

KIHOLO/HPA

LIBRARY OF

GEORGE H. BALAZS

BALAZS

1987-1988

2 OF 2

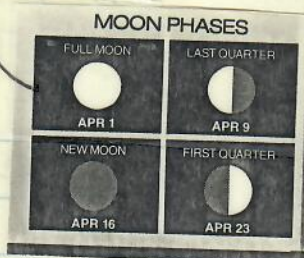


66 Kiholo #3

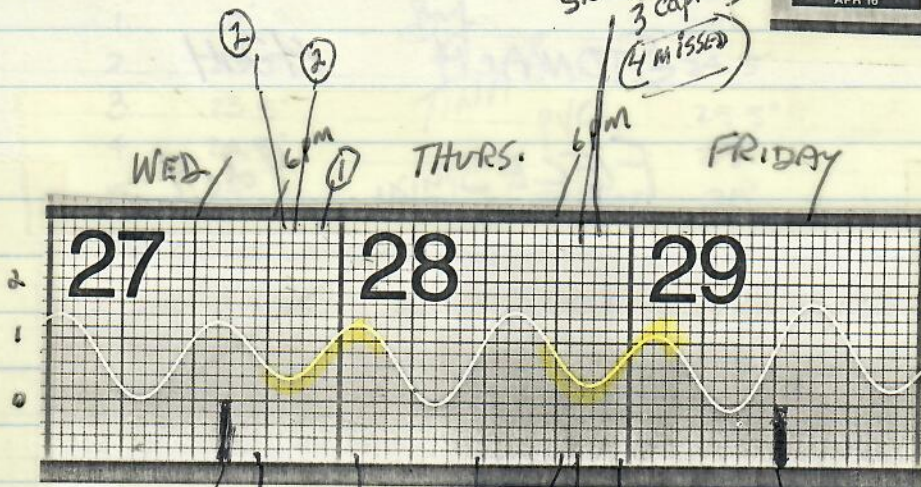
APRIL 88

KAWAIIAE

-0 04 min



8-9 pm  
SNORKLE  
3 captures  
(4 missed)



ARRIVE  
Kiholo

Nets in

PINNED  
UP

UNPINNED

NETS  
OUT

8 Hours  
NETTING  
5 CAUGHT

12 Hours  
NETTING  
2 CAUGHT

DEPART  
Kiholo

George,

The Kiholo stomach samples had Lyngbya sp. and Oscillatoria subtilissima in them, but these species were attached to patches of skin. These are typical of external skin scrapings rather than stomach samples. Are the turtles preening themselves? and ingesting some of the skin flora?

When it comes to identifying Gelidium and Pterocladia species I have to go by vegetative characteristics most of the time. These genera are separated by how many ostioles are present in their cystocarps (1 or 2) and I seldom see female thalli. The vegetative characteristics are quite variable too. I am reasonably sure my identifications are accurate, but worry over every sample rich in Gelidium or Pterocladia. What I am suggesting is that these genera are very similar in appearance at times and would be the same food in the eyes of a turtle.

swell?  
700



ALOHA AIRLINES - 11:10 pm 67  
 [Wed. April 27, 88 - FL94 12:15 pm → 12:48 pm  
 Friday April 29, 88 - 445 Am  
 FL281 3:15 pm → 3:48 pm

#3 Cost - PLANE TICKET; Mt; CHAIR; 2M charge; Film;

4-27-88 Thurs. 6:00 - 6:30 NH60R School 06-02  
 Wednesday

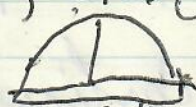
→ MATT HUGHES - Chem. teacher  
 & Sports COACH

Letters  
 sent  
 6/88

HSG  
 Jennifer Lopez  
 Sarah Fishman  
 ERIN Carlson  
 Edna Fok ) + MARTY  
 FAST

Net in at 5:30 pm - 2-60'  
 wood floor  
 Light winds, calm seas, no  
 swells,

- \* Patch tent - 1) small slit between windows 2) ties missing from zipper doors, fly, etc.  
 3) Windows slit 4) Rubber tips ON POLES.  
 5) Size of CANVAS 6) Support lines (Gold braid)



Net in 5:30 pm - PINNED UP  
 4/27 1:30 AM  
 4/28/88



SPOTTED RAY caught 12:15 AM  
 4/28 - DISPATCHED - 44 <sup>MAGNUM</sup> BANG  
 STICK.

one shell didn't go off - rubber  
 not pulled back sufficiently.

5 large barbs saved - rest buried.  
 WING SPAN approx. 4'.

TO Bed 2:15 AM  
 up 6:30 AM

4/28  
 Thurs.

Worked up turtles 7:45 - 10:45 AM.

Nets unspinned 11:30 AM - shifts  
 started.

Smoked 8-9:15 PM - 3 caught

Nets out 11:30 PM - Students &  
 Matt brought them in.

Captures in net 6:40 PM; 7:30 PM.

Joe & Neil clipped sled on 2-100' re

Continued p. 92



CAPTURE DATE/TIME: 10:15 / 4/27/88  
TAG RECOVERY YES (NOX)

(#18-21)  
(1 3/4 flash) pictures

TAGS - RFL 8924 LFL 8925

TAGS OTHER SITES = 8926 (right hind)

Painted #  
line 1

	LENGTH	x	WIDTH
STRAIGHT	71.6cm		55.4cm
NOTCH	71.6cm		55.4cm

CURVED 76cm x 68 1/2 cm

WEIGHT - 102 lbs.

HEAD - 10.2 cm

TAIL - 15.5 cm

R Flipper - 11.2 cm

#8924 Kiholo stomach 4/27/88

*Turbinaria ornata*  
Amphipod

PLASTRON - 57.0 cm

WEIGHT - 102 lbs

DESCRIPTIVE REMARKS (ie tumors, abnormalities, graft spot, epizootes, etc.) =

- PL = burrowing barns; skin barns;

red skin algae - lots of fouling / scum

green on PL

- Carapace = healing gouges suggestive of shark attack.

- Stained mouth

- healed missing piece; possible previous tag

SAMPLES (Amphipod and L Flipper)

STOMACH - no

BLOOD - NO Blood

FECES - tried; but nothing

TISSUE -

EPIZOITES -

100%



PARTICIPANTS

1. Tanya Bishop
2. Laura Rice
3. Alison Kerr (Sissy)
4. Marayka Waters
5. Joseph Thill
6. Jenni McKenzie
7. Erica Fischer
8. Joe Magaldi
9. Dan Sayre
10. Tina-Ji
11. Jennifer Mann
12. Monica Rice
13. Bek Mortenre
14. Kristina Jasko
15. Becky Norley
16. Jason Prokolenko
17. Neil Ozaki

letters  
sent



CAPTURE DATE/TIME: 8:00pm 4/27/88

TAG RECOVERY YES

NO

Don't capture =>

W/STUDY picture #21-32

TAGS - RFL 8927

LFL 8928

TAGS OTHER SITES = 8927

blue paint #2

STRAIGHT

LENGTH

x

WIDTH

NOTCH

43.0 cm

34.7 cm

CURVED

46.0 cm

x

39.5 cm

WEIGHT - 246g

HEAD - 7 cm

TAIL - 8 cm

R Flipper - 7 cm

PLASTRON - 34.5 cm

WEIGHT - 246g

DESCRIPTIVE REMARKS (ie tumors, abnormalities, graft spot, epizootics, etc.) =

- Stomach red filaments & brownish chunks
- slightly tattered hind flippers
- 4 brown roughing barnacle scars on plastron
- light frothing

#8927 Kiholo stomach 4/27/88

Gelidium pusillum  
Alsidium sp.  
Oscillatoria sp.  
Scytonema pascheri

50%  
 50  
 Trace  
 Trace

Samples -

Sand

STOMACH - yes

BLOOD - yes

FECES - no

TISSUE -

EPIZOOTICS -



4/28/88

SITE NO.

	SURFACE TEMP	BOTTOM TEMP	SUR. SAL.	BOTTOM SAL.
2	25.0 C	25.0 C	11	29
3	21.5	22	11	29
4	24.5	24	12	29
5	22	25	21	30
6	25	25	25	30
7	<del>25</del> 25	24	24	30

START TIME : 12:00 pm

END TIME : 12:45 pm

TIDE =

NOTE : SITES # 1 &amp; # 8 ELIMINATED DUE TO SHORTAGE OF TIME,



CAPTURE DATE/TIME: 8:00pm 4/27/88  
TAG RECOVERY YES NO

blue paint #3

TAGS - RFL 8930 LFL 8929  
TAGS OTHER SITES = pictures #33

STRAIGHT LENGTH x WIDTH  
42.6 cm 33.7 cm  
NOTCH 42.3 cm

CURVED 45.5 cm x 38.5 cm  
WEIGHT - 25.5 lbs

HEAD - 7.3 cm  
TAIL - 8.5 cm  
R Flipper - 7.9 cm

PLASTRON - 33.7 cm  
WEIGHT - 25.5 lbs

DESCRIPTIVE REMARKS (ie tumors, abnormalities, graft spot, epizootes, etc.) =  
- Red and green algae on plastron  
- Stomach, red filaments  
- Silt (heavy) on Carapace

#8929 Kiholo stomach 4/27/88

<u>Gelidium pusillum</u>	90%
<u>Alsidium sp.</u>	6
<u>Hypnea sp.</u>	2
<u>Jania capillacea</u>	2
<u>Microcoleus sp.</u>	Trace

Samples -

STOMACH - yes  
BLOOD - yes parasite  
FECES - no  
TISSUE -  
EPIZOOTES -

KRIS 197  
HEAD 28.9



CAPTURE DATE/TIME: 6:55pm 4/27/88 75  
TAG RECOVERY YES ~~NO~~ DICTUM #34  
blue #4

TAGS - RFL 8930 LFL 8931  
TAGS OTHER SITES =

STRAIGHT      LENGTH      x      WIDTH  
                    42.7cm                      35.3cm  
" NOTCH      43.4cm

CURVED      45.5cm      x      42.0cm  
WEIGHT - 36.5 lb

HEAD - 7.2cm

TAIL - 7.5cm

R Flipper - 7.6cm

PLASTON - 35.4

WEIGHT - 36.5 lb

DESCRIPTIVE REMARKS (ie tumors, abnormalities, graft spot, epizootes, etc.) =

- green/brown algae
- barnacles + barnacle scars
- moderate scum on carapace
- stomach, red filaments

SAMPLES -

STOMACH - nothing saved

BLOOD - NO

FECES -

TISSUE -

EPIZOOTES -



CAPTURE DATE/TIME: 2/10/87 6:57pm 4/27/88 77  
TAG RECOVERY YES 59.2cm NO  
PAINTED BLUE #5

TAGS - 8720 RFL 8721 LFL photos 2  
TAGS OTHER SITES = 10 end of roll

STRAIGHT LENGTH x WIDTH  
NOTCH 59.3cm 45.6cm  
59.0cm

CURVED 63.5cm x 56.0cm  
WEIGHT - 65.5 Wt

HEAD - 9.2cm

TAIL - 13.0cm

R Flipper - 10.5cm

PLASTON - 48.6cm

WEIGHT - 65.5 Wt

DESCRIPTIVE REMARKS (ie tumors, abnormalities,  
graft spot, epizootes, etc.) =  
Yellowy soft + scum on carapace

SAMPLES -

STOMACH -

BLOOD -

FECES -

TISSUE -

EPIZOITES -

Nothing

4/27 - 4/28  
Wed. Thurs.



## Boxes/GEAR LEFT w/ HPA 4/29/88

Box #1  
Blue Painted

100' net, red float - Lead clipped  
 rebar anchor  
 20' chain  
 100' line; 50' line

Box #5

60' wood float net  
 2 bags pins  
 blue tarp

(A Second wood float net packed somewhere)

Box #6

Robert's jacket  
 2 floats  
 1 swivel  
 30' line

Box #7

60' red float net  
 pins  
 small canvas

Box #8

60' red float net  
 Blue tarp  
 10' chain  
 plastic float  
 danforth anchor

Box #6 written in ballpoint  
 100' net (leads clipped)  
 tarp

44 MAs: Shell  
 TO DRAW

Cardboard Tube

Brass stick  
 wooden T (taped to tube)



NEEDS

1. Schedule snorkel only.
- \* 2. Letters to students.
- \* 3. Leslie briefing
4. Call Isaac Hilo - Noah - "Tovish"
5. Algae Survey
6. Letter to me.
7. "Ring" all tags!



- return these samples please -

HPA #3

Samples sent to  
Dennis Russell  
5/3/88 from HPA #3

3317	4/28/88	TAG	Scraping
3317	4/28	-	Carapace scraping
8924	4/27		Stomach
8927	4/27		Stomach
8939	4/28		Stomach
8941	4/28		stomach <del>used</del>
7774	4/28		stomach <u>used</u>
8929	4/27		Stomach

ALL  
ID'S  
RECEIVED  
11/88  
SAMPLES  
ALL TAPED IN BOOK



HPA #4 ELEVEN

Samples sent to  
Dennis Russell 7/5/88

8702 KIHLO STOMACH CONTENTS

8704 " " "

8707 " " "

8716 " " "

8945 " " "

8943 " " "

8947 " " "

POND BOTTOM

KIHLO BRACKISH POND  
w/ocean CONNECTION

REEF #1

KIHLO BAY

REEF #2

" "

REEF #3

" "

ALL ID'S  
RECEIVED  
11/88

SAMPLES  
RETURNED  
ALL TAPED IN BOOK

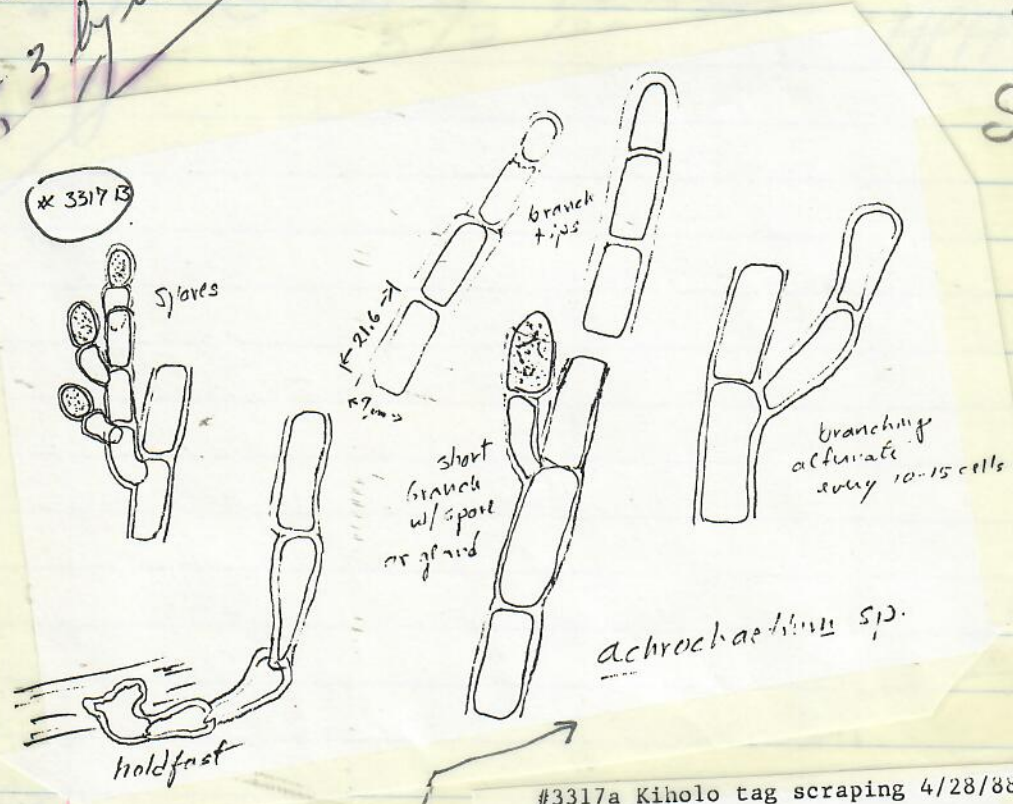
PLEASE RETURN ALL OF THESE SAMPLES.

HONOLULU LABORATORY  
Southwest Fisheries Center  
2570 Dole Street  
Honolulu, HI 96822-2396



START 5  
 TURTLES CAPTURES  
 4/28 - 4/29 Friday  
 Thurs - 3 by hand  
 2 net, 1

3/21/80  
 Kiholo net  
 3317 RFL  
 3318 LFL  
 S-49.4x  
 37.7  
 37 lbs



#3317a Kiholo tag scraping 4/28/88

- Sphacelaria sp.
- Achrochaetium sp.\*
- Chaetomorpha antennina
- Centroceros clavulatum

Foraminifera  
 Clam

#3317b Kiholo posterior ventral carapace scraping

Chaetomorpha antennina	90%
Achrochaetium sp.	10
Diatoms	Trace

Black spider mite  
 Black sand



CAPTURE DATE/TIME: 4/28/88 8-9pm

83

TAG RECOVERY

YES

NO

HAND CAPTURE

TAGS -

RFL

33/7

LFL

photos #1-5

TAGS OTHER SITES =

new (8933 LHIND)

7782 LAS

"RING"

STRAIGHT

LENGTH

x

WIDTH

65.8

49.5

close up

NOTCH

of TAGS

CURVED

70.0

x

64.0

WEIGHT - 82.5 lbs

HEAD - 9.5

TAIL - 14.5

RFFlipper - 11.6

PLASTRON - 53.2

~~WEIGHT~~

DESCRIPTIVE REMARKS (ie tumors, abnormalities, graft spot, epizootes, etc.) =

"Bushy" green and thick red underside marginal scutes. Tags - Black encrusted  
with green fleshy each sample

Samples -

STOMACH - No

BLOOD - No

FECES - No

TISSUE -

EPIZOOTES - From both legs - anal

underside of marginals



SUMMARY OF TAGGING DATA FOR THE HPA/NMFS GREEN TURTLE  
RESEARCH PROJECT AT KIHOLE BAY, HAWAII

Compiled by G. H. Balazs

Tag No.	Straight carapace (cm)		Date/time	Capture method
	Length	Width		
<b>Expedition No. 1, 21-23 October 1987</b>				
7778, <sup>a</sup> 7779, (8701)	60.6	49.1	10/21, 2230	Hand
8702, 8703	43.4	34.8	10/21, 2245	Hand
8704, 8705, 8706	55.0	43.0	10/21, 2300	Hand
8707, 8708	45.3	44.9	10/22, 1800	Net
8709, 8710, 8711	52.7	--	10/22, 1545	Net
8712, 8713	45.1	36.4	10/23, 0320	Net
<b>Expedition No. 2, 10-12 February 1988</b>				
8714, 8715	42.4	32.9	2/11, 0120	Net
8716, 8717	46.1	37.8	2/11, 0015	Net
8718, 8719	45.6	35.1	2/10, 2230	Hand
8720, 8721	59.2	45.6	2/10, 2300	Hand
8722, 8723	46.5	37.9	2/10, 2330	Net
8724, 8725, 8902	58.7	47.6	2/10, 1830	Net
8903, 8904	39.1	32.9	2/11, 1830	Net
8905, 8906	41.6	34.7	2/11, 1835	Net
3476, <sup>a</sup> 3477, (8907)	64.3	51.8	2/11, 1845	Net
7759, <sup>a</sup> 7760, (8908)	56.5	44.9	2/11, 1930	Net



CAPTURE DATE/TIME: 8:49 pm 9/15/88

TAG RECOVERY

YES

NO

picture # 718

TAGS -

RFL 1774

LFL 8935

TAGS OTHER SITES =

Left <sup>new</sup> Hand; 8936

3rd scale

STRAIGHT

LENGTH

x

WIDTH

57.3 cm

45.3 cm

21

NOTCH

56.7 cm

CURVED

62.0 cm

x

56.0 cm

WEIGHT - 56 lbs

HEAD - 8.7 cm

TAIL - 9 cm

R Flipper - 9.6 cm

PLASTRON - 46.8

WEIGHT - 56 lbs

DESCRIPTIVE REMARKS (ie tumors, abnormalities, graft spot, epizootes, etc.) =

- left hand on 2nd scale left  
- lots of red algae on skin

Kiholo stomach

Gelidium pusillum  
Alsidium sp.  
Jania capillacea  
Micrococcus sp.

99%

1

Trace

Trace

Samples -

STOMACH - yes: valonia?

BLOOD - yes

FECES -

TISSUE -

EPIZOOTES -



## Summary of tagging data (Kiholo Bay).--Continued.

Tag No.	Straight carapace (cm)		Date/time	Capture method
	Length	Width		
8909, 8910	44.8	35.5	2/11, 2030	Hand
8911, 8912, 8913	59.5	47.8	2/11, 2045	Hand
8914, 8915, 8916, 8917	66.5	50.6	2/11, 1930	Net
<b>Expedition No. 3, 27-29 April 1988</b>				
8924, 8925, 8926	71.6	55.4	4/27, 2215	Net
8927, 8928	43.0	34.7	4/27, 2000	Net
8929, 8930	42.6	33.7	4/27, 2000	Net
8931, 8932	42.7	35.3	4/27, 1855	Net
8720, <sup>b</sup> 8721	59.3	45.6	4/27, 1855	Net
3317, <sup>a</sup> 7782, (8933, 8934)	65.8	49.5	4/28, 2030	Hand
7774, <sup>a</sup> (8935, 8936)	57.3	45.3	4/28, 2030	Hand
8937, 8939	40.8	35.0	4/28, 2045	Hand
8939, 8940	49.3	38.9	4/28, 1930	Net
8941, 8942	41.9	34.3	4/28, 1835	Net
<b>Expedition No. 4, 28-30 June 1988</b>				
8709, <sup>b</sup> 8710 8711	54.3	42.6	6/28, 2300	Hand
8716, <sup>b</sup> 8717	46.0	37.5	6/28, 2300	Hand
8707, <sup>b</sup> 8708	46.2	37.4	6/28, 2300	Hand



Hand  
 CAPTURE DATE/TIME: 8-9pm 4/28/58  
 TAG RECOVERY YES NOX

TAGS - RFL 8937 LFL 8938  
 TAGS OTHER SITES =

STRAIGHT LENGTH 40.0cm x WIDTH 35.0cm  
 " NOTCH

CURVED 43.0cm x 40.0cm  
 WEIGHT - 24.0g

HEAD - 7.1cm

TAIL - 7.2cm

R.F. Flipper - 7.5cm

PLASTRON - 33.7cm

WEIGHT - 24.0g

DESCRIPTIVE REMARKS (ie tumors, abnormalities, graft spot, epizoides, etc.) =

Samples -

APPARENTLY  
 NO SAMPLES

STOMACH - yes, flush but food

BLOOD - NO

FECES -

TISSUE -

EPIZOITES -



88  
 FOUND DEAD (Gillnet?)  
 By Barbara Nichols  
 at Coconut Grove

## Summary of tagging data (Kiholo Bay).--Continued.

Tag No.	Straight carapace (cm)		Date/time	Capture method
	Length	Width		
8704, <sup>b</sup> 8705 8706	56.0	44.1	6/28, 2330	Hand
8943, 8944	42.2	34.4	6/28, 2330	Hand
8702, <sup>b</sup> 8703	45.3	36.0	6/28, 2330	Hand
8945, 8946	49.7	38.7	6/28, 2330	Hand
8947, 8948 8949	70.1	55.5	6/28, 1900	Hand
7778, <sup>b</sup> 7779 8701	61.6	50.4	6/29, 2300	Hand
8712, <sup>b</sup> 8713	45.2	36.5	6/29, 2300	Hand
3951, 3952	55.1	43.3	6/29, 2330	Hand

<sup>a</sup>Long-term tag recoveries, all of which were originally captured and tagged at Kiholo Bay. Growth data, as measured by an increase in straight carapace length, are as follows:

7778, 7779, (8701)	Originally captured 8/9/84 (3.2 yr interval). Mean yearly growth of 0.87 cm (0.34 in.).
3476, 3477, (8907)	Originally captured 10/14/80 (7.3 yr interval). Mean yearly growth of 1.77 cm (0.70 in.).
7759, 7760, (8908)	Originally captured 8/8/84 (3.5 yr interval). Mean yearly growth of 0.83 cm (0.33 in.).
3317, 7782, (8933, 8934)	Originally captured 3/21/80 (8.1 yr interval). Mean yearly growth of 2.02 cm (0.80 in.). Also recaptured 8/9/84 (3.8 yr interval since present capture). Mean yearly growth of 0.6 cm (0.24 in.).
7774, (8935, 8936)	Originally captured 8/9/84 (3.8 yr interval). Mean yearly growth of 1.13 cm (0.45 in.).

<sup>b</sup>Short-term tag recovery.

8720, 8721 8711	Originally captured and tagged 2 1/2 mo earlier at Kiholo Bay on 2/10/88 (during Expedition No. 2).
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CAPTURE DATE/TIME:  
TAG RECOVERY YES

NOX NO picture

TAGS - RFL 8946 LFL 8939  
TAGS OTHER SITES =

STRAIGHT LENGTH x WIDTH  
49.5 cm x 38.9 cm  
NOTCH injury

CURVED 52.5 cm x 46.5 cm  
WEIGHT - 37.5 lbs  
HEAD - 7.7 cm  
TAIL - 8.5 cm  
R Flipper - 9.0 cm

PLASTRON - 39.7 cm  
WEIGHT - 37.5 lbs

DESCRIPTIVE REMARKS (ie tumors, abnormalities, graft spot, epizootes, etc.) =  
- Red algae growing in cracks

#8939 Kiholo stomach 4/28/88

Gelidium pusillum	50%
Dictyota friabilis	40
Padina japonica	10
Ectocarpus sp.	Trace
Microdictyon japonica	Trace

Snail  
Sand

Samples -

STOMACH - yes  
BLOOD - NO  
FECES -  
TISSUE -  
EPIZOOTES -



- 8709, 8710 Originally captured and tagged 8 mo earlier at Kiholo Bay on 10/22/87 (Exp. No. 1). Estimated mean yearly growth of 2.4 cm (0.94 in.).
- 8716, 8717 Originally captured and tagged 4 1/2 mo earlier at Kiholo Bay on 2/11/88 (Exp. No. 2). Estimated mean yearly growth of 0 cm (0 in.).
- 8707, 8708 Originally captured and tagged 8 mo earlier at Kiholo Bay on 10/22/87 (Exp. No. 1). Estimated mean yearly growth of 1.3 cm (0.53 in.).
- 8704, 8705  
8706 Originally captured and tagged 8 mo earlier at Kiholo Bay on 10/21/87 (Exp. No. 1). Estimated mean yearly growth of 1.5 cm (0.59 in.).
- 8702, 8703 Originally captured and tagged 8 mo earlier at Kiholo Bay on 10/21/87 (Exp. No. 1). Estimated mean yearly growth of 1.5 cm (0.59 in.).
- 7778, 7779  
8701 Recaptured 8 mo earlier at Kiholo Bay on 10/21/87 (Exp. No. 1). Originally tagged at Kiholo Bay on 8/9/84. See footnote a.
- 8712, 8713 Originally captured and tagged 8 mo earlier at Kiholo Bay on 10/23/87 (Exp. No. 1). Estimated mean yearly growth of 0 cm (0 in.).

Need to break-out months for  
Seasonal variation -  
 Warm-water vs cooler months

Pond temperature =  
 Salinity =



CAPTURE DATE/TIME: <sup>net</sup> 6:35 pm 4/28/88  
 TAG RECOVERY YES NO

TAGS - RFL 8941 LFL 8942  
 TAGS OTHER SITES =

STRAIGHT <sup>21</sup> NOTCH LENGTH 41.9cm x WIDTH 34.3cm  
 injury

CURVED LENGTH 44cm x WIDTH 39.5cm  
 WEIGHT - 22.5 lbs  
 HEAD - 6.5cm  
 TAIL - 7cm  
 R Flipper - 7.4cm

PLASTRON - 30.5cm  
 WEIGHT - 22.5 lbs

DESCRIPTIVE REMARKS (ie tumors, abnormalities, graft spot, epizootics, etc.) =  
 very few skin barnacles, almost  
 no barnacles

#8941 Kinoho stomach 4/28/88

Alsidium sp.  
 Ceramium sp.  
 Dictyota friabilis  
 Laurencia sp.  
 Microcoleus sp.  
 Padina japonica

Trace  
 Trace  
 Trace  
 Trace  
 Trace  
 Trace

Amphipod  
 Maggot (?)  
 Terrestrial plant leaf material

Samples

STOMACH - yes  
 BLOOD - yes  
 FECES -  
 TISSUE -  
 EPIZOOTICS -



(Continued from p. 68)

4/28/88  
Thurs.Filipino  
fisherman-truck arrived after dark,  
parking near point on other side of  
bay.4/29  
FridayEarly morning they used a zodiac  
to cross bay and set a  
gill net across the channel.Discussion w/2 - they said they  
sometimes tangle turtles, but  
let them go, "never fool around  
w/ turtles."

Backnote:

~ 6 pm Thursday  
Marty's student saw painted  
#5 by sluice gate.Water running out rapidly.  
I watched it for ~5 minutes.Seemed to be circling about  
slowly. Feeding? NOIII algae seen, but was there  
in previous years, but maybe  
not during these months?

Survey needed.

\*

Also check further to see if  
turtles go in and out sluice  
gate.



END OF HPA #3

4/29 FRIDAY) Departed ~ 12 noon for main highway.  
147.02 + 600 repeater for Maui easily accessed w/ 5 watts, after w/ 0.5 watts.

Departed 1:25 pm Aloha for Honolulu

Kawaihae = -0 04  
Honohohau = -0 26

JUNE 88  
TIDES

MONDAY

TUES  
HA 558  
depart for KONA

WED

THURS



1 HAND CAPTURE IN SLUICE CHANNEL

SNORKLE 11-12 AM  
7 HAND CAPTURE

Saw Turtles going in & out of juice & feed in pond.

3 HAND CAPTURES

depart Kiholo



HPA #4

SNORKLE ONLY - NO NETS  
HAND CAPTURES

28 JUNE 88  
TUESDAY

called 961-7291 DOCARE 6/27/88 945AM SCP88-15

TAG/CAPTURE START p. 38+  
p. 40, 42, 46, 47, 48,  
52, 54



6/28/88 Arrived Kona ~ 3:48 pm  
 TUES. met by Joe in 4x4 jeep,  
 proceeded to Kiholo. Walked  
 in past digale for David/Key,  
 no other campers present.

Set up camp.

observed turtles head (4?)  
 off rocky island. Also in  
 front of sluice 6:15 - 6:45 +  
 Sunset (pt) ~ 7 pm.

7 - 7:30 pm repeatedly watched  
 2 small & 1 large (99 lbs) turtles  
 swimming up into strong outflow  
 current of sluice. None  
 made it all the way.

At 7:30 pm I stepped into  
 sluice 5 M from entrance  
 and grabbed turtle. Almost  
 no struggling or flight behavior.  
 Brought ashore and left under  
 ironwood tree until data  
 collection ~ 11 AM 6/29 Weds.

Hamburgers/holdays for dinner.

Snaked for hand capture in lagoon  
 at 11 AM - midnight. 7 captures  
 3 misses. Several eels seen.  
 No wind - full moon. Warm.  
 Relatively clear water for here.

Filled 2 Tubes, so didn't get to end of lagoon pond.



Modify wetherall  
addendum in 2008  
Rec. Plan to  
include 1982 PFS.

## NEEDS FOR NEXT TRIP:

- 1.) Scoop net - Medium length handle for capturing turtles in sluice
- 2.) Short piece of narrow net for sluice
- 3.) New "PAM" spray, or equivalent
- 4.) Cost for Mohokai trip? FAMILY DISCOUNT? / ALONA STADIUM AUDIENCE  
HAWAIIAN
- 5.) Aerial Photo of Kiholo - or from Highway
- 6.) Kiholo & Hind street signs - ANA HAINA
- 7.) Small can of spray paint
- 8.) Repair wet suit

6/29/88 Worked up turtles all Wednesday morning at Cove-beach. Rigged blue tarps for shade. Used "green fluorescent" spray paint for short term ID numbers so we don't exert effort hard catching the same ones tonight. Traps came up for awhile 10<sup>AM</sup> 3pm then died down. David & Lisa swiveled for algae 330-430pm. SEAWATER off ironwood = **28°C**. Low tide in the morning - I saw reddish & greenish + mollusks all over INTERTIDAL lava rock. NO SPRINGS NOTED.

grazed-down appearance?  
little present here  
on previous winter  
trips?



Wednesday 4pm observations from chair on beach

6/29 5:30 pm - turtle seen close to shore - pebble beach / sluice region. Sun low in sky. High tide 2+47 was at ~4pm.

David saw a small shark. Collected Gelidium off dead coral rocks off rock islet where I saw turtles feeding late yesterday afternoon. Also "red filaments" - type of cement mering found in bay. "papaya" "spiced" algae in areas examined. Water turbid low visibility.

6pm Observed a small turtle feeding just inside large pond past deteriorating sluiceway. Top of high tide was at ~4pm, but black water in sluice didn't happen until ~6pm. At ~6:30pm

I saw a turtle go out sluice. Later one tried to come in - made it to gate, but left when I tried to grab it from the bridge walkway. No turtles been mulling around entrance to sluice, like last night. Walked along the edge of pond and saw 5 or 7 turtles, at least 2 large (70-80 lbs)





PARTICIPANTS

Anacystis marina\* (see my notes on this species) 99%  
 = Microcystis spp.)  
 = Microcystis litoralis (possibly)  
Oscillatoria margaritifera\*

1

LISA UTTAL → Monterey Bay Aquarium see p. 112  
 EBON ANDREWS  
 Shannon PUSTKA  
 MALIA FANN  
 TERRI IMPSON  
 Joe  
 JASON P. → tel 883-8074 Box 2537  
 JENI Mackenzie  
 David Golko

requested  
 further  
 involvement

among them. All seen in a specific  
 area almost certainly feeding on  
 the bottom. The next morning  
 at low tide this was seen to  
 be a sandy-mound area with  
 green (epicellular) algal "soup"  
 settled on the bottom. Were  
 they feeding on this?? Sample  
 \* taken for ID. ABOVE  
 No turtles seen in pond at  
 same site 8 AM.

Mitchell  
 CHINESE DISCUSS

6/29  
 Wed.

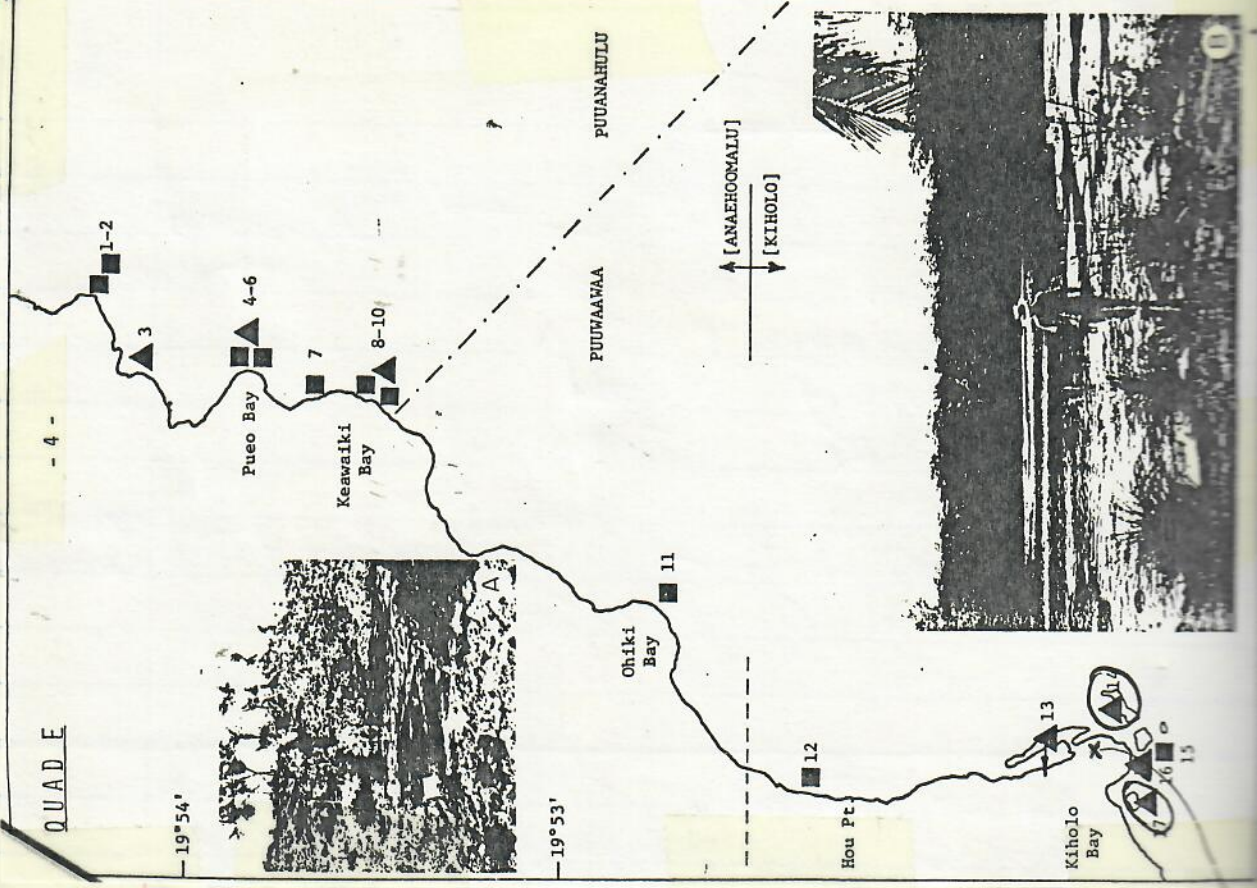
Snorkle ~ 10:45 - 11:30 pm

Everyone except Joe.  
 Three hand captures.

2 - Jason-Ebon; 1 me,  
 2 misses. No paint no. seen.  
 (CONT. p. 110)



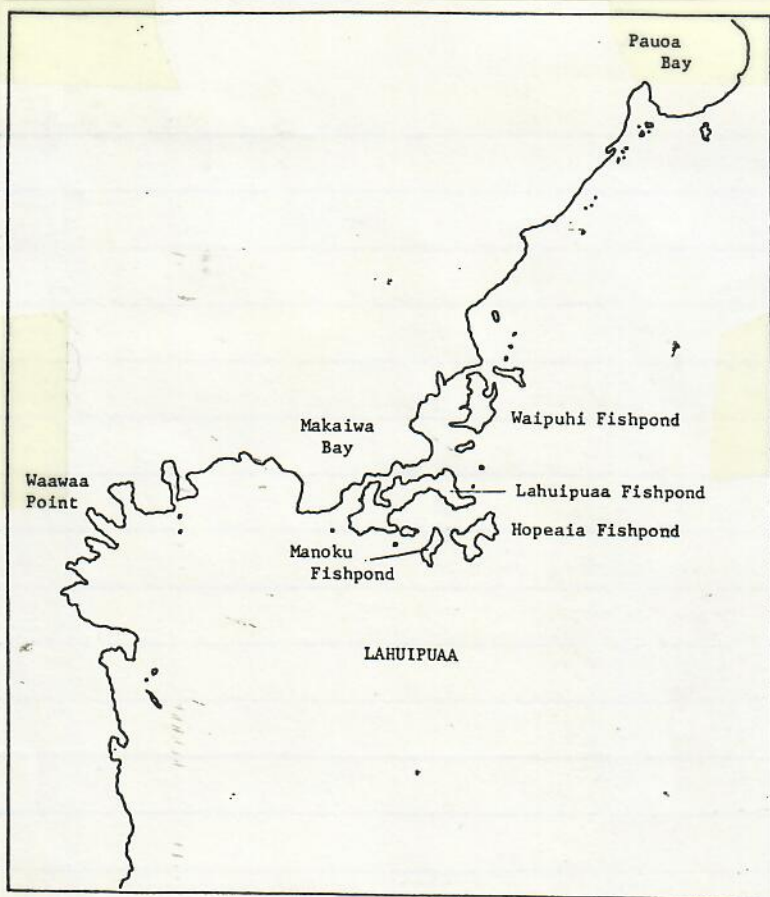
QUADE E



TAXONOMIC LIST AND DISTRIBUTIONS OF LESS-COMMON FAUNA  
OF CLOSED PONDS, KONA COAST, HAWAII

- A. Porifera (sponges)
  - Unidentified species: X-5
- B. Coelenterata
  - Hydrozoa (hydroids). *Ostromouvia horii*: K-1
  - Anthozoa (anemones, etc.) Unidentified species: J-7
- C. Mollusca
  - Gastropoda (snails)
    - Melampus parvulus*: H-4; J-45; K-22
    - Theodoxus vespertina*: E-14,16; H-9; K-3,10,24
    - Merita pollita*: K-16,30; X-2
    - Meritilia* sp.: F-5; J-45,47
  - Unidentified red species: E-15
  - Pelecypoda (clams, etc.)
    - Isoognomon californicum*: D-17
    - Unidentified species: S-1
- D. Anthropoda
  - Isopoda (pill bugs, etc.)
    - Unidentified cymothoid species: X-5
  - Decapoda (shrimps, crabs)
    - Alpheus crassimanus*: J-46
    - Antecaridina lauensis*: V-1; X-5
    - Procaris hawaiiensis*: X-5
    - Calliasmata pholidota*: X-5
    - Unidentified xanthid crab: D-60
  - Insecta
    - Unidentified beetle: F-1; G-15; H-23
    - Unidentified mosquito: F-1; O-1
    - Unidentified midge: D-47
- E. Chordata (vertebrates)
  - Pisces (fishes)
    - Abudefduf abdominalis* (Mamo): D-61; F-5
    - Abudefduf sordidus* (Kupipi): D-3,54; E-3; H-1,20,30; U-4
    - Acanthurus achilles* (Pakuikui): H-9
    - Acanthurus sandvicensis* (Manini): D-2,3,56; H-2,8,20,21; U-3
    - Adioryx* sp. (Alaihi): D-55
    - Awaous genivittatus* (Oopu kanio): D-36
    - Bathygobius fuscus* (Oopu kai): D-32; H-8,30; J-46; M-6
    - Chanos chanos* (Awa): E-3
    - Conger* sp. (Puhī uha): C-10
    - Cyprinus carpio* (Koi-exotic): E-3,9
    - Kelloggella oligolepis*: D-32,33,45
    - Neomysis chaptalii* (Iououa): H-9,20
    - Sphyræna barracuda* (Kaku): E-14
    - Reptilia* (turtles, etc.)
      - Chelonia mydas* (Honu): E-16,17; H-23





Important Kona coast pond sites: ponds of Lahuipuaa Land  
Division, South Kohala District.  
Scale = 1:12,000 (1 cm = 120 m).

## Kiholo #4 Reef collection

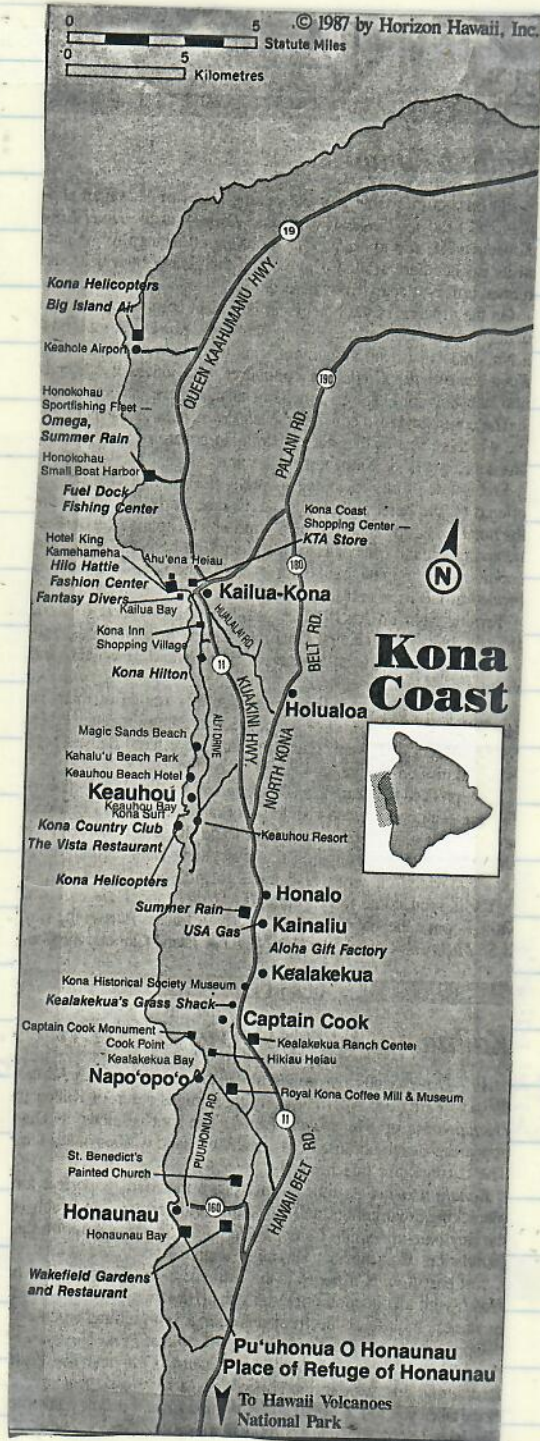
Reef #1 Kiholo 6/88

<u>Alsidium</u> sp.*	60%
<u>Gelidium pusillum</u>	40

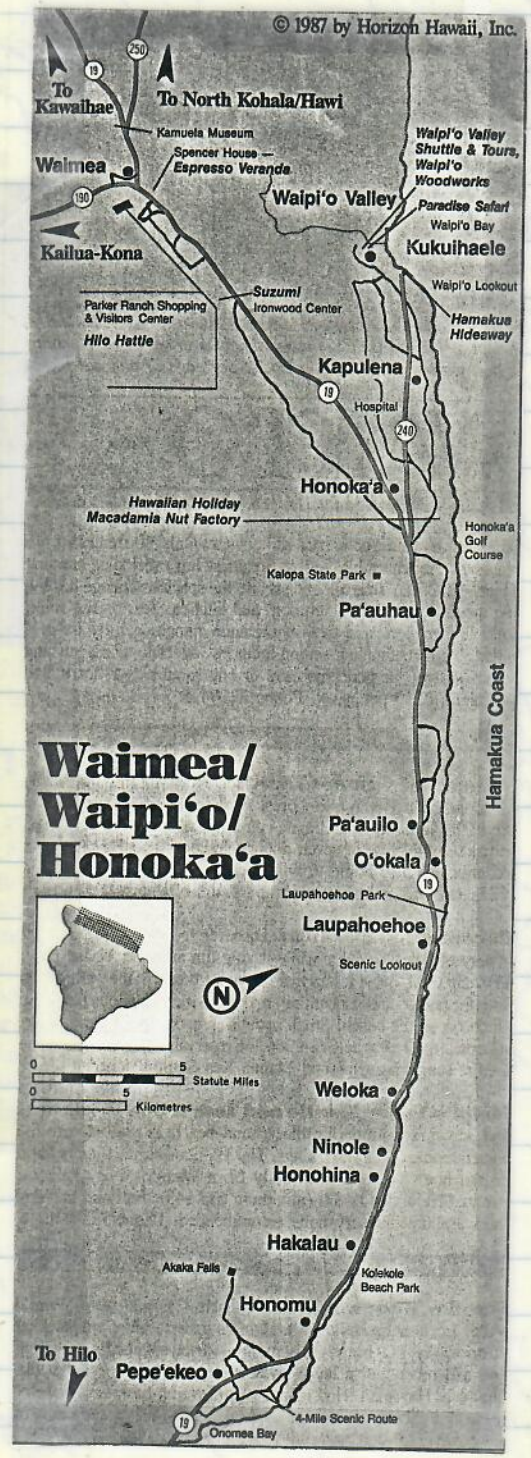
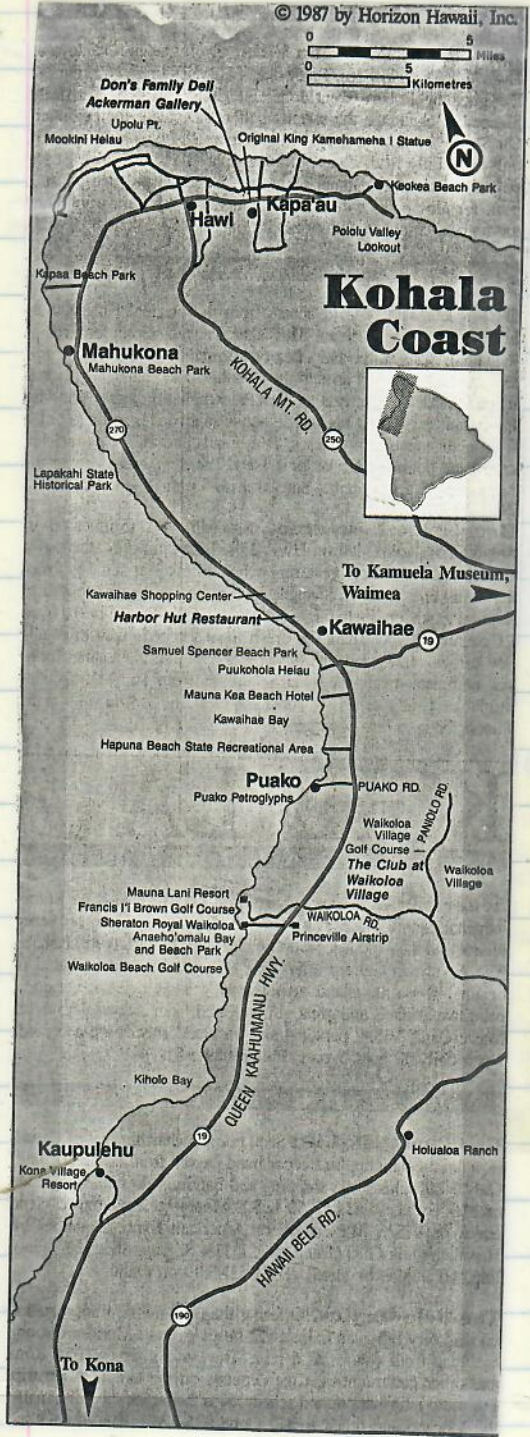
Reef #2 Kiholo 6/88

<u>Polysiphonia tenuis</u>	50%
<u>Tolypocladia calodictyon</u>	50
Diatoms	Trace
Boodlea sp.	Trace
<u>Chondria tenuissima</u>	Trace

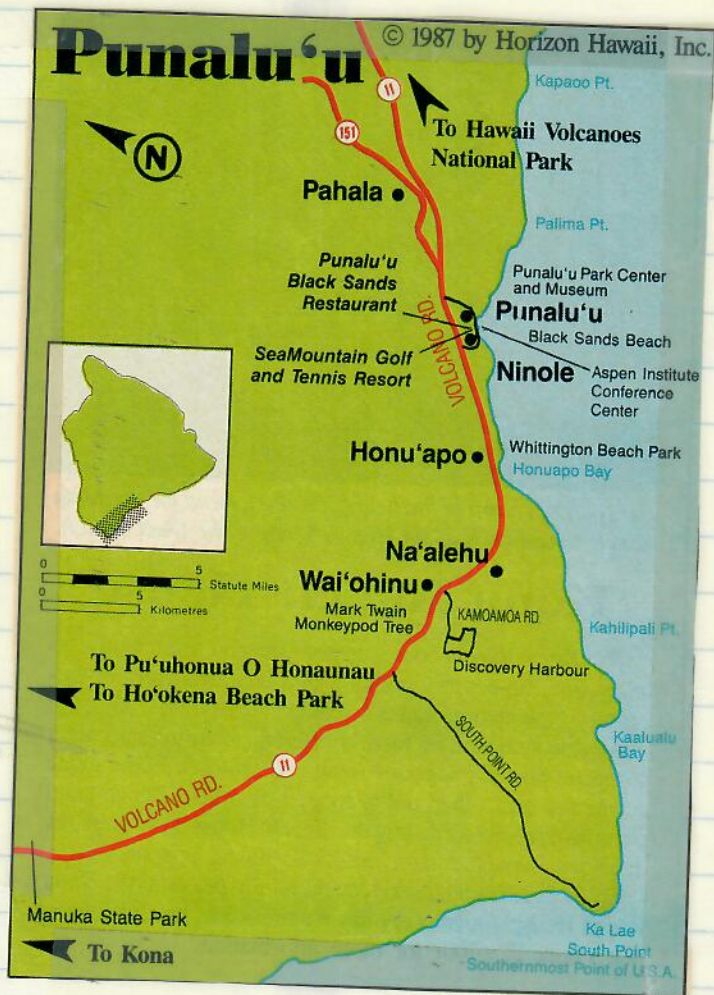














LAVA FLOW OF

Hou Point

BAY

KIHOLO

Spring

Spring

Keamale Waterhole

Wataaleps

Viewpoint

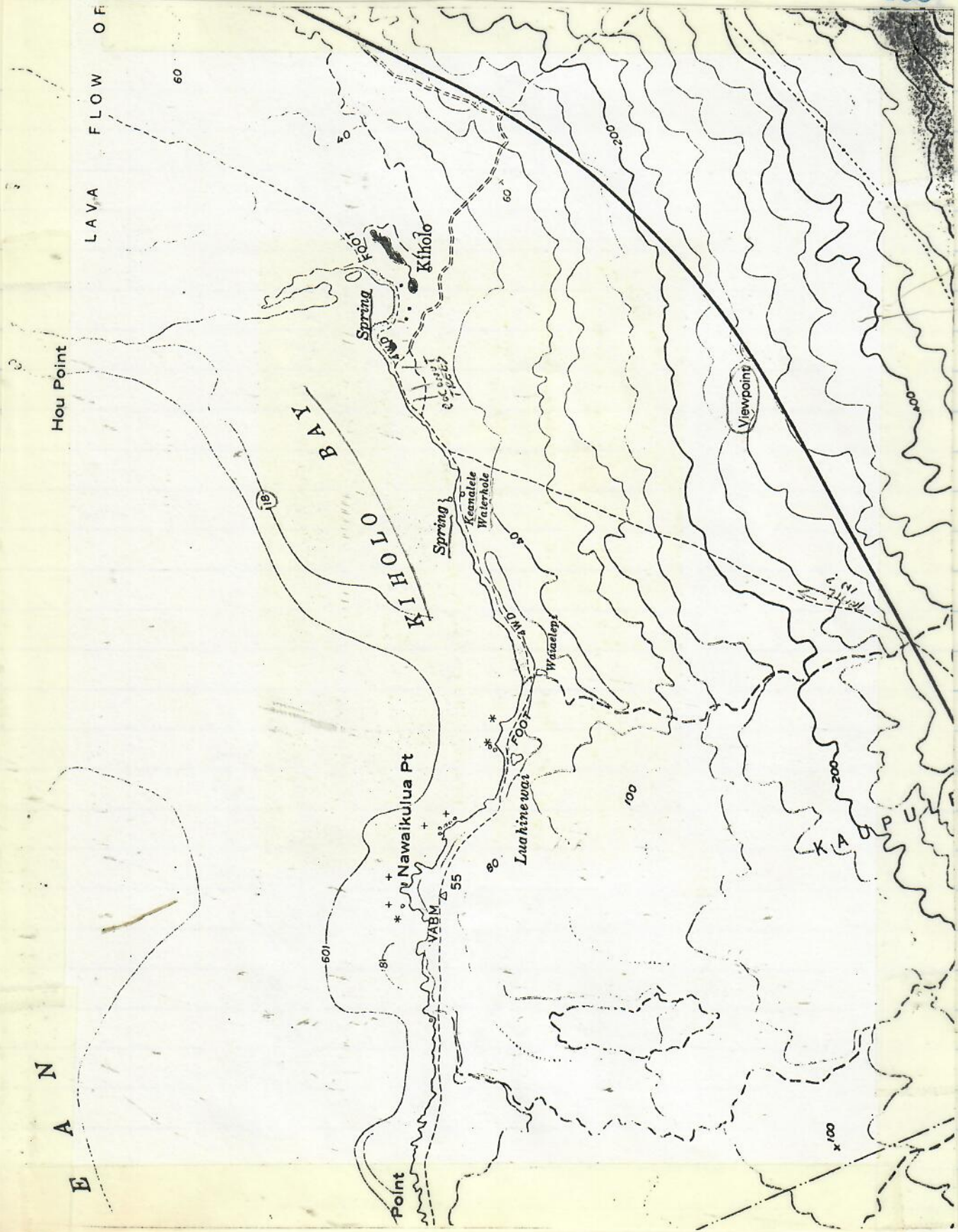
Nawaikulua Pt

Luahinewai

KADUPU

E A N

Point





- EXP. 5<sup>th</sup> to K. Holo
- HISTORY
- 1 14-15 MAY 1973 (15 CAPTURES - size applied to each)  
6 years 10 months
  - 2 18-21 MARCH 1980 (14 captures, with 2 short reports)  
7 months
  - 3 14-20<sup>th</sup> OCTOBER 1980 (23 captures, & 4 short reports)  
5 months
  - 4 5-7 MARCH 1981 (7 CAPTURES, 5 long term & 20 short reports)  
3 years 5 months
  - 5 7-10 AUGUST 1984 (22 CAPTURES with 5 long term and 2 short reports)  
2 1/2 weeks
  6. 29-31 AUGUST 84 (9 CAPTURES with 4 short term & 40 long term individuals)  
Kaim & Salas  
3 YEARS 2 MONTHS
  - 7 21-23 OCTOBER 87 (HPA #1) (44 individuals)
  - 8 10-12 FEB. 88 (HPA #2)
  - 9 27-29 APRIL 88 (HPA #3)
  - 10 28-30 JUNE 88 (HPA #4)
  - 11 26-28 OCT 88 (HPA #5)
- 7 AUGUST 1984 (TUESDAY)  
Depart Mid-Pacific for Hilo at 6:00pm -
- Notes - Of the total number of named fish ponds in Hawaii, how many have any reference to turtles?
- Recall that Gene Williams previously visited Hawaii's northwestern Big Island and saw fresh turtle tracks nearly to Hilo. Mentored some things about Fremont (FIRST STREET POST OFFICE) MR. HINDS  
Sunset to 4:00  
Then right to - owo Marben
- Spent night of 8/7 at the Hilo Hotel after driving to the Harper 4-wheel Bronco from the airport.  
8 Aug. 84 Met Rudy and Bill Brooks at the weekly Mop office, loaded all gear, went shopping at KTA and departed via Hamakua Coast for Kiholo ~ 12 noon.  
Went to Hilo's house to pick up 3 keys for new gates - system of roads. Office at Haysmall's - then drove to Kiholo - going over bridge near new out-house, through shallow water, to campsite by large ironwood



16  
 1st sent  
 8 (wed)  
 AUGUST 84  
 D.

ELVIN K. HAO  
 HONOLULU 775-7349  
 - 96737

(Son of HILCO CARPENTER  
 DURING THE 1950s)

Met the above man and his family - hadn't been here in 2 years. Stated that his father was the caretaker during the 1950s.

2 nets oval float, and 1 oval "white" float combination net, and 7 net set - 2 sail, both joined inside pond - Monitor walk to from Branco

First captures at 8:30 pm - tag recovery 3497 + 1, tag: 3488 Bpov.

All captures at night, I set 9:30 am 8-8-84.

-8-9 worked up the 12 turtles on the small black-sand beach starting ~ 6:15 am before sunrise - Randy and Bill retrieved 3+ turtles 4-5 hrs while I helped from shore.

11 pm 8-8 smoked throughout entire perimeter of pond, neglected in 4 captures of pond, medium not too far from net base and 3 very small all within a short distance of each other. In the nearly back of the pond we found a large turtle, old fouled tags, oval of one flipper -

681

It flipped free of tube and got away. Nether showed up in the net the following day. Saw and missed another one.

8-9 During tagging the problem was encountered of Uplers (old style sent by NBT) not locking - bending over the point of the tags. All had to be manually done.

Tangled measurements, weighing and release ~ 11 am. 1 pm when we pulled back net to allow high tide.

Narrative continued Book 4, PAGE 4 - DATA for TOTAL OF 22 captures on following pages 98-117.



4 7-10 AUGUST 84  
(CONTINUED FROM P. 117, BOOK 4)

TAG DATA OF 22 TURTLES CAPTURED (20 INDIVIDUALS)  
APPEARS ON PAGES 98-117, BOOK 3.

8-9-84 No captures during the day. After  
Thursday 6pm I worked net above - 6:30pm  
saw a turtle let - acted like a  
ray at first, since it didn't surface for  
at least 5 minutes. Between  
6:30 - 8:15am, caught 7 turtles total  
in net - Bill and I handled  
them. Included 1 to recovery  
with heavy growth.

NIGHT 10 total daylight - 2 repeats from  
night 1; 1 long term recovery.

Smoked entire pond (edge again)  
(lava rock side only) - Bill & I  
caught 1 turtle and missed 1.  
Following worked Bill & I took  
nets out at 1:30am by being  
up & flats together and rolling into  
tide. Left from 2-6am  
leaving smaller trawl left 2-3am  
up flow-high tide.

In the afternoon of 8-9 Thursday or  
very small my note found by the  
"island" side of net - I  
untangled it - swam away  
abruptly.

8-10  
Friday At 7-6:30am I worked up

note - Mosquitos at night under ironwood tree  
while sleeping in cell of Bruce.

the turtle - joined by Bill Brooks at  
9am. Finished about 11am.  
Ate breakfast and packed all gear.  
Saw Andy Shule, who came down to picnic  
with a large group. Stan Sverdliff due to  
arrive later.

Departed ~ 12:30pm - to keys back to  
Mr. Hinds house - saw many these  
and commented about seeing 10 while  
diving at night in pond - saw a week  
there.

No sign of "ghosts" seen on any of the  
small "imbricat" turtles.

Looked for <sup>(15:00)</sup> Washington place in Hanalei  
District where painted turtle was sighted.  
Could figure out how to get to the boat  
through sugar cane. Departed in  
Unpacked gear, and  
Michael's flight 6pm arrived in  
Honolulu at 7pm.



# KAM & BARAZ'S

29

Aug 84 Arrived at Kiholo ~ 3:30pm -  
D set up camp near ironwood tree.  
Blue power boat, and tarp-camp,  
on Peninsula.

At small beach we met -

PAUL & BARBARA GAWLEY

1582 St. Louis Drive

HONOLOLU HI 96816

TEZ. - PAUL MOLLIN GAWLEY, ATTY.

CHUN, KERR & DODD - 531-6575

Daughters Shama & Intertid

in turtles. Daughter of H. Portera -

visited here during the summer when

growing up. Remembers seeing

many turtles entering & leaving inlet-

beach in bay. Heard of breeding

in Kiholo in the past.

Paul expressed interest in establishing

a nesting area here - making a

beach (turtles bringing in eggs (many) 10 yrs

ago kept ponds there put in ponds -

to be the same sleny of algae - thought

of that time. - turtles disappeared

from ponds - people told them

they would crawl out - to the

ocean, especially when it was

"mating time." Barbara said that

booy fishing, and sometimes

shooting, used to be

acred, at times when they

29 Aug

visited Kiholo.  
Stark & dinner cooked over campfire.  
Rain, heavy at times, constant between

9-11pm  
Grovehale inlet  
Caught 5 turtles (put them all into the tube)

4 were regurgitated from 8-10 Aug 84 trap.  
Saw 5 others - 3 swimming when

first seen - 2 in nest sleeping but

came out rapidly (one lay <sup>est</sup> > 100 ft)

overcast - black out - got dizzy at

times due to cloudy viewing with

small flashlight.  
Fish brought into our hands. -

possible beyond from pointy beak of

stick fish.

30 Aug 84 Collected data on turtles 6:45 am -

Thursday 8:30 am on sand beach with

Gawley's assistance. -

Ate lunch wrote up notes -

At 12 noon low tide we provided

the perimeter of the entire inlet, including

ocean (peninsula side). Upper layers of

fresh water very visible - cloudy

part water with throat - "peaks" of

rocks reaching into freshwater

look like. Mountains above clouds -

like a view from a high altitude



30

1 AUGUST 84

In the very back of the inlet we found a couple of freshwater discharges boiling to the surface. No turtles seen - no evidence of turtles having swam out - seeing one before we saw them. Also, two signs of cloudy area.

Stopped and talked to 2 men camped from fishing boat - mentioned seeing large turtle offshore - and that nets (for shule?) were frequently set off end of peninsula & across channel entrance. Man commented that they rarely catch turtles. Lobster (season starts tomorrow) - many expected to be camping here starting tomorrow - Friday. Along the peninsula, the water was much clearer - but still a prominent freshwater layer. Drop off is fairly steep in many areas - but no turtles seen at the bottom.

Slept for an hour + between 2-3 pm. (floats) set 2 sections of net at 5 pm. (floats) (net combination). Starting ~ 6 pm, caught 4 turtles total, 3 untagged, 1 tag recovery old. Net taken out ~ 9 pm; 4 hours fishing total. Tag recovery: 1 untagged in 1 net.

47

8/30 Thursday to ironwood tree. Remaining turtles left on beach - processed shortly after first light. With the start of labor day weekend, I was concerned about someone coming in across the lava flow to camp and fishing turtles. UH sign left by turtles. Earlier this afternoon, several boats pulled in and a large "blue-top" composite were set up. 2 + lights (electric?) were brilliant from sunset on.



31

7/6/84 Following data work-up and  
dry release of Chittles, we analyzed  
water samples taken:

1. Shinc runway - seaward of  
Makaha: 10 AM

NITRATE - 0.15

PHOSPHATE - 8

SALINITY -

TEMPERATURE - 24.5°C

2. Kiholo - ocean 10:30 AM -  
off rocks in front of ironwood:

NITRATE - 0.04

PHOSPHATE - 2-3 (?)  
(early faint blue visible)

SALINITY -

TEMPERATURE - 27°C

53

31 Aug 84 Between 11am 12 noon I hiked above  
Friday to the far end of inlet - photos taken.

3/4 distance at 11:00am <sup>Temperature of</sup>  
visible seep was 19°C <sup>at some spots.</sup>  
3/8 in seep bubbling from bottom - 26°C

Creek seep at end - 23°C

Some salt tasted, but certainly drinkable.

Notes - Black lava - very hot - red hot heat.

- when tide rises, does ocean water  
percolate up from seeps?

- Farthest seep - water sampled + photo - 23°C

NITRATE - 0.18

PHOSPHATE - 1 (?)  
(almost no blue)

SALINITY -

Departed Kiholo and returned <sup>they</sup>  
to Hiy's house. Drove to Hilet via  
Hamakua coast. Stopped at <sup>TEX SEWE IN.</sup>  
Centrifuged blood at MPP office -  
unloaded at boat shed. <sup>11</sup>  
Returned station wagon at Hayes - departed  
at M.D. ACIFIC at 6 am -



6/29/88  
Wed.

21.5°C at very end of inlet. 22°C at the surface while swimming back with turtles in tubes. Only a few  $\frac{1}{2}$  beaks seen. Freshwater infusion seems much less compared to past trips. Lots of eels reportedly seen.

6/30/88  
Thursday Jason, Lisa & I collected data on turtles and released them. One of the 3 caught was the forced submergence turtle that had to be resuscitated on HPA #1 Oct 87. Departed Kiholo 8:30am after I walked around and floated ponds etc. <sup>ASA 400</sup> Proceeded to HPA. Lunch at Deli in Waiwea. TO Mauwa Loni 12:30 pm to top/insect turtles in ponds by Charles Darbach.

NAME?  
ADDRESS?

Hwd's daughter reported to David that turtles gathered at pond entrance when they opened gate. They would eat algae washing out of pond.

Man on sail boat said he saw turtles at "Kahui" Bay -- near South point.  
Arrive Hono H 137 445 pm.



LISA  
DAVID  
CHARLES DAX  
GENEVITHA

TAG #  
10551 RFL  
10552 LFL  
10553

6/30/88 MAUNA LANI HOTEL  
1PM POND

MAX 111  
MANAGER

+ Norman AHI

K-front #34  
distal  
Turtle #1

Turtle #2

TURTLE #3

Plastron 55.6  
head 9.6  
tail 19.5 (likely ♂)  
Rt front flip 11.6  
wt 104 lbs

54.7  
10.0  
12.5  
10.7

88 lbs

44.9  
8.2  
10.3  
8.7  
55.5 lbs

SL 66.6  
65.9

S- 67.2 SW 54.2  
N- 67.0

S 55.7 SW 42.9  
N 55.2

SW- 52.9

C- 73.5 x 67.0  
Tag # 10554 (THROUGH PARTIAL HOLE) left front fl.

C 61.0 x 53.0  
Tag # 10557 rt front 3-4

C 71 x 65.5

Tag # 10556 left front (3-4)  
Tag # 10555 right (3-4)

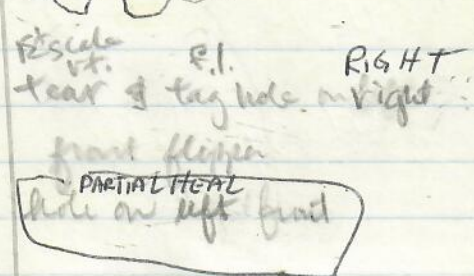
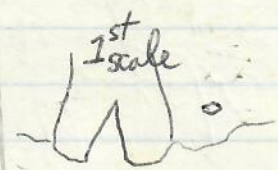
Robust plastron.

NOT Robust

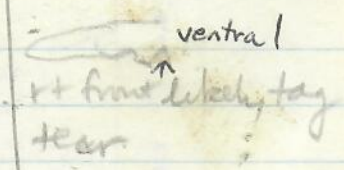
Tag # 10558 left front fl (ex)

Now measured

3/8/92  
SL = 66.9 x 51.8  
CL = 71.0 x 65.0  
weight = 100 lbs  
TAIL = 27.5 (18.0)



Tag # 10559 rt rear RHIND

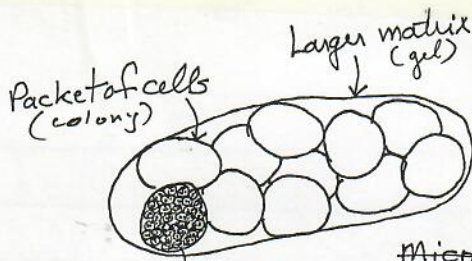


KIHOLE-TAGGED TURTLES  
THAT COOPER TORE TAGS  
OUT OF?

4th TURTLE IN POND NOT ABLE TO CAPTURE.  
Lecture at Mauna Lanii



see p. 97



Microcystis litoralis (Hansg.) Forti

2.0um dia cells

= Anacystis cyanea (Kütz) Drouet

= A. marina (Kütz) Drouet & Daily



Oscillatoria margaritifera Kütz

17.2um wide, Dark-blue-black color, single, straight

George,

11-88

I spent more time than usual on some of these samples, because of the tiny red fragments. Notice the drawings I've included to describe Alsidium sp., I still do not have a species for this genus, but at least it will be recognized without problems in future samples.

Also, note the description of Anacystis marina and Drouet's key. He put dozens of Microcystis species into synonymy with Anacystis, many being quite vague. Just be aware that what you have in the pond is a tiny blue-green cyanophyte, originally called Microcystis (probably M. litoralis), but now called Anacystis marina by many authors. That is probably the best I can do right now. Notice the key distinguishes two species by the characteristic of floating or not! A terrible characteristic. Blue-greens are noted for their high protein content, but some are also poisonous. Also, there were egg-like cells in the sample (48.0-55.9 um diameter).

I did not identify the diatoms to species, but they were mostly common epiphytes on algae or found in waters all the time. They were Melosira nummuloides (Dillwyn) Ag., Coscinodiscus marginatus Ehrenberg, Cocconeis scutellum Ehrenberg, Licmophora sp., Navicula sp., Surirella sp. and Pleurosigma sp. These are probably incidental to your study.

Thank you for the article with Anacystis in it. It helped. I am progressing on the next set of samples now. I did receive two POs for 25 samples each, you were 10 in dept, and with this report (17), it comes to 50 - 27 = 23 credit. With this report you now have 23 samples to your credit.

Lew Consiglieri (EPA & NOAA) lives on the same street with me. He says he worked with you when he was in Hawaii a few years ago. Do you know him? I will be on Maui, at Camp Pecusa, Olowalu, from 10 December to 22 December, 1988, with a class. Sue and I have to return with them, however, and will not be stopping on Oahu for long. Have a great holiday, George. I will get the next set of identifications to you before long.

Aloha,

Dennis

see p. 114



SUMMARY OF TAGGING DATA FOR THE HPA/NMFS GREEN TURTLE RESEARCH PROJECT  
AT KIHOLO BAY, HAWAII

Compiled by G. H. Balazs *for HPA*

Tag No.	Straight carapace, cm		Date/time	Capture method
	Length	Width		
Expedition #1, 21-23 October 1987				
*7778, 7779, (8701)	60.6	49.1	10/21, 2230	Hand
8702, 8703	43.4	34.8	10/21, 2245	Hand
8704, 8705, 8706	55.0	43.0	10/21, 2300	Hand
8707, 8708	45.3	44.9	10/22, 1800	Net
8709, 8710, 8711	52.7	--	10/22, 1545	Net
8712, 8713	45.1	36.4	10/23, 0320	Net
Expedition #2, 10-12 February 1988				
8714, 8715	42.4	32.9	2/11, 0120	Net
8716, 8717	46.1	37.8	2/11, 0015	Net
8718, 8719	45.6	35.1	2/10, 2230	Hand
8720, 8721	59.2	45.6	2/10, 2300	Hand
8722, 8723	46.5	37.9	2/10, 2330	Net
8724, 8725, 8902	58.7	47.6	2/10, 1830	Net
8903, 8904	39.1	32.9	2/11, 1830	Net
8905, 8906	41.6	34.7	2/11, 1835	Net
*3476, 3477, (8907)	64.3	51.8	2/11, 1845	Net
*7759, 7760, (8908)	56.5	44.9	2/11, 1930	Net

SUMMARY OF TAGGING DATA--Continued.

Tag No.	Straight carapace, cm		Date/time	Capture method
	Length	Width		
8909, 8910	44.8	35.5	2/11, 2030	Hand
8911, 8912, 8913	59.5	47.8	2/11, 2045	Hand
8914, 8915, 8916, 8917	66.5	50.6	2/11, 1930	Net

\*Long-term tag recoveries, all of which were originally captured and tagged at Kiholo Bay. Growth data, as measured by an increase in straight carapace length, are as follows:

7778, 7779, Originally captured 8/9/84 (3.2 yr interval).  
(8701) Mean yearly growth of 0.87 cm (0.34 in).

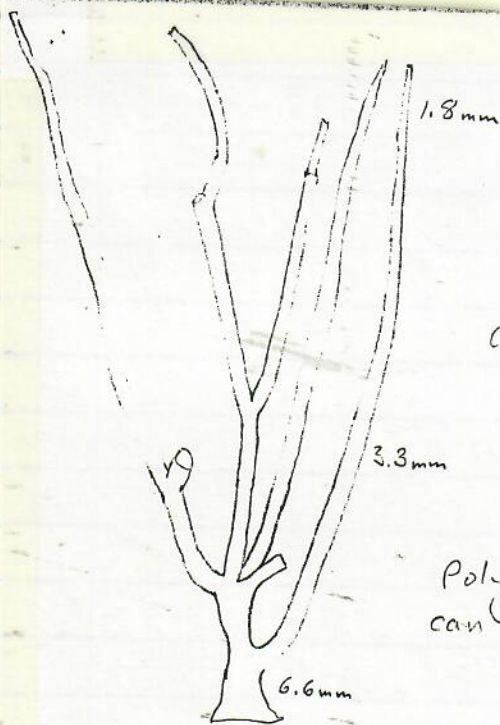
3476, 3477, Originally captured 10/14/80 (7.3 yr interval).  
(8907) Mean yearly growth of 1.77 cm (0.70 in).

7759, 7760, Originally captured 8/8/84 (3.5 yr interval).  
(8908) Mean yearly growth of 0.83 cm (0.33 in).

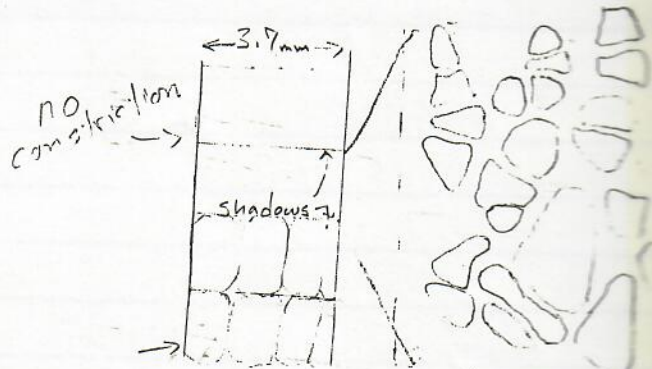


Tag retention data for green turtles recovered at Kiholo Bay, Island of Hawaii, during August 1984.

Recovery	Number of tags applied	Elapsed time in the wild (years)	Growth in straight carapace length (cm)	Number of tags shed
1	2	4.4	42.3-53.4(11.1)	0
2	2	3.8	52.9-62.3 (9.4)	0
3	3	3.8	58.5-69.6(11.1)	0
4	2	3.8	57.9-68.0(10.1)	0
5	2	4.4	49.4-63.5(14.1)	0



see p. 112



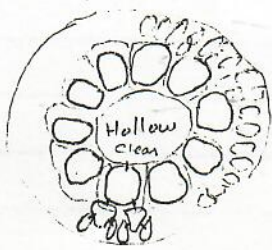
Polysiphonous cells can be seen in young tips

Surface cells 10-20µm dia. cortical cells

Height

Alsidium sp.

Alsidium



X-section

10-11 peripheral cells around a hollow core

Tough, cartilaginous thallus, difficult to slice.



HAWAII PREPARATORY ACADEMY  
TEACHING DAYS CALENDAR 1987-88

MONDAY TUESDAY WEDNESDAY THURSDAY FRIDAY SATURDAY

O - Marking periods  
\* - Graduation

SEPTEMBER

14	8	9	10	11	12
21	15	16	17	18	19
28	22	23	24	25	26
	29	30			

OCTOBER

5	6	7	1	2	3
12	13	14	8	9	10
19	20	21	15	16	17
26	27	28	22	23	24
			29	30	31

NOVEMBER

2	3	4	5	6	7
16	10	11	12	13	14
23	17	18	19	20	21
30	24	25	THANKSGIVING BREAK STARTS		

DECEMBER

7	1	2	3	4	5
BREAK	8	9	10	FINALS WEEK	-X'MAS

JANUARY

4	5	6	7	8	9
11	12	13	14	15	16
18	19	20	21	22	23
25	26	27	28	29	30

FEBRUARY

1	2	3	4	5	6
8	9	10	11	12	13
15	16	17	18	19	20
22	23	24	25	26	27

MARCH

7	1	2	3	4	5
28	8	9	10	11	SPRING BREAK
	29	30	31		

APRIL

4	5	6	7	1	2
11	12	13	14	8	9
18	19	20	21	15	16
25	26	27	28	22	23
				29	30

MAY

2	3	4	5	6	7
9	10	11	12	13	14
16	17	18	19	20	21
23	24	25	26	*27	FINALS WEEK



NEED = PHOTO OF ALL  
TURTLES - ESPECIALLY RECAPTURED

## Summary of long-term recoveries of green turtles made at Kiholo Bay, Island of Hawaii.

Tag No.	Tag loss	Date recovery and length (cm)	Date/location originally tagged and length (cm)	Interval		Mean yearly growth rate	
				Months	Years	(cm)	(in.)
3313, 3314	0	8/8/84 (53.4)	3/21/80 Kiholo (42.3)	53	4.4	2.51	0.99
3496, 3497	0	8/8/84 (62.3)	10/17/80 Kiholo (52.9)	46	3.8	2.45	0.96
3478, 3479, 3480	0	8/8/84 (69.6)	10/15/80 Kiholo (58.5)	46	3.8	2.90	1.14
3487, 3488	0	8/8/84 (68.0)	10/16/80 Kiholo (57.9)	46	3.8	2.63	1.04
3317, 3318, (7782)	0	8/9/84 (63.5)	3/21/80 Kiholo (49.4)	53	4.4	3.19	1.26
3499, 3500 3501	0	8/30/84 (66.3)	10/18/80 (57.8) Kiholo	46	3.8	2.21	0.87
HPA #1 7778-7779 (8701)	0	10/21/87 (60.6)	8/9/84 (57.8)	38	3.2	0.87	0.34
HPA #2 3476, 3477		2/11/88 (64.3)	10/14/80 (51.4)	88	7.3	1.77	0.70
HPA #2 7759, 7760 (8908)		2/11/88 (56.5)	8/8/84 (53.6)	42	3.5	0.83	0.33

	NO. TURTLES	SHORT TERM RECAPTURES	TOTAL CAPTURES	LONG TERM RECAPTURES from Punaluu	Long distance recaptures (FFS)
Lelewi -	4	0	4	0	0
Honolulu -	3	0	3	0	0
Punaluu -	75	21 (3 of which were recapt. twice)	96	2	1
Kiholo -	25	6 (of which none were recapt. twice)	31	6	0
PUHI -	2	0	2	0	0
	<u>109</u>	<u>27 (24 turtles)</u>	<u>136</u>	<u>13</u>	<u>1</u>

HPA #3 3317, 7782  
(8933, 8934)

7774 -  
(8935, 8936)

HPA #4 see typed summaries



see  
p. 104

18-20 MARCH 1980  
(3297-3322)  
14-20 OCT. 1980  
(3400-)  
5-7 MARCH 1981  
(3526-3530)

7-10 AUG 1984  
29-31 AUG 1984

8/08/84	3313-14		53.4	43.0	Kiholo
8/08/84	7751-52	HPA#5	38.3	31.2	Kiholo
8/08/84	7753-54		38.4	30.9	Kiholo
8/08/84	7755-56		42.7	35.7	Kiholo
8/08/84	7757-58		50.6	39.2	Kiholo
8/08/84	7759-60		53.6	42.2	Kiholo (2-11-88)
8/08/84	3496-97,	7761	62.3	49.5	Kiholo
8/08/84	3478-80		69.6	53.3	Kiholo
8/08/84	7762-63		56.0	43.1	Kiholo
8/08/84	7764-65		62.6	50.0	Kiholo
8/08/84	3487-88		68.0	52.2	Kiholo
8/08/84	7766-67		48.3	36.2	Kiholo
8/09/84	7768-69	HPA#5	42.1	34.3	Kiholo
8/09/84	7770-71		38.0	31.9	Kiholo
8/09/84	7772-73		53.0	44.2	Kiholo
8/09/84	7774-75		53.0	41.3	Kiholo (4-28-88)
8/09/84	7776-77		52.8	41.1	Kiholo
8/09/84	7778-79		57.8	47.0	Kiholo (10-21-87)
8/09/84	7780-81		65.7	52.9	Kiholo
8/09/84	3317-18,	7782	63.5	48.3	Kiholo (4-28-88)
8/09/84	3313-14		--	--	Kiholo (recapture from 8/8/84)
8/09/84	3478-80		--	--	Kiholo recapture from 8/8/84
8/30/84	3496-97,	7761	62.1	--	Kiholo (recapture from 8/8/84)
8/30/84	7768-69		42.1	--	Kiholo (recapture from 8/9/84)
8/30/84	7766-67		48.2	--	Kiholo (recapture from 8/8/84)
8/30/84	7751-52		38.5	--	Kiholo (recapture from 8/8/84)
8/30/84	7783-84		40.0	--	Kiholo
8/30/84	7785-86		51.2	39.8	Kiholo
8/30/84	7787-88		51.2	41.0	Kiholo
8/30/84	7789-90	HPA#5	59.8	46.7	Kiholo
8/30/84	3499-3501	HPA#5	66.3	53.0	Kiholo (Recap. 10/18/80)



# Robert's Schedule

## 2 AM radio

- Needs (X) WD - check + PBS letter (2) Ribbon print for gear (3) Miles not check (4) Cancel miles a few March (5) WA send for Punavu (6) Photos of restaurant (7) Reserve Van & Shillion April 1975 (8) Formalin (9) Condo (Response) Address (10) Brewer - Sea Mountain - Address (11) Note to HERB Kimer - Lady coming (12) POINTS to mention to Fishing terms (13) Interview Roxanne (14) CLOTHES AT Kewalo (15) Request results from LISA (16) Collect algae/water for turtle (17) April/May Trachete (18) desert nest of turtle (19) Night by report - collect (20) water-water analysis (21) more brochures for tourists + poster for wall (22) postcards to ... (23) FIVE sand paper (24) paper paper, sanding slip (25) Photo pen, camera (26) luncheon sign; only dem the shell (27) MICE IN AMONG (28) luncheon sign; only dem the shell (29) SUGAR (Hawaii) (30) Hawaii post (31) Send everyone piggy bank in restaurant (32) AAU news? (33) GOLF Super Thru to the line (34) Punavu post card (35) Scrap blades (36) Lecture Thurs, night 4/12 (37) Glass visor - + small visor for Ahiman (38) Next. Hist. Lecture at Punavu (39) Larger, flatter book (40) Melt - kumud about 140 quarts (41) Short hose for fountain (42) Dive Homogru - Why dive hole? (43) Sell wet bait parts & Imperial jacket (44) Kona Village - Fred Diner (45) Shivan (46) Halls (47) See Danon - 5-7 o'clock (48) April tide chart (49) P.O. for David (50) visit N. Kohala (51) Turtle Book - PATRICK (52) Sagan article (53) Aerial survey (54) Vase print - Luki, BOK (55) Kaha, outside know about (56) all work in Punavu? (57) GET MANAGED I BECK (58) Punavu - Peako (59) Tidy off by 3/31? (60) 3-2-1 - Coast Magazine (61) Kamehameha - Book Doty (62) Scribe Tagg's nos without me (63) Gao returned - Sagan's wires (64) 757AL no. tagged in old expedition (65) Light at Antology, PRU on 928

Wetsuit -  
earlier  
memo on  
Wau with

Water  
Cooking

FOOD/DRINKS  
TUBE  
UTENSILES  
TENTS

NU. STUDENTS

PHOTOS  
CAMERA

- 5  
sub "contingent note" NEEDS  
(1) Freshwater phone 50mm and "Sea Bird pub. by Dick Young (2) Sagan 935-3916 10,500 x 1986, H. (3) La Motte - nitrated Prosopis (4) Harper - "Downs" (5) OXCE - 2 T-shirts to Robin (6) Check name of "Johnny pond" (7) follow up note to Ralph, raise the same by chun. this trip (8) Finish photos of turtle being brought in by students (9) Bone samples from (10) Sewage tank bag (11) Aellect rel. - 929-9101 (12) "more larger than 76cm" - ovens (13) snuff for putting net on turtle (14) kaula wood (15) Sulfuro bag (16) Gail mail - line (17) Schmalz (18) Set nets by boat camp? (19) wire w/col pan or ? TO accompany to Punavu (20) Black sand for Barbara Klemm (21) low duty - NMEHABHE (22) See Kapa MEEI (23) TABLE of ty loss on prop short-term news-views (have any been lost?) (24) Chair for Note to Doty w/ self-released asking about access to Punavu - (25) what needed? (26) Note to Kapa about HIWA PAI to the Petro. (27) news-views (both views) should and inquiry on DUNE? - good to eat? food in stomach (28) Call HIND - (29) Sumi's box - leatherback photo (30) Note to Doty to Alwaya (31) Little brown w/100 for Kewalo and photo on Punavu (32) Cellium reception on shells - check w/what or? (33) Scribe off entire + other 2 mu for Scribe (34) Print up "awards" certificates of appreciation (see on wall: Punavu?) (35) Wet-out glue (36) Note to John on (37) call to Kaura (38) Send turtle info to Ernest Kaura



Bartley?

MINKER

## Project Needs

- (1) <sup>COY</sup> getting home?
- (2) <sup>SPRAY</sup> PAINT
- (3) Biopsy kit for rat
- (4) <sup>USED FROM BOAT</sup> BROCHURES TO HAND OUT (HOWEVER)
- (5) ADDRESSES OF GENEVA & SWITZ
- (6) CARED TO MRS. HOWARD
- (7) REQUEST
- (8) PRIM. NEEDS?
- (9) K-RATIONS
- (10) Midpac coupons #150 + car
- (11) SIDES for will
- (12) JA to wait
- (13) Buy dome tent for FS
- (14) Mark Shiba last trip
- (15) Look at Nautical of Hilo for relief spots
- (16) Call Hayden - reprints, etc. mention release?
- (17) Humpback
- (18) Whole brochures for the poster for Pete's concession
- (19) Hakaia schedule?
- (20) Lecture
- (21) Request info through Salazar
- (22) Write note for Bulletin Board
- (23) Dinner
- (24) Permit
- (25) Allen Wrench
- (26) Trench
- (27) Hitch
- (28) Telephone
- (29) Take in note
- (30) JA report to wait + CBS, P&S, 2 way radios
- (31) SWISS
- (32) Juice in Hilo
- (33) Cages
- (34) Space notes
- (35) Cages sign?
- (36) Juice in Hilo
- (37) Cages
- (38) theme for fat/algae etc
- (39) Call Gen
- (40) Shunk
- (41) list to Bob, Mike, Will
- (42) Hammer Van 5/12?
- (43) state his-wont accept
- (44) Reims package
- (45) Prun papers to Danell
- (46) Inflatable stored at Richardson?
- (47) Walk out Tent, bag
- (48) water, pyrometers
- (49) called algae
- (50) Stefan letter
- (51) Film copy
- (52) key (CONTINUED p. 50)

Photo needs - Rock outcrops where they feed, boulders with H. low tide; turtles in set - fresh, stable; nest site across road + crevices;

Needs for Feb. exp. (1) confirm Harper (2) Food PD (3) learn how often I (4) Rigs for net (5) how many? (6) walk-out urine bag (7) water, pyrometers (8) T-shirt (9) spray paint (10) gloves for Danell (11) Stipend (12) Trip (13) cargo net for weighing turtles (14) invite Dan + friends + Tribune Herald + Stan new (15) larger, stull research sign (16) Motor or walk to Kanehane + kawa (17) More blood sample + cooler (18) call Hawaii (19) state (20) riot of working in project - health plans? (21) Anchor live & explain for nets (22) boys - ambulance to set 3 pieces (23) Call S. P. (24) change up station (25) contact Bob, Nishimoto & Howard Taketa (26) Make prints from slides - change to project (27) Nasty Sings - decrease (28) try on the Hilo paper too (29) Temperature profile of Bay (30) White Slips - 1-month ahead? (31) 70th \$25 - next like (32) Change of amount, up or down, requires a change form

(33) Haze - *Penaeus* response (34) Long four-shed (35) K. H. (36) Note to Kama about Pouching - Awareness of turtles needed at Honolulu - Concessions out of (37) PSA in *Journal* - Turtle Seal Photo (38) Print of distilled H<sub>2</sub>O (39) Sample below as trip for nitrate, phosphate (40) Card to Dave (41) Card sent to Miller? (42) TOPOS in Hilo - uncons; KRC; P. (43) More limo photos (44) Collect for Annual to ID. (45) Benthos KTA (46) Slipped (47) Plan to heat H<sub>2</sub>O (48) Dist. H<sub>2</sub>O (49) Tel. & mail to Numeza (50) Prints for body & bill (51)



## SUMMARY

of kiholo  
#3 &  
#4

## RHODOPHORA

Acanthophora spicifera (Vahl) Boerg.  
Achrochaetium sp.  
Alsidium sp.  
Centroceros clavulatum (C.Ag.) Mont.  
Ceramium sp.  
Chondria tenuissima (Lyngbye) J. Ag.  
Gelidium pusillum (Stackhouse) LaJolis  
Hypnea pannosa J. Ag.  
Hypnea sp.  
Jania capillacea Harvey  
Laurencia sp.  
Polysiphonia tenuis Hollenberg  
Tolypiocladia calodictyon Silva

## CHLOROPHYTA

Boodlea sp.  
Chaetomorpha antennina (Bory) Kuetz.  
Enteromorpha plumosa Kuetz.  
Microdictyon japonicum Setchell

## SEAGRASSES ETC.

Halophila ovalis (R. Br) Hook  
Casurina equisetifolia L.

## PHAEOPHYTA

Dictyota friabilis Setchell  
Ectocarpus sp.  
Lobophora variegata (Lamx.) Womersley  
Padina japonica Yamada  
Sphacelaria sp.  
Turbinaria ornata (Turn.) J. Ag.

## CYANOPHYTA

Anacystis marina (Kuetz.) Drouet & Daily  
 =Microcystis spp.  
 =(possibly Microcystis litoralis (Hansg.) Fosti  
Microcoleus sp.  
Oscillatoria margaritifera Kuetz.  
Oscillatoria sp.  
Scytonema pascheri Baradwaja



Set Transceiver  
to this  
frequency

\*Updated Repeater Listing as of Nov. 29, 1987 (by: Bob Ferguson KH6NP)

GEO. AREA	CITY	INPUT	OUTPUT	CALL	NOTES	SPONSOR
MOLOKAI	MAUNALOA	144.510	145.110	KHGAAI	O	KHGAAI
OAHU	LAIE	144.530	145.130	KH6NP	O	KH6NP
HAWAII	KEALAKEKUA	144.570	145.170	KHGDNH	O	HWARS
OAHU	PEARL CITY	144.590	145.190	KH6TU	C	KH6TU
OAHU	KANEOHE	144.610	145.210	KH6KL	P	EARC
HAWAII	KAMUELA	144.630	145.230	KH6PI	O	HWARS
OAHU	HONOLULU	144.710	145.310	KHGAGE	O(CA)	KHGAGE
OAHU	PEARL CITY	144.770	145.370	KH6JJX		KH6JJX
OAHU	HONOLULU	144.790	145.390	NH6AQ	C	NH6AQ
OAHU	WAHIAWA	144.810	145.410	AH6DJ	O AEL	RAG
METR HAWAII	MAUNA LOA	145.050	145.050	AH6P-1	PACKET	AH6P
OAHU	WAIMANALO	145.330	144.730	KH6BYZ	O AEL	RAG
MAUI	UPPER MAUI	146.020	146.620	KH6US	O	KH6US
OAHU	KAILUA	146.040	146.840	KH6BI	OE	EARC
KAUAI	HANAMAULU	146.060	146.660	WH6Z	O	GTEARCK
OAHU	HONOLULU	146.080	146.680	KH6FD	O	KH6FD
MAUI	KECKAHA	146.100	146.700	AH6GE	O	AH6GE
KAUAI	WAIMEA	146.100	146.700	WH6AGU	OE	WH6AGU
HAWAII	KEALAKEKUA	146.120	146.720	NH6K	O	HWARS
OAHU	AIEA	146.140	146.740	KH6XP	OAL	KH6XP
HAWAII	KULANI CONE	146.160	146.760	AH6P	O AEL	BIARC
OAHU	NORTH SHORE	146.160	146.760	KH6FV	OE	EARC
MAUI	WAILUKU	146.160	146.760	KH6HHG	O	EARC/CD
KAUAI	LIHUE	146.180	146.780	KH6S	PROPOS	
OAHU	WAIANAE MTS.	146.200	146.800	WH6Y	OE	EARC
HAWAII	MAUNALOA SDL.	146.220	146.820	AH6J	OEL	BIARC
KAUAI	LIHUE	146.220	146.820	KH6DLW	OAE	KARC
OAHU	KEKAHA	146.240	146.840	KH6JU/R	O AEL	RAG
OAHU	HONOLULU	146.260	146.860	KH6ENC/R	O	HANG ARC
HAWAII	PEPEEKEO	146.280	146.880	AH6BW	OEL	EARC
OAHU	WAIPAHU	146.280	146.880	KH6IAA	OEL	KH6IAA
KAUAI	KALEHEO	146.300	146.900	KH6DS	O	KH6DS
MAUI	MT. HALEAKALA	146.320	146.920	KH6S	O	KARC
OAHU	HONOLULU	146.340	146.940	KH6RS	OEL	EARC/MARC
MAUI	MT. HALEAKALA	146.380	146.980	KH6OV	OEA	EARC
OAHU	HONOLULU	147.620	147.020	KH6H	OELR	KH6H
OAHU	HONOLULU	147.660	147.060	KH6JCA	OE	KH6JCA
OAHU	WAIANAE MTS.	147.680	147.080	KH6CIZ	O(CA)Z	HHRC
OAHU	HONOLULU	147.720	147.120	KH6JPL	OAE	GTEARC
KAUAI	HANAIEI	147.740	147.140	KH6WO	O	HARC
HAWAII	KAILUA-KONA	147.760	147.160	AH6EC		KARC
MAUI	KAHANA	147.760	147.160	NH6K	OEL	HWARS
OAHU	KANEOHE	147.780	147.180	AH6GR	OL	AH6GR
OAHU	KANEOHE	147.800	147.200	KH6BFZ	O(CA)E	KH6BFZ
MAUI	MAKAKILO	147.840	147.240	KH6JEO	OL	KH6JEO
OAHU	KULA	147.860	147.260	AH6IF	O	AH6IF
OAHU	HONOLULU	147.880	147.280	KH6WG	O AER	KH6WG
OAHU	HONOLULU	147.900	147.300	AH6CP	C	AH6CP
KAUAI	HANAMAULU	147.940	147.340	KH6BFU	O(CA)E	KH6BFU
OAHU	HONOLULU	147.960	147.360	KH6DD	O	
HAWAII	KAILUA-KONA	147.980	147.380	NH6Q	OEP	HWARS

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146.640 kailua - oahu

146.760 kulani

146.08 oahu

146.88 hilo

147.120 kona energylab

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