOD:

WHITE ROCK,
LANAI

HAND/
SNORKEL

08-22-03

Myles

PERSON RECORDING DATA:

TUNOR SCORE

0

ORAL TAGS EXT.

YES OR NO

—

EVACUATION CODE

0

NEW TAGS:

—

—

OLD TAGS:

LA

LA

NEW TAGS:

443A073D46

44520A0B7A

—

STRAIGHT CARAPACE - LENGTH: 58.2 cm

WIDTH: — cm

NOTCH LENGTH: 56.1 cm

DB: 0 L.O.

CURVED CARAPACE LENGTH: — cm

HEAD WIDTH: — cm

AXIAL: 23.8 cm

LATERAL: 23.6 cm

SEX: Male, Female or Undetermined

SAMPLES COLLECTED: 08555

RIGHT FRONT FLIPPER WIDTH: — cm

FLASTRON LENGTH: 44.8 cm

WEIGHT: 62 g

DESCRIPTIVE REMARKS: sea fern in mouth

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

DATE FORM FILLED OUT

CAPTURE DATE, LOCATION AND METHOD:

8/22/03 white Hand 5
 PERSON RECORDING DATA: NY Lanai Snorkel

TUMOR SCORE: YES OR NO:

ORAL TAGS EXT:

EMACIATION CODE: MTR#

STRAIGHT CARAPACE - LENGTH: 62.6 cm

WIDTH: cm

CH LENGTH: 62.0 cm

DB: L.O.

VB: L.O.

WED CARAPACE LENGTH: cm

WIDTH: cm

AXIAL: 24.6 cm

LATERAL: 25.0 cm

SED: Male, Female or Undetermined:

RIGHT FLIPPER WIDTH: cm

PLASTRON LENGTH: 48.5 cm

WT: 73.0 g

DESCRIPTIVE REMARKS:

SAMPLES COLLECTED:
 KA-Snorkel
 Push

DATE FORM FILLED OUT

CAPTURE DATE, LOCATION AND METHOD:

8/22/03 white back Hand 6
 PERSON RECORDING DATA: NY Lanai Snorkel

TUMOR SCORE: YES OR NO:

ORAL TAGS EXT:

EMACIATION CODE: MTR#

STRAIGHT CARAPACE - LENGTH: 65.2 cm

WIDTH: cm

NOTCH LENGTH: 65.2 cm

DB: L.O.

VB: L.O.

CURVED CARAPACE LENGTH: 70.5 cm

WIDTH: cm

AXIAL: 27.5 cm

LATERAL: 27.4 cm

SED: Male, Female or Undetermined:

RIGHT FRONT FLIPPER WIDTH: cm

PLASTRON LENGTH: 53.1 cm

WEIGHT: 95 g

DESCRIPTIVE REMARKS:

SAMPLES COLLECTED:
 KA-Snorkel
 Push

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

DATE FORM FILLED OUT / /

CAPTURE DATE, LOCATION AND METHOD:

PERSON RECORDING DATA: 8/22/03 White back Lania Hand Snorkel

TUMOR SCORE: 0
 ORAL TMS EXT. YES OR NO: 425066256F
 EMACIATION CODE: 11894
 NEW TAGS: RFL, LFL

STRAIGHT CARAPACE - LENGTH: 60.9 cm
 NOTCH LENGTH: 6.2 cm
 CURVED CARAPACE LENGTH: 65 cm
 HEAD WIDTH: 22.4 cm
 YES OR NO OR NE: -
 TAIL LENGTH: T: - cm

RIGHT FRONT FLIPPER WIDTH: 47.7 cm
 FLIPPER LENGTH: 63 cm
 WEIGHT: 63 g
 DESCRIPTIVE REMARKS: Flat Plastron - Soft Sample of food

SAMPLES COLLECTED: KA - Stomach, Flush

WATER

DATE FORM FILLED OUT / /

CAPTURE DATE, LOCATION AND METHOD:

PERSON RECORDING DATA: 8/22/03 White back Lania Hand Snorkel

TUMOR SCORE: 0
 ORAL TMS EXT. YES OR NO: 425025304C
 EMACIATION CODE: 11889
 NEW TAGS: RFL, LFL

STRAIGHT CARAPACE - LENGTH: 57.8 cm
 NOTCH LENGTH: 5.8 cm
 CURVED CARAPACE LENGTH: 62.5 cm
 HEAD WIDTH: 24.6 cm
 YES OR NO OR NE: -
 TAIL LENGTH: T: - cm

RIGHT FRONT FLIPPER WIDTH: 45.6 cm
 FLIPPER LENGTH: 63 cm
 WEIGHT: 63 g
 DESCRIPTIVE REMARKS: KA - Stomach, Flush

SAMPLES COLLECTED: KA - Stomach, Flush

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

DATE FORM FILLED OUT: 10

CAPTURE DATE, LOCATION AND METHOD: LANAI

PERSON RECORDING DATA: 8/22/03 Federahan Camp Scoop Net

TUMOR SCORE: 0

ORAL TARS EXT. YES OR NO: -

EMACIATION CODE: 0

OLD TAGS: LK RR

NEW TAGS: 443A062344 4451481806

RIGHT CARAPACE LENGTH: 45.7 cm

RIGHT CARAPACE WIDTH: 18 cm

RIGHT CARAPACE LENGTH: 45.4 cm

RIGHT CARAPACE WIDTH: 18.4 cm

HEAD WIDTH: 49 cm

FLIPPER LENGTH: 18 cm

FLIPPER WIDTH: 18.4 cm

SEX: Male, Female or Undetermined: U

RIGHT FRONT FLIPPER WIDTH: 37.8 cm

PLASTRON LENGTH: 30 cm

WEIGHT: 42 g

DESCRIPTIVE REMARKS: Food in Mouth

SAMPLES COLLECTED: Q8572 KA-Stomach Flush

DATE FORM FILLED OUT: 10

CAPTURE DATE, LOCATION AND METHOD: LANAI

PERSON RECORDING DATA: 8/22/03 Federahan Camp Scoop Net

TUMOR SCORE: 0

ORAL TARS EXT. YES OR NO: -

EMACIATION CODE: 0

OLD TAGS: U RR

NEW TAGS: 4453747643 4454101F69

STRAIGHT CARAPACE LENGTH: 50.2 cm

STRAIGHT CARAPACE WIDTH: 18 cm

NOTCH LENGTH: 49.9 cm

CURVED CARAPACE LENGTH: 54.5 cm

HEAD WIDTH: 21.1 cm

FLIPPER LENGTH: 20.9 cm

FLIPPER WIDTH: 18 cm

SEX: Male, Female or Undetermined: U

RIGHT FRONT FLIPPER WIDTH: 40.9 cm

PLASTRON LENGTH: 42 g

WEIGHT: 42 g

DESCRIPTIVE REMARKS: Food in Mouth

SAMPLES COLLECTED: Q8573 KA-Stomach Flush

⑩

CANA1

DATE FORM FILLED OUT: / /

CAPTURE DATE, LOCATION AND METHOD:

PERSON RECORDING DATA: Mykes

8/22/03 Fedration Camp Scoop Net

TUMOR SCORE: 0

ORAL TAGS EXT: YES OR NO: -

EMACIATION CODE: 0

NEW TAGS: RF: LF: MF:
 4R 4R

NEW TAGS: 443A1B2153 443A236E4D

AXIAL CARAPACE - LENGTH: 54.8 cm

FLIPPER LENGTH: 54.8 cm

VENT CARAPACE LENGTH: 60.5 cm

FLIPPER WIDTH: - cm

FLIPPER YES OR NO OR NE: -

FLIPPER LENGTH: T: - cm

FLIPPER WIDTH: - cm

FLIPPER LENGTH: 42.9 cm

FLIPPER: 51

WIDTH: - cm

VB: 0 L.O.

WIDTH: - cm

AXIAL: 23.8 cm

LATERAL: 23.3 cm

SEX: Male, Female or Undetermined: 0

SAMPLES COLLECTED: KA-574 KA-Stomach Flush

DESCRIPTIVE REMARKS:

⑫

CANA1

DATE FORM FILLED OUT: / /

CAPTURE DATE, LOCATION AND METHOD:

PERSON RECORDING DATA: Mykes

8/22/03 Fedration Camp Scoop Net

TUMOR SCORE: 0

ORAL TAGS EXT: YES OR NO: -

EMACIATION CODE: 0

OLD TAGS: RF: LF: MF:
 4R 4R

OLD TAGS: 4454176677 44525C4872

STRAIGHT CARAPACE - LENGTH: 63.9 cm

NOTCH LENGTH: 63.9 cm

CURVED CARAPACE LENGTH: - cm

HEAD WIDTH: - cm

PPS: YES OR NO OR NE: -

TAIL LENGTH: T: - cm

RIGHT FRONT FLIPPER WIDTH: - cm

PLASTRON LENGTH: 52.3 cm

WEIGHT: 81 g

WIDTH: 63.9 cm

VB: 0 L.O.

WIDTH: 67 cm

AXIAL: 25 cm

LATERAL: 25.1 cm

SEX: Male, Female or Undetermined: 0

SAMPLES COLLECTED: KA-575 KA-Stomach Flush

DESCRIPTIVE REMARKS:



DATE FORM FILLED OUT / /
CAPTURE DATE, LOCATION AND METHOD:

PERSON RECORDING DATA:

TUMOR SCORE
ORAL TUMORS EXT.
YES OR NO
EMACIATION CODE
MTR

STRAIGHT CARAPACE LENGTH
NOTCH LENGTH
CURVED CARAPACE LENGTH
HEAD WIDTH
PPS: YES OR NO OR NE
TAIL LENGTH: T

WIDTH
DB
AXIAL
LATERAL
SEX: Male, Female or Undetermined
SAMPLES COLLECTED

DESCRIPTIVE REMARKS:

13 END-UHAI
8/22/03

DATE FORM FILLED OUT / /

CAPTURE DATE, LOCATION AND METHOD:

PERSON RECORDING DATA:

TUMOR SCORE
ORAL TUMORS EXT.
YES OR NO
EMACIATION CODE
MTR

STRAIGHT CARAPACE LENGTH
NOTCH LENGTH
CURVED CARAPACE LENGTH
HEAD WIDTH
PPS: YES OR NO OR NE
TAIL LENGTH: T

WIDTH
DB
AXIAL
LATERAL
SEX: Male, Female or Undetermined
SAMPLES COLLECTED

DESCRIPTIVE REMARKS:

4452270469
44522A0208

64.4
64.3
70
27.4
27

8571
KA-Somach
Push

Susp ranns white bump, lower right eye

lyng bag on acanthopora (?)
in mouth

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

CIARK (1980) "TV"

gress at Kaunapapa, the wharf becomes a popular shoreline fishing spot. The water in the harbor, which is almost invariably crystal clear, also occasionally attracts a few swimmers. Various privately owned fishing craft are moored inshore of the working area within the harbor. Adverse water conditions occur infrequently, usually during westerly or *kona* weather. Even the devastating tsunami that struck the Hawaiian Islands on April 1, 1946, was of no consequence. The rise and fall of the ocean was so gentle that the pineapple loading operations continued uninterrupted. The harbor is located at the bottom of Kaunapapa Highway.

Two and a half miles away from Kaunapapa Harbor is a well-known coastal feature of Lanai, Nānāhoa, a cluster of five sea stacks. These rocks are remnants either of the collapse of a sea arch or simply of erosion of the main island by the ocean. One of the stacks is tucked well into the shoreline and is not immediately obvious. Two of the offshore stacks stand side-by-side on the same rock island, so from a distance there appear to be only three sea stacks, grouped together, giving rise to their popular local name, Three Stone. Also known as the Needles, the pinnacles are among the best examples of sea stack rocks in Hawaii. Their Hawaiian name, Nānāhoa, is the name of a legendary man who was a symbol of sexuality. The outer rock is said to be female while the inner three are male.

The access road begins at the edge of the pineapple fields where the turnout is marked with a sign. The *makai* road, strictly for vehicles with four-wheel drive, stops half-way down the slope. A foot trail descends the rest of the distance to the boulder beach and sea cliffs inshore of Nānāhoa. The area is visited almost exclusively by shoreline or boat fishermen.

(6)

Polihua Beach

Polihua literally means "eggs (in the bosom)" and is perhaps a poetic way of expressing "egg nest." Polihua was once one of the most famous green sea turtle nesting beaches in Hawaii, and its name reflects this distinction. Green sea turtles, *honu*, are the most abundant of the two species of marine turtles native to Hawaii. Their common name comes from the color of the fat found inside their bodies. The *honu* nest on sandy

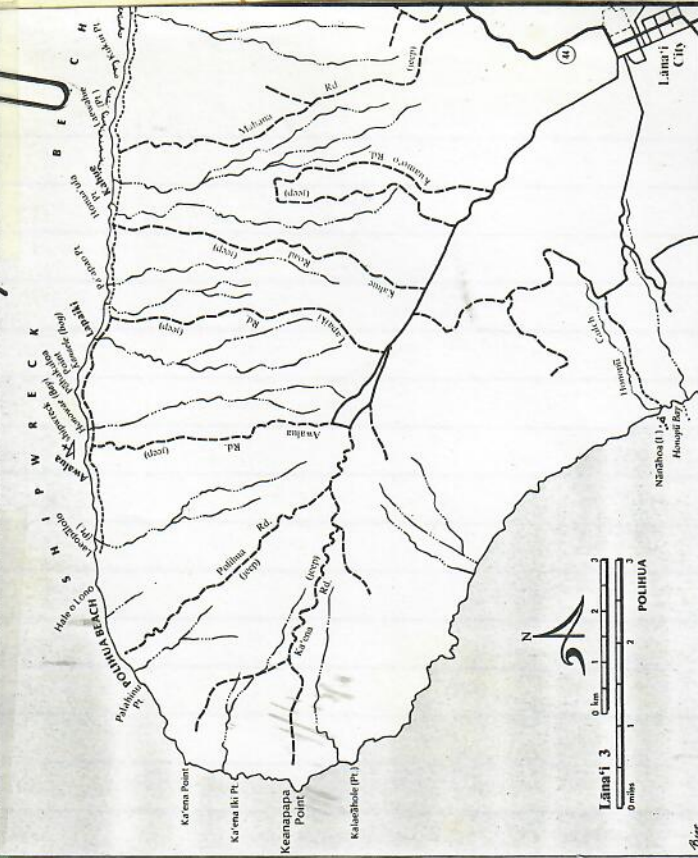
beaches, the females coming ashore at night to bury their eggs several times during the breeding season from mid-May to August. The other turtle native to Hawaii is the hawksbill, *ea*, which is easily recognized by its hawklike beak. The fame of the turtles of Polihua is noted in the following lines of an old chant:

Ua ono 'o Pele i kana i'a From the turtles of Polihua
O ka honu o Polihua

Another reference to Polihua appeared in the Hawaiian newspaper *Ka Nāpepa Kū'oko'a* in 1902. The fishing-lore writer Kahauleio noted that the Hawaiians formerly visited the beach to catch turtles if they needed meat. During the summer when the turtles came ashore at night in large numbers, they layed their eggs in the sand above the high water mark. At these times they could be easily caught, because of their sluggishness on land. One of the last known nestings of green sea turtles at Polihua was in 1954. Today the turtles are considered an endangered species and are protected by law. A ban on the taking of all sea turtles has been in effect since July 1978, when the green sea turtle was placed on the list of threatened species under provisions of the Endangered Species Act. The only exceptions are in the Trust Territory of the Pacific, where limited taking of turtles is permitted for subsistence and under special permit for scientific, zoological, and educational purposes. All turtle products that are available commercially come primarily from out-of-state commercial turtle farms. Besides being noted for its turtles, Polihua is also known as a good place to watch whales. They often pass by very close to shore.

Polihua Beach, over a mile and a half long, is the longest and widest white sand beach on Lanai. It looks directly across Kalohi Channel at Moloka'i, providing an excellent view of the entire length of the island. On a clear day Oahu can also be seen past Lā'au Point on West Moloka'i. For all of its beauty, Polihua is not frequently visited. During most of the year the trade winds blow across the beach with such intensity that they create stinging sand storms. Anyone standing out in the open is literally sand-blasted. The beach is tolerable only during mild *kona* weather or on a windless day. Another detracting factor at Polihua is its dangerous currents. The foreshore is usually steep and the sandy

Beaches of Maui County



bottom drops sharply to overhead depths. The entire beach is completely exposed to the open ocean, with no protective reef or rocky points. The prevailing current which runs from right to left is always strong and will pick up any swimmer in its path. Even during relatively calm *kona* weather there is a powerful alongshore current usually running in the opposite direction. Polihua Beach is not safe for swimming at any time of the year.

The beach is subject to seasonal changes. During the late fall the sand shifts to the right end of the beach and by winter it often reaches widths of over 350 feet. The reverse occurs during the summer, when the sand shifts to the left end. The steep foreshore is a result of the strong currents and heavy surf that often hit the beach. The debris line often reaches to the middle of the beach or even higher as the waves wash up and inland. The ac-



POLIHUA BEACH. A young early morning explorer wanders along the water's edge on the largest white sand beach on the island of Lana'i. This remote beach can be reached on land

access road down to Polihua from the edge of the pineapple fields is marked by a sign. The road is passable only for a vehicle with four-wheel drive.

One mile along the low sea cliffs to the left of Polihua is Ka'ena Point, once an exile colony for women who had committed adultery or theft. The first women were sent to this remote prison camp probably about 1830. After being convicted and sentenced in Lahaina, they were taken by schooner to Ka'ena. There they were left to eke out whatever existence they could in this barren, desolate region. One well at least provided fresh water. By 1850 the exiling practice had been discontinued and the colony was abandoned. The Ka'ena area is also important because of its many archaeological sites, including the largest *heiau* on Lana'i, at Ka'enaiki. The area

only by using a vehicle equipped with four-wheel drive. The mountains of East Moloka'i are visible across Kalohi Channel.

can be reached in a four-wheel drive vehicle by following an access road that begins near the top of Polihua Road. The turnout is marked with a sign.

(7) Shipwreck Beach

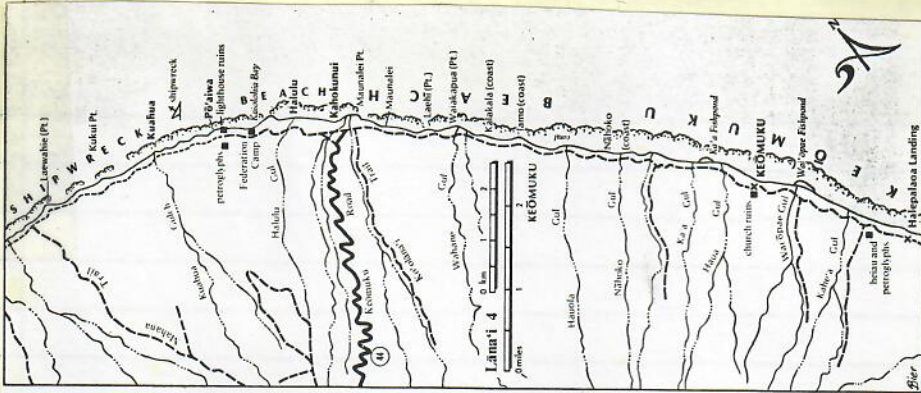
Shipwreck Beach is a name that encompasses the eight miles of shoreline stretching from Polihua Beach to Kahokunui. This long stretch of beach is littered with a vast array of floats and jetsam, although driftwood comprises the bulk of the material left onshore. The two most treasured finds for beachcombers are the hand-blown glass balls used by Japanese fishermen as floats and the rare pelagic paper nautilus shells.

The shipwrecks that gave this northern Lana'i coast-

line its popular name have been numerous. Two of the earliest recorded groundings were of the British ship *Alderman Wood* and the American ship *London* in the 1820s. Many more followed, including the *Helene*, a four-masted schooner, the *Charlotte C*, a 45-foot yawl, and the *Tradewind*, a 34-foot auxiliary. During World War II three 60-foot navy Landing Craft Mediums (LCMs) ran aground on the reef and were abandoned. Unintentional shipwrecks such as these, however, have constituted only a portion of the total number of wrecks. Many of them have been deliberate. In former years old vessels that were no longer useful were either run aground or towed offshore and allowed to drift onto the shallow reef. Such deliberate wrecks included wooden steamers from the former Inter-island Steam Navigation Company, old pineapple barges, and assorted pleasure craft.

The beach served as an isolated disposal site for the unwanted relics and allowed their destruction by the ocean without posing any hazard to navigation. The name Shipwreck Beach was a natural outcome of all this activity. Most of the local residents who frequent the beach, however, particularly the shoreline fishermen, do not use the name Shipwreck Beach. They call the various sections of the eight-mile shoreline by more specific local names, primarily the major Hawaiian shoreline names. The best-known areas are Awalua, Lapaiiki, Kahue, Yamada, Po'awa, and Federation Camp.

Shipwreck Beach, the shoreline from Polihua Beach to Kahokunui, consists of numerous stretches of narrow white sand beach alternating with points of beach rock backed by low sand dunes. The rocky offshore bottom is shallow in most places, sloping gently to the outer reef. There are occasional channels through the reef, affording shallow-draft boats access to the beaches. The currents inside the reef are usually insignificant, but during most of the year the inshore waters are murky, choppy, and cold as a result of prevailing winds, precluding snorkeling or diving. Mud and gravel are frequently washed into the ocean by heavy rains, but the water is clear on windless days or during *kona* weather. The primary activities at Shipwreck Beach are beachcombing and shoreline fishing. Walking the beach is easy, but one feature may present a problem to some people. Scattered along the entire length of Shipwreck



(8)

Keōmuku Beach

Keōmuku Beach is a name that encompasses the six miles of shoreline stretching from Kahokunui, a small cluster of beach homes near the bottom of the Keōmuku Road, to Halepalaoa, the site of an old landing just beyond the village of Keōmuku. The geographical features of this entire reach are almost unchanging. The shoreline consists of a long series of narrow black detrital sand beaches between low points of shingle and cobblestone. Offshore is a portion of one of the longest stretches of fringing reef in Hawai'i, which is more than a half mile wide in several places. The ocean bottom between the beaches and the outer edges of the reef is primarily shallow and rocky with a few scattered pockets of white sand. The water is usually murky, choppy, and cold, because of the strong prevailing trade winds. All these factors tend to discourage most swimmers and snorkelers. The area is frequented primarily by fishermen, beachcombers, and a variety of shoreline seabirds such as the *'ākekeke*, the *huna'kai*, the *kōlea*, and occasionally the *kioea*. The beach to the left of Lae Hi at Kahokunui is used as a mooring site for small shallow-draft boats. Keōmuku Beach is separated along its entire length from Keōmuku Road by shoreline vegetation, primarily *kiawe*. There are numerous access roads from the main road to the beach.

There are three well-known landmarks along the beach. The first is Lae Hi, commonly called **White Rock**, a wide limestone ridge that extends *maika* from the beach and forms a large hill over which the Keōmuku Road passes. Lae Hi means either "casing (for fish point)" or "flowing point." It is an important location in the most famous legend of Lāna'i, the story of Ka'ulū'āu. Ka'ulū'āu was the mischievous son of Kaka'alāneo, a former chief of Maui. As the boy grew older his penchant for playing pranks grew progressively worse until finally his weary parents, partly pressured by the people of Lahaina, took him to Lāna'i, where he was abandoned. Lāna'i at that time was inhabited only by ghosts who killed all human intruders. Guided by his guardian spirit, however, Ka'ulū'āu found a cave in which he secretly slept at night while the ghosts hunted for him. Eventually he managed to rid the entire island

wanie, the widest and most prominent rock point on the shoreline of Shipwreck Beach, is better known to Lāna'i residents as Yamada. Yasukichi Yamada, for whom the point is named, ran a fish market in Kahuku on O'ahu during the 1920s, but moved to Lāna'i about 1929 to work in the plantation's butcher shop. He started selling fish there about the same time. Yamada used to travel on muleback to Lae Wahie, where he had a fishing shack, and transported his catches back to Lāna'i City the same way. In 1945 he left Lāna'i for Maui and ran the restaurant in the Kahului Hotel. In 1947 Yamada opened his own restaurant, the No Ka 'O'i Inn, which is still in operation.

Shipwreck Beach is most easily accessible from the road leading to Pō'āwa. When the Keōmuku Road comes down from Lāna'i City and reaches the shoreline, the pavement ends and the unpaved road branches left and right. The right branch, the main road, continues on to Keōmuku and finally ends at Nāha. The left branch passes through Federation Camp and ends at Pō'āwa. Pō'āwa, the "ninth night," is the site of a former lighthouse as well as of some Hawaiian petroglyphs. A short walk along the beach beyond the end of the road leads to the second of the two wrecks aground on Shipwreck Beach, a concrete mud barge. The story of the appearance of this wreck in 1960 is also obscured by cloudy circumstances.

Federation Camp is located on Kaiolohia, "tranquil sea," a beautiful little bay with a crescent of white sand. The camp takes its name from the Filipino Federation of America, a religious, cultural, and social organization founded by Hilario Camino Moncado on December 25, 1925. After Moncado's death in 1956, the Lāna'i Federation, like the Federation branches on the mainland and in Honolulu, split into two groups. The main group built their camp at Kaiolohia during this period. The Lāna'i Company had made the land available on a leased basis several years earlier. The camp is still used today by Federation members.

The white sand of Shipwreck Beach ends at Kahokunui. From Kahokunui to Halepalaoa the shoreline is made up of dark detrital sand beaches. Pō'āwa, Federation Camp, and Kahokunui are all accessible in an ordinary vehicle, but the Awahua, Lapaiiki, and Kahue roads are only for vehicles with four-wheel drive.



water between the log and the beached ship, was formerly an important landing site on the island.

went aground at Awahua. The exact circumstances surrounding its sudden appearance are still somewhat of a mystery. The wreck is located directly offshore from the *makai* end of Awahua Road.

Another major section of Shipwreck Beach is Lapaiiki, "small ridge." A small, crudely built fisherman's shack and storage shed at the end of Lapaiiki Road are easily recognizable features of the area. Midway between Awahua and Lapaiiki is Pōhakuoa Point, which is marked by a navigational light. The point is so low and rounded that it is difficult to recognize it as the northern extremity of Lāna'i.

Kahue, "the gourd," is another large shoreline area. Located at the *makai* end of Kahue Road, its most outstanding feature is Lae Wahie, "firewood point." Lae

SHIPWRECK BEACH. One of the two shipwrecks still visible at Shipwreck Beach sits on the shallow reef bordering Awahua Harbor. Awahua Harbor, the large, deep section of calm

Beach are many freshwater seeps, especially in the rocky areas. These places are often marked by *limu 'ele'ele*, a seaweed that grows only where fresh and salt water mix, by occasional bird and animal tracks in the surrounding sand, and also by hundreds of bees and wasps foraging for a drink of water. Anyone allergic to insect stings should be alert to these seeps, especially on calm, windless days when access to them is easier for the insects.

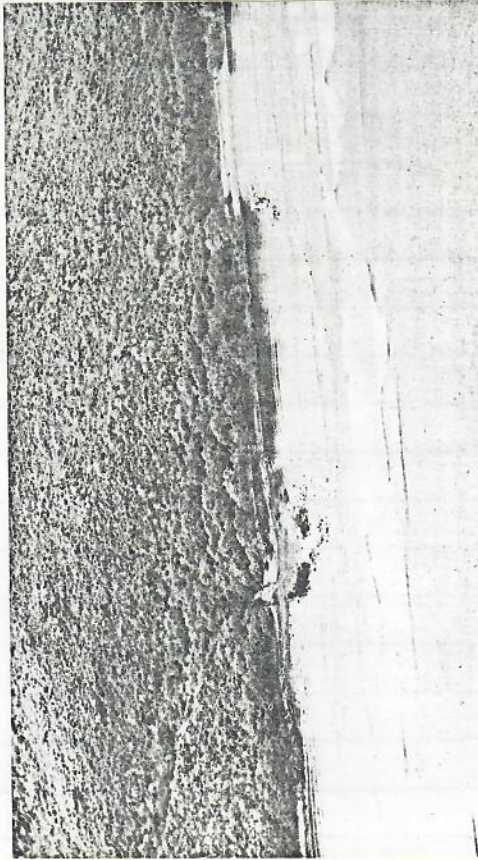
Awahua, one large section of Shipwreck Beach, means "double channel." It was once one of the major boat landings on Lāna'i, along with Halepalaoa and Mānele. Today it is probably best known as the site of one of the two wrecks still visible on Shipwreck Beach. Early in the 1950s a shipyard oil tanker was presumably under tow from the mainland to Japan when it broke loose and

of all its evil spirits, making Lana'i for the first time safe for human habitation. The cave in which Ka'ululā'au found shelter and safety was located at Lae Hi.

The other well-known landmarks on Keomuku Beach are the ruins of the two ancient fishponds of Ka'a and Wai'opae, located at the water's edge on either side of Keomuku village. Apart from their location, little is known about these two fishponds. They cannot be seen from the main road and are visible only at low tide from the beach.

Near Lae Hi, the Keomuku Road passes through Maunalei, a small cluster of beach homes situated near the shoreline of Maunalei Gulch. In his book *Stories of Lana'i* Lawrence Gay relates that Maunalei was the only place on the island where wetland taro was grown. The stream then had plenty of water to irrigate the

taro patches and flowed into the ocean continuously throughout the year, except during times of severe drought. By 1900, however, the taro operations in Maunalei had been completely abandoned. The vegetation along the face of the cliffs above the patches had by that time been totally destroyed by the thousands of wild goats and sheep running rampant on Lana'i. Landslides and falling boulders loosened by the ensuing erosion ruined the patches below and made cultivation in the gulch much too dangerous. The Maunalei water supply was eventually tapped and pumped upland to Kō'ele and later to Lana'i City when it was constructed in the 1920s. Today Maunalei continues to serve as the primary source of fresh water for Lana'i. Lawrence Gay also supplies an interesting explanation of the meaning of Maunalei, "lei mountain." He writes that at certain



KEOMUKU BEACH. On the shoreline on either side of Keomuku Village are the remains of two of Lana'i's four precontact Hawaiian fishponds. Visible in this aerial photograph is Wai'opae, the larger of the two. The pond walls are discernible only at low tide.

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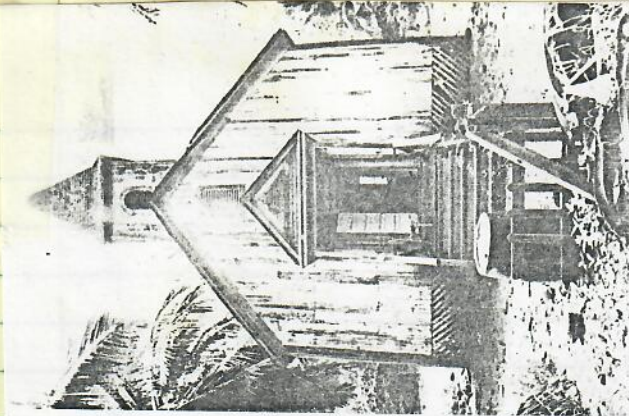
times of the year clouds drifting in from the ocean seem to form a white lei that stretches across the summit of the island. This phenomenon is best observed from a vantage point some distance from the island.

Midway between Maunalei and Keomuku is the deepest gulch on the island, Hauola Gulch, more than two thousand feet deep. Although the origin of the name Hauola, "dew (of) life," is now unknown, it is interesting to note that dew was formerly an important source of water. In *The Island of Lana'i* Kenneth Emory notes that before the destruction of vegetation on the plateau lands by the introduction of grazing animals, dew was collected from thick shrubbery by whipping the moisture into large bowls or squeezing the dripping brush tops into the vessels. Oiled *lapa* was also spread on the ground to collect the dew.

The village of Keomuku is the focal point of one of the most easily accessible historical areas on Lana'i. Keomuku has been variously translated as "the shortened sand" (the o being an abbreviated form of "one" or "sand"), "the digging stick," "the stretch of white," and finally as "the spars (of a ship)" from the alternate pronunciation and spelling, Keomoku. Keomuku was a small, unpretentious fishing village until the summer of 1899, when a major change occurred. Tabula and Frederick Hayseldon decided to try to grow sugar cane on Lana'i and selected Keomuku as their plantation site. By August 1899 sugar cane-growing operations were well underway. Over five hundred laborers, primarily Japanese, were brought in to work in the fields. In addition to the living quarters and other buildings that were erected, a pier was constructed at Halepa-lao, the only major landing in the area. A railroad was laid out from Keomuku to the landing to transport the harvested sugar cane overland. The cane was then shipped to Olowalu on Maui, where it was milled. The venture was proceeding smoothly until the plague of 1900, which began in Honolulu, reached the outer islands. The Lana'i plantation's work force was hit hard. Disaster followed disaster when the fresh water sources for irrigating the fields turned brackish. The Maunalei Sugar Company folded by March 1901.

Today Keomuku is deserted. With only a few scattered wooden houses still standing, the main building to be seen is Ka Lanakila o Ka Malamalama Church, completed in 1903 and located in the midst of the extensive

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KEOMUKU VILLAGE. Ka Lanakila o Ka Malamalama Church was built in 1903 in the now deserted village of Keomuku. The village flourished only from 1899 to 1901, when an attempt was made to establish a sugar plantation in the area. Today the church is the last structure still standing intact and is surrounded by a large coconut grove bordering both sides of Keomuku Road.

coconut grove. Directly makai of the church are the decaying remains of three large whaleboats that formerly operated out of Keomuku. Their location marks the shoreline of the ocean in 1935, when they were abandoned. Since then an almost unbelievable five hundred feet of new shore has been created by soil runoff from the mountains.

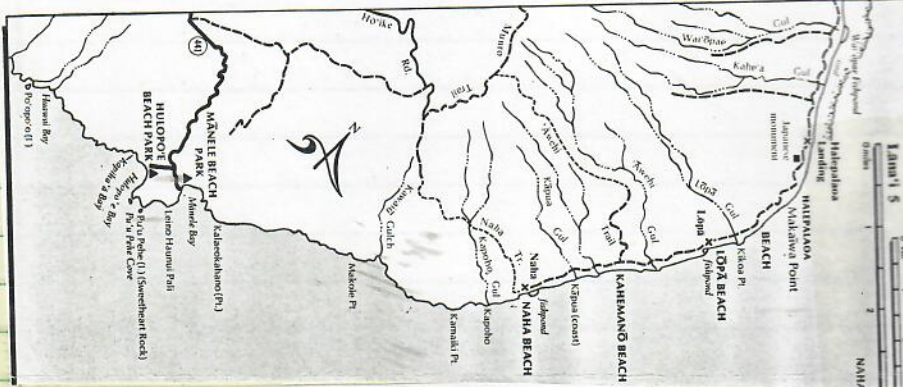
Halepalaoa Beach

Halepalaoa, also commonly called Kahlepalaoa, means either "whale house" or "whale ivory house," but how the name came to be applied to this area is now unknown. Halepalaoa is best known as the site of a former landing that was built to service the Maunaloa Sugar Plantation. On the shoreline a few of the old rock-and-concrete pilings are still visible. Just inshore of them in the *kiawe* are the ruins of a wooden warehouse built with the pier. Also in the underbrush are the remains of an old boiler and the metal frames of several railroad handcars. The carts were used to transport sugar cane and supplies to and from the end of the pier. *Maka* of the landing, across the road, a short trail leads to an old abandoned locomotive with its tender that was used to haul cane from the Keomuku fields to Halepalaoa. The locomotive first belonged to the Hawaiian Commercial and Sugar Company on Maui and arrived on that island in 1883. It was shipped to Lana'i in 1899 and then abandoned in 1901. Its name may have been the Waiahole.

A short distance farther down the road toward Naha is another reminder of the former sugar venture, a large stone monument with an inscription in Japanese. It is a memorial to the many Japanese plantation workers who died at Keomuku during the plague of 1900. The Buddhist community of Lana'i holds commemorative services there once a year.

The site of the Halepalaoa Landing is the dividing point on the shoreline between the dark detrital sand beach of Keomuku and the white sand beach of Halepalaoa. About a mile long, Halepalaoa Beach winds around and beyond Makaiwa Point. It is one of the nicest beaches on the northeastern side of the island. To the rear of the right half of the beach are sand dunes covered with *kiawe* and lanтана. The beach ends at Kikoa Point where the ocean has eroded these dunes, undermining the *kiawe* trees and exposing beach rock. The fallen trees block easy passage along the shoreline.

Halepalaoa Beach provides fair swimming, mostly at high tide. There are scattered pockets of sand in the primarily shallow and rocky bottom. Swimming is safe inside the reef, but the water is often murky. The area is



frequented by fishermen. The most convenient access to the beach is the short trail to the old Halepalaoa Landing. Except for private estate to the right of the landing, the entire backshore of Halepalaoa Beach toward Naha is a dense entanglement of *kiawe* and lanтана with only a few narrow animal trails leading from Keomuku Road to the shoreline. A jeep trail goes out to Kikoa Point at the end of the beach.

(10)
Lōpā Beach

Lōpā means "tenant farmer," but the origin of the name as applied to this former village site is now un-

known. The name is also pronounced and spelled Lopa'a, as on Brown and Mansarrat's 1878 government survey map of Lana'i. The most outstanding feature at Lōpā is its fishpond, sometimes called Loko Lōpā. In *The Island of Lana'i*, the results of an archaeological survey carried out in 1920-1921, Kenneth Emory offers this information:

Fish ponds or traps are found only on the east coast where the fringing reef is far from shore. I have seen only one true fishpond. The west point of Lōpā beach has been bridged to the shore by a sea wall 217 feet long forming a fishpond above sea level but fed by the wash of waves at high tide and by the seepage of brackish water.



LŌPĀ BEACH. Small surf breaks on the shallow reef fronting the rocky point at Lōpā. The two low concrete rock walls in the foreground are the crumbling remains of the *mākāhā* or sluice gate that once connected Lōpā fishpond with the ocean.

The pond has been designated as a bird sanctuary to accommodate some of the many shoreline birds that frequent the beaches from Polihua to Naha.

prominent offshore reef (Fig. 17). The main highway between Lahaina and Kahului passes through here. The ruins of a former sugar mill and wharf facility exist near the northern end of the reef. The nearshore area of the Olowalu reef on the east side of Hekili Point is easily assessable from shore and is a popular place for skin divers and beginning scuba divers. Both Thorne and Zitnik (1984) and Church and Church (1985) mention that turtles are among the marine life seen there.

In the past, large turtles were reported to have been commercially captured by scuba diving at the 15-18 m drop-off along the seaward edge of the Olowalu reef. One local resident, who was involved in this fishery, said that many turtles previously occurred along here. Capture methods while diving included the use of a noose and gaff to restrain and haul turtles to the surface, or a bangstick (underwater firearm) to dispatch them. However, long before the availability of scuba in the Hawaiian Islands, "several tons" of turtle were being caught each day for the Honolulu market by resident Japanese fishermen using large nets and diving along Maui's southwest coast (Anon. 1918).

Scuba surveys were made on 8 May 1985 on the west side of Olowalu reef, starting in water 6 m deep and proceeding out and along the 15-18 m contour line. Only one turtle was seen during 3 man-hours of diving. It was estimated to be 45-55 cm and, when first sighted, was resting on the bottom on a mound of coral debris.

A major feature of the reef to the southeast of Olowalu wharf (Fig. 17) was the scarcity of live coral. Many canyons consisting of sand channels and calcareous ridges were present. However, the dominant Porites spp. corals were mostly dead and fractured. There were very few places in which the structural relief had not collapsed and ruined the undercuts and ledges favored by turtles for resting. This damage had likely resulted from a large storm, possibly Hurricane Iwa in November 1982. Virtually the only alga seen in this area was Liagora papenfussi, which is not a known food source for turtles.

The region directly south and to the east of the wharf consisted mainly of hard, smooth bottom having a moderate seaward slope and no discrete drop-off. Spyridia filamentosa was commonly growing on the bottom at depths of 11-14 m.

Keomuku, Lanai

Keomuku is the name of a deserted village and coastal area located at lat. 20°51'N, long. 156°50'W on the northeast side of Lanai (Fig. 18). A sugarcane plantation was started there in 1899, but was abandoned 2 years later due to a plague epidemic and freshwater irrigation wells that turned brackish. The only land access to the area is by dirt road in a four-wheel drive vehicle traveling 20 km from Lanai City, located in the center of the island. Nearly all of the island's 2,500 inhabitants live in Lanai City where a pineapple plantation has been centered since the 1920's.

The shoreline at Keomuku consists of a narrow terrigenous sand beach backed by thick kiawe and mountain slopes. A shallow and mostly silt-laden reef flat 400-800 m wide borders the region and extends almost continuously for 22 km from Halepalaoa through Keomuku to Polihua on the island's north-west shore (Figs. 18, 19, and 20). According to Clark (1980), 150 m of new land has accrued in front of the old village since 1935 due to soil runoff from the severe erosion affecting much of the island. The remains of two Hawaiian fishponds (Waiopae and Kaa Ponds) are located near here.

During the 1960's and early 1970's turtles were intensively captured off the Keomuku reef by commercial fishermen from Maui. The Auau Channel, which separates Lanai from Maui by only 13 km, is substantially protected from strong tradewinds and therefore usually calm enough to cross in a small boat. Most of Lanai's remote coastal waters along the east and south shores are accessible by this route. In addition, when the tradewinds are absent, the reefs off the entire remote northern coast of Lanai are also accessible by boat from Maui as well as Molokai. The methods used to catch turtles off Keomuku in the past consisted of scuba diving with a noose, gaff, or powerhead. Most of the turtles taken here were sold to restaurants on Maui and Oahu that catered to the tourist trade.

Keomuku is currently a popular destination for dive charters originating from across the channel at Lahaina. Turtles play a prominent role in some of these tours with dive shops naming and advertising such sites as "Turtle Heaven" and "Turtle Town" (Church and Church 1985). Reports have been made by dive shop personnel of up to 30 turtles (mostly small ones) being seen at certain locations during a 40-50 min scuba dive. Descriptions of the turtles' behavior suggest that cleaning stations may be involved in some of these sightings. At Halepalaoa, the southern limit of Keomuku and former sugar plantation landing, the entrance channel has recently been cleared of coral heads and a small pier constructed for tourists to go ashore.

The seaward edge of the fringing reef along Keomuku was examined by scuba and skin diving on 4 and 6 May 1985 using a Zodiac to reach the area from Maui. No surveys were made inshore on the shallow reef flat. Along the section of fringing reef designated as Turtle Heaven fronting the old village (Fig. 18), seven turtles were seen and three others captured during 4 man-hours of scuba diving (Table 28). The seawater temperature was 25°C. All size classes appeared to be represented in the sample of 10 turtles. The largest turtle captured was 76 cm, but a larger one believed to be >82 cm was seen near the bottom of the drop-off at 18 m.

The three turtles captured were resting under outcroppings of live coral in narrow sand channels 2-4 m wide which descend rapidly from the outer reef edge to the drop-off. Many such channels exist along here with coral outcroppings of Montipora dilitota. The preferred resting sites appeared to be between 8 and 13 m deep. A high percentage of live coral cover and structural relief occur throughout this entire zone. However, at the base of the drop-off the bottom consists of featureless rubble and sand.

A fourth turtle (52 cm) was captured and five others seen, all 45-55 cm, while skin diving in water 6 m deep just north of Halepalaoa where the fringing reef starts. One turtle was swimming slowly in a school of several dozen surgeonfish, A. sandvicensus, but no cleaning symbiosis was evident.

Stomach samples taken from two turtles were comprised almost entirely of Amansia (Table 29). Five other species of algae, including Acanthopora, occurred in only trace amounts.

Two 39 cm turtles were found washed ashore at Keomuku at about the same time the diving surveys were conducted. One was dead and the other was barely alive but died the following day. The turtles were shipped frozen to Honolulu by personnel of the State of Hawaii Division of Conservation and Resources Enforcement. A necropsy examination was subsequently conducted, but the cause of death could not be determined. One turtle had been feeding almost entirely on Acanthopora (Table 29). The stomach of the other turtle contained numerous partially digested pieces of the filefish, Pervagor spilosoma. In contrast, this same turtle's intestines were filled with Amansia but only had small amounts of fish bones. Large numbers of P. spilosoma occur cyclically in Hawaiian waters, often accompanied by mass die-offs and many fish washing ashore. During the present study P. spilosoma was commonly seen while scuba diving. In spite of their herbivorous nature in benthic habitat, green turtles, especially small ones, will feed on animal material if it becomes readily available. This undoubtedly happened in the case at Keomuku, although it is unknown if the ingestion of filefish was related to the turtle's death.

The only algal food source located along the outer slope of the fringing reef was Amansia. In front of the old village it was present in abundance growing mostly in shaded crevices 4-6 m deep. Many of these plants were covered with a fine layer of silt.

Kuahua, Lanai

Kuahua is a small point of land on the wind swept northern coast of Lanai at lat. 20°55'N, long. 156°55'W along what is known as Shipwreck Beach (Fig. 19). The fringing reef here extends for up to 500 m from shore and is a continuation of the one bordering Keomuku. The shoreline is characterized by outcroppings of basalt and limestone, terrigenous sand beaches, and kiawe. As the name Shipwreck Beach implies, numerous vessels have grounded in the vicinity dating back to the 1820's. Clark (1980) reports that, in addition to maritime accidents, many of these wrecks resulted from the deliberate disposal of unwanted vessels. Another source of this coastal debris comes from high seas flotsam being funneled towards northern Lanai by currents and strong tradewinds passing through the narrow Pailolo Channel which separates Maui and Molokai (Fig. 19). This same pathway may also play an important role in transporting pelagic turtles into the coastal benthic habitats of northern and eastern Lanai and the south shore of Molokai.

Table 1.--Continued.

Date 1985	No. of personnel	Activity	No. of turtles captured (when attempted)	
			Total	Recoveries
<u>Maliko Bay, Maui</u>				
12 Apr.	2	Diurnal skin diving survey from shore.	--	--
3 May	3	Diurnal scuba survey from an inflatable boat to a depth of 19.8 m (65 ft) involving 1.5 man-hours of bottom time.	--	--
<u>Olowalu, Maui</u>				
8 May	3	Diurnal scuba surveys from an inflatable boat to a depth of 15.2 m (50 ft) involving 3 man-hours of bottom time.	--	--
<u>Keomuku, Lanai</u>				
4 May	3	Diurnal scuba surveys from an inflatable boat to a depth of 18.3 m (60 ft) involving 3 man-hours of bottom time. Skin diving surveys. Stomach sample collected. Ocean access from Maui.	1	0
6 May	3	Diurnal scuba surveys from an inflatable boat to a depth of 16.8 m (55 ft) involving 4 man-hours of bottom time. Skin diving surveys. Stomach sample collected. Ocean access from Maui.	3	0
		Subtotal	4	0
<u>Kuahua, Lanai</u>				
10-12 July	2	Diurnal skin diving surveys. Observational studies, census and hand capture of turtles foraging at the shoreline. Stomach samples collected.	2	0

51

Table 1.--Continued.

Date 1985	No. of personnel	Activity	No. of turtles captured (when attempted)	
			Total	Recoveries
<u>Polihua, Lanai</u>				
<u>8-10 July</u>	2	Nocturnal surveys of a mile-long sand beach to determine level of nesting activity. Diurnal observational surveys of coastal waters.	--	--
		Total	195	13

81

Table 28.--Biometrics of green turtles sampled at Lanai and Maunalua Bay, Oahu.

Tag No.	Carapace length		Carapace width		Plastron length (cm)	Tail length (cm)	Head width (cm)	Front flipper width (cm)
	Straight (cm)	Curved (cm)	Straight (cm)	Curved (cm)				
<u>Keomuku, Lanai</u>								
7259-60	52.1	56.0	41.2	49.0	41.1	10.0	7.8	8.7
7264-66	62.3	66.0	48.7	59.5	50.8	11.0	6.3	9.7
7267-69	65.8	69.5	51.9	64.0	52.7	13.5	9.5	10.6
7261-63	75.8	81.5	57.3	76.0	61.3	15.0	10.3	12.3
<u>Kushua, Lanai</u>								
8514-15	--	47.0	--	43.7	37.5	--	--	--
8516-18	--	72.5	--	66.0	57.0	--	--	--
<u>Maunalua Bay, Oahu</u>								
725/-58	39.2	40.1	34.8	40.0	31.1	7.0	6.3	6.2
7273-74	41.7	43.7	34.5	40.5	34.3	7.0	6.6	7.1
8451-52, 7275	62.2	66.5	49.2	61.5	49.8	13.0	9.6	10.4

Table 29.--Identification of stomach contents sampled from green turtles at Lanai and Maunalua Bay, Oahu.

Tag No.	Straight carapace length (cm)	Sample contents (%) T = trace		
Waiopae, Lanai (natural mortality on 28 April 1985)	38.9	<u>Acanthophora spicifera</u> 99		
		<u>Codium edule</u> 1		
		<u>G. arabicum</u> T		
		<u>Chondrococcus hornemanni</u> T		
Halepalaoa, Lanai (natural mortality on 4 May '85)	38.9	Stomach contents		
		Filefish bones 99		
		<u>Amansia glomerata</u> 1		
		<u>Acanthophora spicifera</u> T		
		Intestinal contents		
		<u>Amansia glomerata</u> 99		
		<u>Codium edule</u> 1		
		<u>Acanthophora spicifera</u> T		
		<u>Dictyosphaeria versluysii</u> T		
		Fish bones		
Keomuku, Lanai	52.1	<u>Amansia glomerata</u> 99		
		<u>Jania capillacea</u> T		
7259-60	52.1	<u>Acanthophora spicifera</u> T		
		<u>Ceramium sp.</u> T		
		7267-69	65.8	<u>Amansia glomerata</u> 99
				<u>Hypnea cervicornis</u> T
				<u>Jania capillacea</u> T
<u>Sargassum polyphyllum</u> T				
Amphipods				
Copepods				
Kuahua, Lanai	147.0	<u>Acanthophora spicifera</u> 90		
		<u>Hypnea musciformis</u> 10		
8514-15	147.0	<u>Griffithsia sp.</u> T		
		<u>Ulva fasciata</u> T		
		8516-18	172.5	<u>A. spicifera</u> 90
				<u>Hypnea musciformis</u> 5
<u>Ulva fasciata</u> 5				
Maunalua Bay, Oahu	39.2	<u>Codium edule</u> 67		
		<u>G. arabicum</u> 33		

¹Curved length.

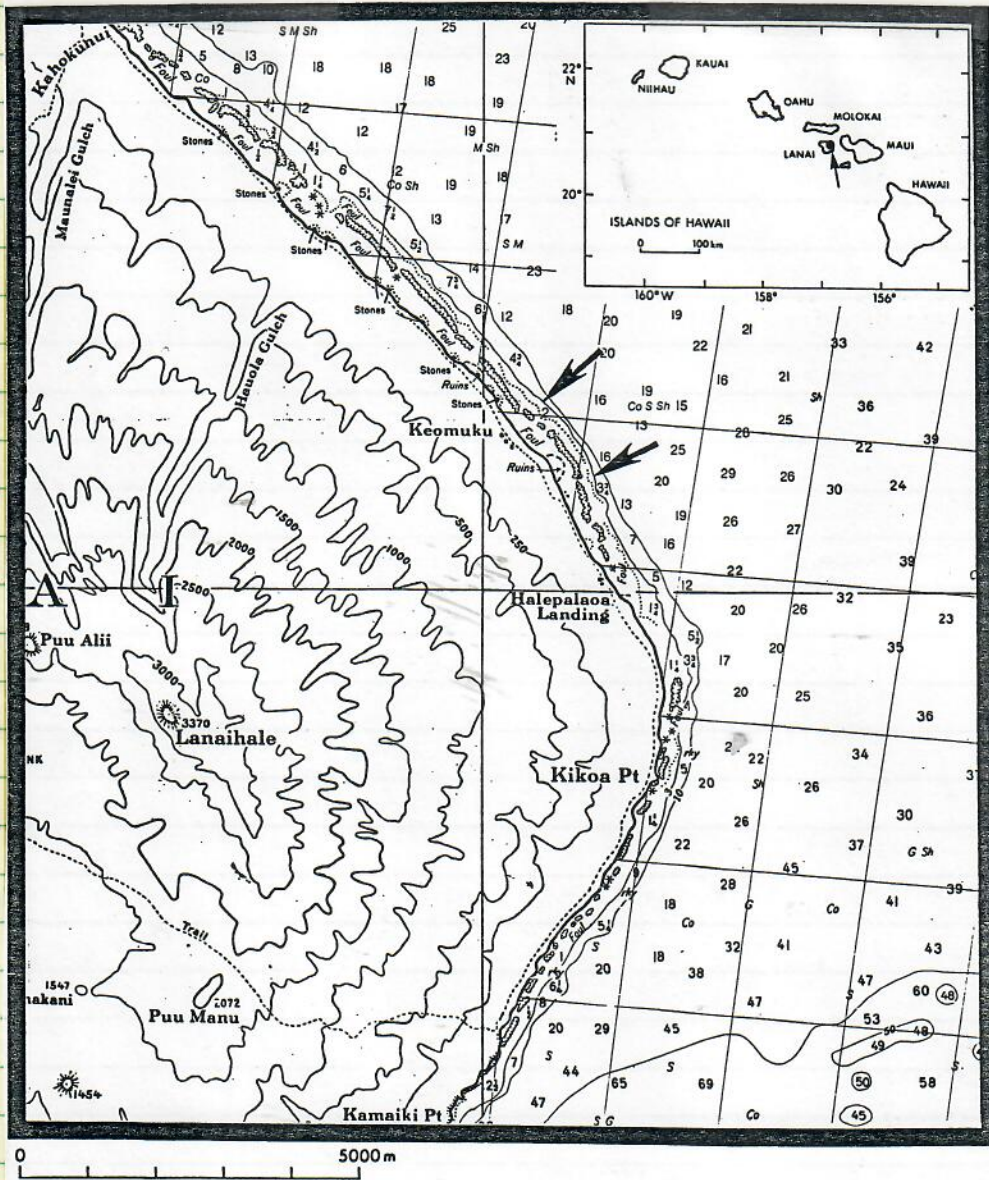


Figure 18.--Keomuku, Lanai, lat. 20°51'N, long. 156°50'W. Adapted from NOAA chart 19347 (depth in fathoms).

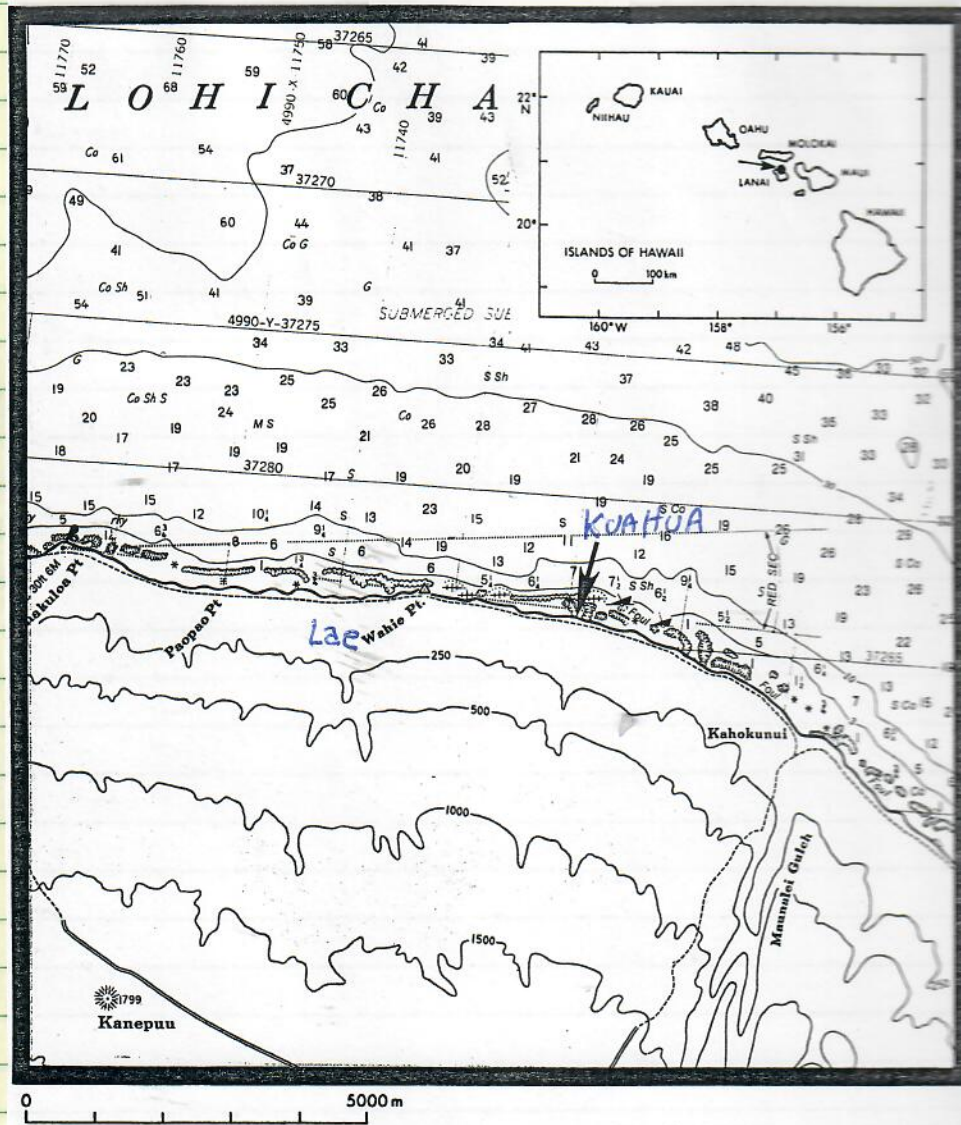


Figure 19.--Kuahua (Shipwreck Beach), Lanai, lat. $20^{\circ}55'N$, long. $156^{\circ}55'W$.
Adapted from NOAA chart 19351 (depth in fathoms).

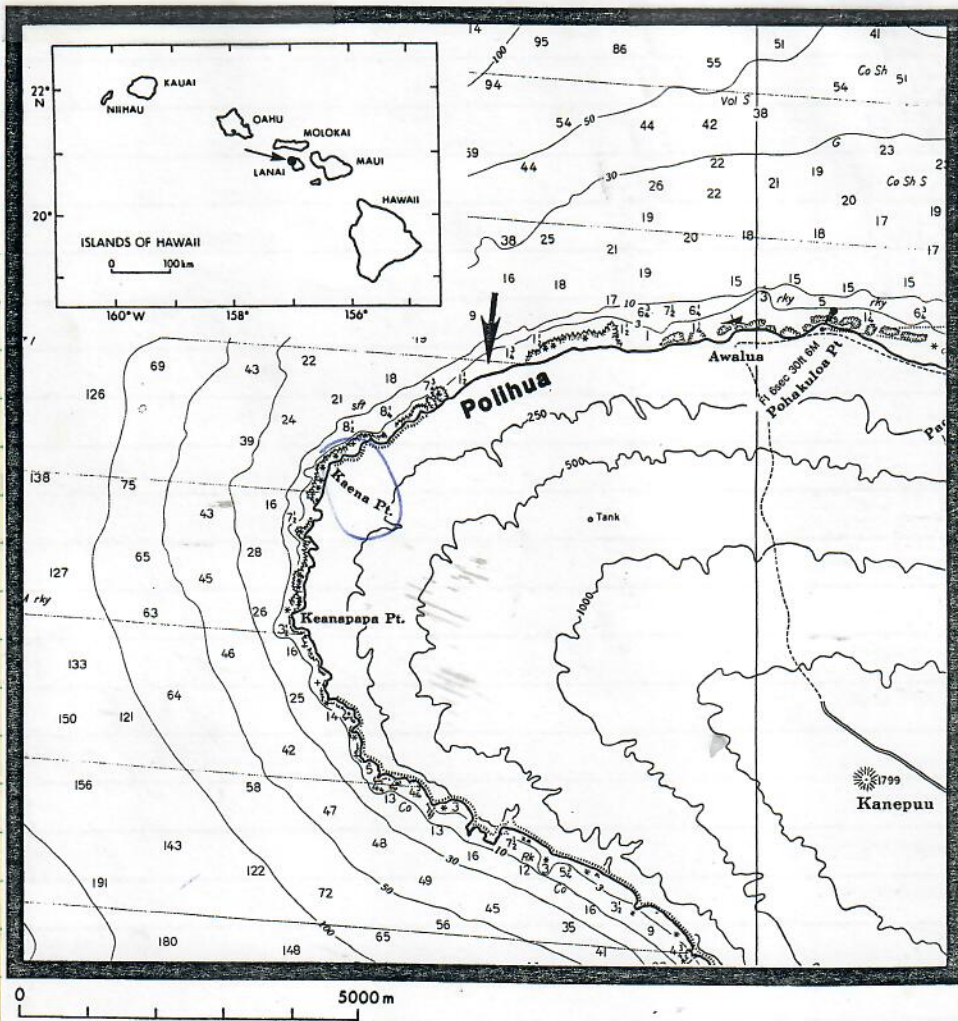


Figure 20.--Polihua Beach, Lanai, lat. $20^{\circ}55'N$, long. $157^{\circ}03'W$. Adapted from NOAA chart 19351 (depth in fathoms).

52

N=6 1/31/03

SCL

Glucose

44.7

77

59.0

67

44.9

77

58.2

65

50.9

65

61.3

64

sent



1/31/03
Federation
Camp

Aleks Facco ^{2 gals}

118 CHESTNUT ^{photo}

Hills Pkwy

Fort Wayne IN

46814

RADMANX@MSN.COM

Tagging Summary from Lanai during 1/1/80 - 9/3/02

Tag Numbers	Date	Carapace Length (cm)		Weight (lbs)	Capture Method
		Straight	Curved		
① 7861, 7862	10/22/1984	---	39.5	---	Hand grab
② 7861, 7862	10/22/1984	---	---	---	Hand grab
3 V11, V12	06/01/1991	---	60.0	---	Hand/Snorkel
4 V13, V14	06/01/1991	---	59.0	---	Hand/Snorkel
5 V15	06/01/1991	---	60.0	---	Hand/Snorkel
6 R976 (6/3/93), R977 (6/3/93), V16	06/01/1991	---	61.0	---	Hand/Snorkel
7 H867 (6/25/92), V402, V403	01/04/1992	---	74.0	---	Hand/Snorkel
8 V404, V405	04/26/1992	---	39.0	---	Net
9 H812, H813, H814	06/24/1992	---	64.5	---	Hand/Snorkel
10 H815, H816, H817	06/24/1992	---	52.0	---	Hand/Snorkel
11 H818, H819	06/24/1992	---	48.0	---	Hand/Snorkel
12 H820, H821, R998 (6/3/93), R999 (6/3/93)	06/24/1992	---	64.5	---	Hand/Snorkel
13 H822, H823	06/24/1992	---	52.5	---	Hand/Snorkel
H824, H825	06/24/1992	---	59.0	---	Hand/Snorkel
14 H833, H834	06/24/1992	---	44.5	---	Hand/Snorkel
15 H835, H836, H837	06/24/1992	---	81.0	---	Hand/Snorkel
16 H838, H839, H840	06/24/1992	---	46.5	---	Hand/Snorkel
17 H841, H842, H843	06/24/1992	---	---	---	Hand/Snorkel
18 H844, H845	06/24/1992	---	51.5	---	Hand/Snorkel
19 H846, H847	06/24/1992	---	46.0	---	Hand/Snorkel
20 H848, H849, H850	06/24/1992	---	70.0	---	Hand/Snorkel
21 H851, H852, H853	06/24/1992	55.2	59.0	---	Hand/Snorkel
22 H854, H855, H856	06/24/1992	38.7	41.0	19.0	Beach Net
23 H857, H858, H859	06/24/1992	52.8	57.0	57.0	Beach Net
24 H826, H866	06/25/1992	---	---	---	Hand/Snorkel
25 H827, H828	06/25/1992	---	62.0	---	Hand/Snorkel
26 H829, H830	06/25/1992	---	66.0	---	Hand/Snorkel
27 H831, H832	06/25/1992	---	59.0	---	Hand/Snorkel
28 H860, H861	06/25/1992	---	62.5	---	Hand/Snorkel
29 H862, H863	06/25/1992	---	56.0	---	Hand/Snorkel

Tagging Summary from Lanai during 1/1/80 - 9/3/02

Tag Numbers	Date	Carapace Length (cm)		Weight (lbs)	Capture Method
		Straight	Curved		
30 H864, H865	06/25/1992	---	47.0	---	Hand/Snorkel
31 H868, H869, J9 (6/3/93)	06/25/1992	---	50.0	---	Hand/Snorkel
32 H870, H871, R980 (6/3/93)	06/25/1992	---	67.0	---	Hand/Snorkel
33 H872, H873	06/25/1992	---	47.5	---	Hand/Snorkel
34 H874, H875	06/25/1992	---	69.0	---	Hand/Snorkel
35 H876, H877, H879	06/25/1992	52.1	56.5	45.0	Beach Net
36 H880, H881	06/25/1992	---	52.0	---	Hand/Snorkel
37 H882, H883	06/25/1992	---	49.5	---	Hand/Snorkel
38 H884, H885, H900	06/26/1992	---	63.5	---	Hand/Snorkel
39 H886, H887, H888	06/26/1992	---	82.0	---	Hand/Snorkel
40 H889, H890	06/26/1992	---	74.0	---	Hand/Snorkel
41 H891, H892, R969 (6/2/93)	06/26/1992	---	61.5	---	Hand/Snorkel
42 H893, H894, H895	06/26/1992	---	68.0	---	Hand/Snorkel
43 H896, H897	06/26/1992	---	55.0	---	Hand/Snorkel
44 H898, H899	06/26/1992	---	62.5	---	Hand/Snorkel
45 H926, H927	06/26/1992	---	62.5	---	Hand/Snorkel
46 H928, H929	06/26/1992	---	43.5	---	Hand/Snorkel
47 H930, H931	06/26/1992	---	67.5	---	Hand/Snorkel
48 H932, H933	06/26/1992	---	75.5	---	Hand/Snorkel
49 H934, H935	06/26/1992	---	57.0	---	Hand/Snorkel
50 R883, R884, R885, R886	06/01/1993	---	59.5	---	Hand/Snorkel
51 R887, R888, R889, R890	06/01/1993	---	60.0	---	Hand/Snorkel
52 R891, R892, R893, R894	06/01/1993	---	54.5	---	Hand/Snorkel
53 R895, R896, R897, R898	06/01/1993	---	67.5	82.5	Hand/Snorkel 9/19/93
54 R899, R900, R901, R902	06/01/1993	---	60.5	---	Hand/Snorkel
55 R903, R904, R924, R925	06/01/1993	61.3	67.0	---	Beach Net
56 R905, R906, R907, R908	06/01/1993	---	63.0	---	Hand/Snorkel
57 R909, R910, R911, R912	06/01/1993	---	72.5	---	Hand/Snorkel
58 R927, R928	06/01/1993	---	47.0	---	Hand/Snorkel
59 R930, R931, R932, R933	06/01/1993	---	67.0	---	Hand/Snorkel
60 R913, R916	06/02/1993	---	75.5	---	Basking on coral head

Tagging Summary from Lanai during 1/1/80 - 9/3/02

Tag Numbers	Date	Carapace Length (cm)		Weight (lbs)	Capture Method	
		Straight	Curved			
61 R917, R920	06/02/1993	---	81.0	---	Basking on coral head	
62 R921, R922, R923	06/02/1993	---	59.5	---	Hand/Snorkel	
63 R926, R929, R934, R935	06/02/1993	---	68.0	---	Hand/Snorkel	
64 R936, R939	06/02/1993	---	70.5	---	Hand/Snorkel	
65 R940, R941, R942, R943	06/02/1993	---	58.0	---	Hand/Snorkel	
66 R944, R945, R946, R947	06/02/1993	---	73.0	---	Hand/Snorkel	
67 R952, R953, R954	06/02/1993	---	62.5	---	Hand/Snorkel	
68 R955, R956, R957	06/02/1993	---	53.0	---	Hand/Snorkel	
69 R958, R959, R960	06/02/1993	---	45.5	---	Hand/Snorkel	
70 R961, R962	06/02/1993	---	54.0	---	Hand/Snorkel	
71 R963, R964	06/02/1993	---	57.5	---	Hand/Snorkel	
72 R965, R966, R967	06/02/1993	---	65.0	---	Hand/Snorkel	
73 R968, R988, R989	06/02/1993	47.5	68.8	50.5	74.0	Beach Net - 9/17/02
74 R970, R975	06/02/1993	47.3		51.0		Beach Net
75 R971, R972	06/02/1993	---		46.5		Hand/Snorkel
76 R973, R974	06/02/1993	---		40.5		Hand/Snorkel
77 R990, R991, R992, R993	06/02/1993	55.5	73.3	60.0	79.0	Beach Net - 9/17/02
78 R994, R995, R996, R997	06/02/1993	62.5		67.0		Beach Net
79 8726, 8727, 8728, 8729	06/03/1993	---		70.0		Hand/Snorkel
80 8730, 8731, 8732, 8733	06/03/1993	---		70.5		Hand/Snorkel
81 8734, 8735, 8736	06/03/1993	---		44.5		Hand/Snorkel
82 8737, 8738, 8739	06/03/1993	---		46.5		Hand/Snorkel
83 8740, 8741, 8742	06/03/1993	---		77.5		Hand/Snorkel
84 8743, 8744	06/03/1993	---		44.0		Hand/Snorkel
85 8745, 8746, 8747	06/03/1993	---		49.5		Beach Net
86 J5, J6, J7, J8	06/03/1993	---		58.0		Beach Net
87 R978, R979	06/03/1993	---		47.0		Hand/Snorkel
88 R981, R982, R983	06/03/1993	---		65.5		Hand/Snorkel
89 R984, R985, R986, R987	06/03/1993	---		56.0		Hand/Snorkel
90 V406, V407	10/29/1995	---		48.0		Feeding
91 V408, V409	01/16/1998	---		79.0		Beached

Tagging Summary from Lanai during 1/1/80 - 9/3/02

Tag Numbers	Date	Carapace Length (cm)		Weight (lbs)	Capture Method
		Straight	Curved		
92 V410, V411	11/25/1998	---	74.0	---	Beached
93 V412, V413	04/03/2002	---	59.0	---	Incidental net capture
94 V414, V415	06/23/2002	---	70.0	---	Basking
95 V416, V417	06/23/2002	---	69.0	---	Basking



Summary of Recovered Turtles from Lanai during 1/1/88 - 9/3/02

57

Tag Numbers	Date		Curved Carapace Length cm		Year Interval	Growth cm/yr
	Original	Recovered	Original	Recovered		
BBA408, Y426, Y427	07/05/1989	01/11/1991	76.0	---	1.5	---
H867 (6/25/92), V402, V403	01/04/1992	06/25/1992	74.0	75.5 82.0	0.4	3.8
H854, H855, H856	06/24/1992	01/18/1993	41.0	42.5	0.5	3.0
H838, H839, H840	06/24/1992	06/01/1993	46.5	48.0	0.9	1.7
H891, H892, R969 (6/2/93)	06/26/1992	06/02/1993	61.5	64.5	0.9	3.3
H820, H821, R998 (6/3/93), R999 (6/3/93)	06/24/1992	06/03/1993	64.5	69.5	0.9	5.6
H838, H839, H840	06/24/1992	06/03/1993	46.5	48.0	0.9	1.7
H848, H849, H850	06/24/1992	06/03/1993	70.0	73.5	0.9	3.9
H868, H869, J9 (6/3/93)	06/25/1992	06/03/1993	50.0	54.0	0.9	4.4
H870, H871, R980 (6/3/93)	06/25/1992	06/03/1993	67.0	71.5	0.9	5.0
R976 (6/3/93), R977 (6/3/93), V16	06/01/1991	06/03/1993	61.0	68.5	2.0	3.8
10994, 11019	04/14/1992	11/21/1994	---	---	2.6	---

① DAY 1

DATE FORM FILLED OUT

9,16,02

= Same as Lae Hi

CAPTURE DATE, LOCATION AND METHOD:

9/16/02 WHITE SANDS
LANAI HAND SNOOKER

PERSON RECORDING DATA: Liz Evans

TUMOR SCORE

0

ORAL TMRS EXT:

YES OR NO

—

EMACIATION CODE

0

OLD TAGS:

MT#

NEW TAGS:

RFL
LHIND
LFL
LH
RH

11877

424E6D2A71



424F2A5544

STRAIGHT CARAPACE - LENGTH:

— cm

WIDTH:

— cm

NOTCH LENGTH:

— cm

DB:

0 L.O.

VB:

0

CURVED CARAPACE LENGTH:

66.0 cm

WIDTH:

57.5

HEAD WIDTH:

— cm

AXIAL:

— cm

LATERAL:

— cm

PPS: YES OR NO OR NE

—

SEX: Male, Female or Undetermined

U

TAIL LENGTH: T

— cm

C

— cm

RIGHT FRONT FLIPPER WIDTH:

— cm

SAMPLES COLLECTED

PLASTRON LENGTH:

— cm

WEIGHT:

67.16 #

DESCRIPTIVE REMARKS:

Robust

(2)

DATE FORM FILLED OUT 9/16/02

CAPTURE DATE, LOCATION AND METHOD: Rock (Lae Hi)

9/16/02 WHITE SANDS LANAI HAND SNORKEL

PERSON RECORDING DATA: Liz Evans

TUMOR SCORE

0

ORAL TMRS EXT: YES OR NO

—

EMACIATION CODE

—

OLD TAGS:

[Empty boxes for old tags]

NEW TAGS:

LH 11878
RH 4250244B0D
RH 424E1B0A03

STRAIGHT CARAPACE - LENGTH:

— cm

WIDTH:

— cm

NOTCH LENGTH:

— cm

DB:

0 L.O.

VB:

0 L.O.

CURVED CARAPACE LENGTH:

80.5 cm

WIDTH:

71.0 cm

HEAD WIDTH:

— cm

AXIAL:

— cm

LATERAL:

— cm

PPS: YES OR NO OR NE

—

SEX: Male, Female or Undetermined

U

TAIL LENGTH: T

— cm

C

— cm

SAMPLES COLLECTED:

RIGHT FRONT FLIPPER WIDTH:

— cm

PLASTRON LENGTH:

— cm

WEIGHT:

140g 1b#

DESCRIPTIVE REMARKS:

Robust


3

DATE FORM FILLED OUT 9/16/02

CAPTURE DATE, LOCATION AND METHOD:

9/16/02 WHITE ~~STONE~~ (ae Hi) LANA I HAND SNORKEL

PERSON RECORDING DATA: LIZ EVANS

TUMOR SCORE <input type="text" value="0"/>	OLD TAGS: <input type="text"/>	NEW TAGS: LH REF <input type="text" value="11 879"/>
ORAL TMRS EXT: YES OR NO <input type="text" value="-"/>	<input type="text"/>	LH <input type="text" value="42501C7D72"/>
EMACIATION CODE <input type="text" value="0"/>	MT# <input type="text"/>	LH 
		RH <input type="text" value="423A283F1F"/>

STRAIGHT CARAPACE - LENGTH: cm WIDTH: cm

NOTCH LENGTH: cm DB: L.O. VB: L.O.

CURVED CARAPACE LENGTH: cm WIDTH: cm

HEAD WIDTH: cm AXIAL: cm LATERAL: cm

PPS: YES OR NO OR NE SEX: Male, Female or Undetermined

TAIL LENGTH: T cm C cm

RIGHT FRONT FLIPPER WIDTH: cm SAMPLES COLLECTED:

PLASTRON LENGTH: cm

WEIGHT: #

DESCRIPTIVE REMARKS: Robust

4

DATE FORM FILLED OUT 9/16/02

CAPTURE DATE, LOCATION AND METHOD:

Rock (Laeti)

9/16/02

WHITE SAND LANA

HAND SNORKEL

PERSON RECORDING DATA:

LIZ EVANS

TUMOR SCORE

0

ORAL TMRS EXT: YES OR NO

—

EMACIATION CODE

—

OLD TAGS:

Empty boxes for old tags

NEW TAGS:

LH RFE

11880

LH RFE

424F130355



RH



423F336E4B

MT#

STRAIGHT CARAPACE - LENGTH:

— cm

WIDTH:

— cm

NOTCH LENGTH:

— cm

DB:

0

L.O.

VB:

0

L.O.

CURVED CARAPACE LENGTH:

62.0 cm

WIDTH:

51.0 cm

HEAD WIDTH:

— cm

AXIAL:

— cm

LATERAL:

— cm

PPS: YES OR NO OR NE

—

SEX: Male, Female or Undetermined

U

TAIL LENGTH: T

— cm

C

— cm

SAMPLES COLLECTED:

RIGHT FRONT FLIPPER WIDTH:

— cm

PLASTRON LENGTH:

— cm

WEIGHT:

60 lb #

DESCRIPTIVE REMARKS:

Robust

DATE FORM FILLED OUT 9/16/02

CAPTURE DATE, LOCATION AND METHOD:

9/16/02 WHITE ~~SNORKEL~~ LANA I HAND SNORKEL

PERSON RECORDING DATA: LIZ EVAN

TUMOR SCORE

0

ORAL TMRS EXT: YES OR NO

—

EMACIATION CODE

0

OLD TAGS:

NEW TAGS:

LH	11882
RFL	
LH	424D114023
RH	424F365664

STRAIGHT CARAPACE - LENGTH:

— cm

WIDTH:

— cm

NOTCH LENGTH:

— cm

DB:

0 L.O.

VB:

0 L.O.

CURVED CARAPACE LENGTH:

60.0 cm

WIDTH:

530 cm

HEAD WIDTH:

— cm

AXIAL:

— cm

LATERAL:

— cm

PPS: YES OR NO OR NE

—

SEX: Male, Female or Undetermined

U

TAIL LENGTH: T

— cm

C

— cm

SAMPLES COLLECTED

RIGHT FRONT FLIPPER WIDTH:

— cm

PLASTRON LENGTH:

— cm

WEIGHT:

60 #

DESCRIPTIVE REMARKS:

Robust

5

DATE FORM FILLED OUT 9/16/02

CAPTURE DATE, LOCATION AND METHOD:

Rock (Caeti)

9/16/02	WHITE ROCK LANAI	HAND SNORKEL
PERSON RECORDING DATA: LIZ EVANS		

TUMOR SCORE

0

ORAL TMRS EXT:

YES OR NO

—

EMACIATION CODE

—

OLD TAGS:

NEW TAGS:

RH REF	11881
LFL	424E7A1760
LH	
RH	
	424F057041

MT#

STRAIGHT CARAPACE - LENGTH: cm WIDTH: cm

NOTCH LENGTH: cm DB: L.O. VB: L.O.

CURVED CARAPACE LENGTH: cm WIDTH: cm

HEAD WIDTH: cm AXIAL: cm LATERAL: cm

PPS: YES OR NO OR NE SEX: Male, Female or Undetermined

TAIL LENGTH: T cm C cm

RIGHT FRONT FLIPPER WIDTH: cm SAMPLES COLLECTED:

PLASTRON LENGTH: cm

WEIGHT: #

DESCRIPTIVE REMARKS:

7

DATE FORM FILLED OUT / /

Same as Kuaiva

CAPTURE DATE, LOCATION AND METHOD:

Federation camp, Scoop net 9/16/02
Lap ai
PERSON RECORDING DATA: Nick

TUMOR SCORE

0

ORAL TMRS EXT:
YES OR NO

—

EMACIATION CODE

0

OLD TAGS:

[Empty boxes for old tags]

424D5F4658



Lh
RF
LA
LRL
Rh

11883 (Metal tag)

423F462561



MT#

STRAIGHT CARAPACE - LENGTH:

— cm

WIDTH:

— cm

NOTCH LENGTH:

— cm

DB:

0 L.O.

VB:

0 L.O.

CURVED CARAPACE LENGTH:

70.0 cm

WIDTH:

61 cm

HEAD WIDTH:

— cm

AXIAL:

— cm

LATERAL:

— cm

PPS: YES OR NO OR NE

—

SEX: Male, Female or Undetermined

U

TAIL LENGTH: T

15 cm

C

10.5 cm

SAMPLES COLLECTED:

RIGHT FRONT FLIPPER WIDTH:

— cm

PLASTRON LENGTH:

— cm

WEIGHT:

83 bls. #

DESCRIPTIVE REMARKS:

Robust

DATE FORM FILLED OUT / /

Federation Camp =
N 20.91367; W 156.89940

END DAY
65
ONE

CAPTURE DATE, LOCATION AND METHOD:

Federation Camp, (Kauai) scoop net, 9/16/02
LANAI

PERSON RECORDING DATA:

Nick Quaintance Monday

TUMOR SCORE

0

ORAL TMRS EXT:

YES OR NO

—

EMACIATION CODE

0

MT#

OLD TAGS:

Empty table for old tags

NEW TAGS:

RFL

Lh 11884 (metal)

RA

Lh 4250353214



Rh

423F3A0D65



STRAIGHT CARAPACE - LENGTH:

— cm

WIDTH:

— cm

NOTCH LENGTH:

— cm

DB:

0 L.O.

VB:

0 L.O.

CURVED CARAPACE LENGTH:

66.0 cm

WIDTH:

60.0 cm

HEAD WIDTH:

— cm

AXIAL:

— cm

LATERAL:

— cm

PPS: YES OR NO OR NE

Yes

SEX: Male, Female or Undetermined

U

TAIL LENGTH: T

13. cm

C

8.5 cm

RIGHT FRONT FLIPPER WIDTH:

— cm

SAMPLES COLLECTED:

Mouth sample

PLASTRON LENGTH:

— cm

Saved w
10% Formalin

WEIGHT:

72 #

Rh

DESCRIPTIVE REMARKS:

Robust

66

START DAY 2

orig. DATA = Beach net

SCL 47.5
6/93

Recovery ①

DATE FORM FILLED OUT 9/17/02

CAPTURE DATE, LOCATION AND METHOD:

9/17/02, White Rock Light, Snorkeling
LANAI

PERSON RECORDING DATA: Jill

TUMOR SCORE

0

OLD TAGS:

RH R-989

ORAL TMRS EXT:

YES OR NO

—

RFL R-968

RFL R-988

NEW TAGS:

4250266735



424E215D42



LT new 11885 metal tag

EMACIATION CODE

0

MT#

STRAIGHT CARAPACE - LENGTH:

86.8 cm

WIDTH:

52.0

NOTCH LENGTH:

68.6 cm

DB:

0 L.O.

VB:

0

CURVED CARAPACE LENGTH:

74 cm

WIDTH:

63.5

HEAD WIDTH:

10.7 cm

AXIAL:

27.9 cm

LATERAL:

27.6

PPS: YES OR NO OR NE

yes

SEX: Male, Female or Undetermined

U

TAIL LENGTH: T

18 cm

C

13.11 cm

SAMPLES COLLECTED:

RIGHT FRONT FLIPPER WIDTH:

— cm

PLASTRON LENGTH:

54.9 cm

WEIGHT:

102 lbs #

DESCRIPTIVE REMARKS:

mouth examination fine

DATE FORM FILLED OUT 9.17.02 (Laetti)

(2)

CAPTURE DATE, LOCATION AND METHOD: Hand

7/17/02, White rock, snorkeling
LANAI

PERSON RECORDING DATA: Jill Q

TUMOR SCORE

0

ORAL TMRS EXT:
YES OR NO

/

EMACIATION CODE

0

OLD TAGS:

none

NEW TAGS:

CRFL LH 11886 (metal tag)
LH 42500A4243
RH 424F243A49

MT#

STRAIGHT CARAPACE - LENGTH: 65.8 cm

WIDTH: 51.3 cm

NOTCH LENGTH: 65.5 cm

DB: 0 L.O.

VB: 0 L.O.

CURVED CARAPACE LENGTH: 71.5 cm

WIDTH: 65. cm

HEAD WIDTH: 9.3 cm

AXIAL: 26.3 cm

LATERAL: 25.6 cm

PPS: YES OR NO OR NE yes

SEX: Male, Female or Undetermined 4

TAIL LENGTH: T 15.5 cm

C 11.5 cm

RIGHT FRONT FLIPPER WIDTH: — cm

SAMPLES COLLECTED:

PLASTRON LENGTH: 54.5 cm

WEIGHT: 90 #

DESCRIPTIVE REMARKS:

mouth examination: fine

DATE FORM FILLED OUT 9/17/02 (Laetti Hand)

(3) (2)

CAPTURE DATE, LOCATION AND METHOD:
9/17/02, White Rock, Snorkeling
LANA1

PERSON RECORDING DATA: Jilly Q

TUMOR SCORE

0

ORAL TMRS EXT:
YES OR NO

—

EMACIATION CODE

0

MT#

OLD TAGS:

none

NEW TAGS:

4H 11889 metal tag

LFL 4H 4250253040



RH 424E3A0D00



STRAIGHT CARAPACE - LENGTH: 57.1 cm

WIDTH: 40.4

NOTCH LENGTH: 56.6 cm

DB: 0 L.O.

VB: 0 L.O.

CURVED CARAPACE LENGTH: 61.5 cm

WIDTH: 56

HEAD WIDTH: 9.7 cm

AXIAL: 23.0 cm

LATERAL: 23.0

PPS: YES OR NO OR NE NO

SEX: Male, Female or Undetermined U

TAIL LENGTH: T 11 cm

C 7 cm

RIGHT FRONT FLIPPER WIDTH: — cm

SAMPLES COLLECTED:

PLASTRON LENGTH: 44.8 cm

WEIGHT: 58 #

DESCRIPTIVE REMARKS:

mouth ex: fine white paint

DATE FORM FILLED OUT

9/17/02

orig = beach net

16/02/93
55.5 SCL

Recovery (4) (A)

CAPTURE DATE, LOCATION AND METHOD:

9/17/02, White rock hand snorkeling
LAVAL (Laetti)

PERSON RECORDING DATA:

Jill Q

TUMOR SCORE

0

ORAL TMRS EXT:
YES OR NO

—

EMACIATION CODE

0

OLD TAGS:

RFL R-990

LFL R-991

RH R-993

LH R-992

NEW TAGS

423F446C1A



424F0D5853



H
RFL
LFL
H

MT#

STRAIGHT CARAPACE - LENGTH:

73.3 cm

WIDTH:

54.9 cm

NOTCH LENGTH:

173.1 cm

DB:

0 L.O.

VB:

0 L.O.

CURVED CARAPACE LENGTH:

79 cm

WIDTH:

68.5 cm

HEAD WIDTH:

10.1 cm

AXIAL:

31.9 cm

LATERAL:

31.8 cm

PPS: YES OR NO OR NE

yes

SEX: Male, Female or Undetermined

U

TAIL LENGTH: T

23 cm

C

15.5 cm

SAMPLES COLLECTED:

RIGHT FRONT FLIPPER WIDTH:

12.3 cm

PLASTRON LENGTH:

59.0 cm

WEIGHT:

138 #

DESCRIPTIVE REMARKS:

mouth examining all 4 tags expanded
snout 6 centrals DVE crimped

pic 2 on roll 2
LIZ w/ turtle
pic 3 on roll 2

White Point
"J"

DATE FORM FILLED OUT

9/17/02 (Laeti)

(5) (4)

CAPTURE DATE, LOCATION AND METHOD:

9-17-02, White rock, ^{Hand} Snorkeling
LAWAI

PERSON RECORDING DATA:

TUMOR SCORE

0

ORAL TMRS EXT:

YES OR NO

-

EMACIATION CODE

0

MT#

OLD TAGS:

None

NEW TAGS:

RFL LH 11890 (marked for)

LFL LH 411C671A5D

PH 414B372556

STRAIGHT CARAPACE - LENGTH:

~~55.9~~ 55.9 cm

WIDTH:

53.8 cm

NOTCH LENGTH:

43.4 cm

DB:

0 L.O.

VB:

0 L.O.

CURVED CARAPACE LENGTH:

60 cm

WIDTH:

51.5 cm

HEAD WIDTH:

8.5 cm

AXIAL:

27.2 cm

LATERAL:

21.7 cm

PPS: YES OR NO OR NE

yes

SEX: Male, Female or Undetermined

U

TAIL LENGTH: T

10.5 cm

C

7.5 cm

RIGHT FRONT FLIPPER WIDTH:

1 cm

SAMPLES COLLECTED:

PLASTRON LENGTH:

43.8 cm

WEIGHT:

53 #

DESCRIPTIVE REMARKS:

Mouthparts: red bobber
8 lbs test
sniped off as close as
possible in mouth

White paint

DATE FORM FILLED OUT 9/17/02

(6) (5)

CAPTURE DATE, LOCATION AND METHOD:

9/17/02, White rock ^{Hand} snorkeling
(HAWAII) (Loe Hi)

PERSON RECORDING DATA: Jill Q

TUMOR SCORE

0

ORAL TMRS EXT:
YES OR NO

—

EMACIATION CODE

0

OLD TAGS:

none

NEW TAGS:

RFL LH 11891 (metal)

LFL LH 423E181C2C



RH 424F071E34



MT#

STRAIGHT CARAPACE - LENGTH:

66.2 cm

WIDTH:

51.9 cm

NOTCH LENGTH:

66.1 cm

DB:

0 L.O.

VB:

0 L.O.

CURVED CARAPACE LENGTH:

70.5 cm

WIDTH:

63 cm

HEAD WIDTH:

10.3 cm

AXIAL:

25.5 cm

LATERAL:

25.8 cm

PPS: YES OR NO OR NE

yes

SEX: Male, Female
or Undetermined

U

TAIL LENGTH: T

15 cm

C

9.5 cm

SAMPLES COLLECTED:

RIGHT FRONT FLIPPER WIDTH:

— cm

PLASTRON LENGTH:

53.6 cm

WEIGHT:

86 lbs #

DESCRIPTIVE REMARKS:

mouth ext: fine

white paint