

KAIH - SEPTEMBER 1978  
BIG ISLAND 23-26 JAN 1980  
KIHOLO 18-23 MARCH 1980

1980 COMPILATION 10 FEBRUARY 1980  
KIHOLO 14-20 OCTOBER 1980  
BOOK I

G. H. BALAZS ✓  
1978-1980  
KIHOLO +  
BIG ISLAND

SEPTEMBER 1978 TIDE CHART . . . . . p45

CLIMATIC . . . . . page 3

Polaroid of captures at HORSESHOE, KAU . . . . . p41

Postcard view of Hilo Bay . . . . . p55

Postcard view of Punaluu Beach . . . . . p42

MARCH 1980 TIDE CHART . . . . . p62-63

VERNON



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 \* → (3297 - 3322) TAGS USED size 681 Inconel

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BIG ISLAND - KIHULO EXPEDITION 14-20 OCTOBER 1980  
 (3400's - ) PAGES 99 - 111  
 \* → TAGS 3478 - 3501 USED size 681 Inconel  
 see Book II

\* 5/07 TRANSCRIPTION FROM 6 JUNE - 1 JULY 1980 FFS Book I & II  
 "3551 - 3678; 3751 - 3775" TAGS TC 1-48  
 + BASKIN TAGGINGS, p. 76

CLIMATIC

DATE conditions

8/31/78 Thursday - hot, humid in Hilo - offshore the wind is strong at hau - clear sunny

9/1/78 Friday - JOHNSON'S POOL 10PM  
25.5°C

9/2/78 Saturday ~ 8AM in area where net was set -  
offshore - 26°C; surface in closer - 25-25 1/2°C.  
Moderate Trades - rough seas - some overcast

9/3/78 Sunday TRADES down - seas calming -  
Sunny all day

island skies

"VENUS VOYAGES" 11 a.m. and  
continues through Saturday, 2  
and 3:15 p.m. Sunday, 8 a.m. Friday  
and Saturday, Bishop Museum, Plan-  
etarium, 1355 Kalia St.

THE SUN rises today at 4:15 a.m.  
and sets at 6:50 p.m. Evening twilight  
begins at 7:15 p.m. and ends at 8:18 p.m.  
tomorrow, 23 minutes before sunrise.

THE MOON rises at 3:49 a.m. and  
sets at 5:00 p.m.

tides

AUG - SEPT

	HIGH	LOW	Time	Time	HT.
30	2:11 a.m.	1:1	7:41 a.m.	0.2	
WED.	2:42 p.m.	2.0	9:29 p.m.	0.3	
31	2:47 a.m.	1.1	8:22 a.m.	0.2	
THU.	3:12 p.m.	2.0	9:54 p.m.	0.3	
1	3:23 a.m.	1.2	8:58 a.m.	0.2	
FRI.	3:41 a.m.	2.0	10:16 a.m.	0.3	
2	3:57 a.m.	1.3	9:37 a.m.	0.2	
SAT.	4:13 p.m.	1.9	10:41 p.m.	0.2	
3	4:32 a.m.	1.4	10:16 a.m.	0.3	
SUN.	4:39 p.m.	1.8	11:06 p.m.	0.2	
4	5:08 a.m.	1.5	10:59 a.m.	0.4	
MON.	5:18 a.m.	1.7	11:31 p.m.	0.2	
5	5:50 a.m.	1.4	11:45 a.m.	0.3	
TUE.	5:29 p.m.	1.5			

TIDES ELSEWHERE





Using Honolulu tides as the basis,  
add or subtract the figures below, or  
multiply if the height figure is preceded  
by an asterisk (\*).

	High	Low	High	Low
Haleiwa	-1:04	-2:08	*0.84	*0.84
Hana	-1:15	-1:26	+0.6	0.0
Hanalei	-1:30	-1:50	+0.1	0.0
Hangahaia Bay	-1:01	-0:48	+0.1	0.0
Hilo	-0:28	-0:16	+0.5	+0.1
Kaunaloa	-1:53	-1:42	+0.5	+0.2
Kailua	-0:28	-0:25	+0.2	0.0
Kaneohe	-1:48	-1:21	+0.4	+0.2
Kaunaloa	0:00	0:00	+0.3	0.0
Kaunakakai	-0:07	-0:11	+0.2	0.0
Kealahou	-0:18	-0:15	+0.2	0.0
Kealahou	0:35	-0:46	+0.3	0.0
Keolu	-1:47	-1:49	+0.2	+0.1
Laie Bay	-0:03	-0:25	+0.4	0.0
Maalaea	-0:28	-0:20	+0.2	0.0
Mahukona	-0:34	-0:29	+0.1	0.0
Nawiliwili	-0:18	-0:14	*0.83	*0.83
Port Allen	-0:38	-0:25	*0.92	*0.92
Waianae	+0:16	-0:15	0.0	0.0
Waipahoehoe	-1:17	-1:12	*0.92	*0.92

SUNDAY 6AM NOON 6PM		MONDAY 6AM NOON 6PM		TUESDAY 6AM NOON 6PM	
------------------------	--	------------------------	--	-------------------------	--

**MOON PHASES**

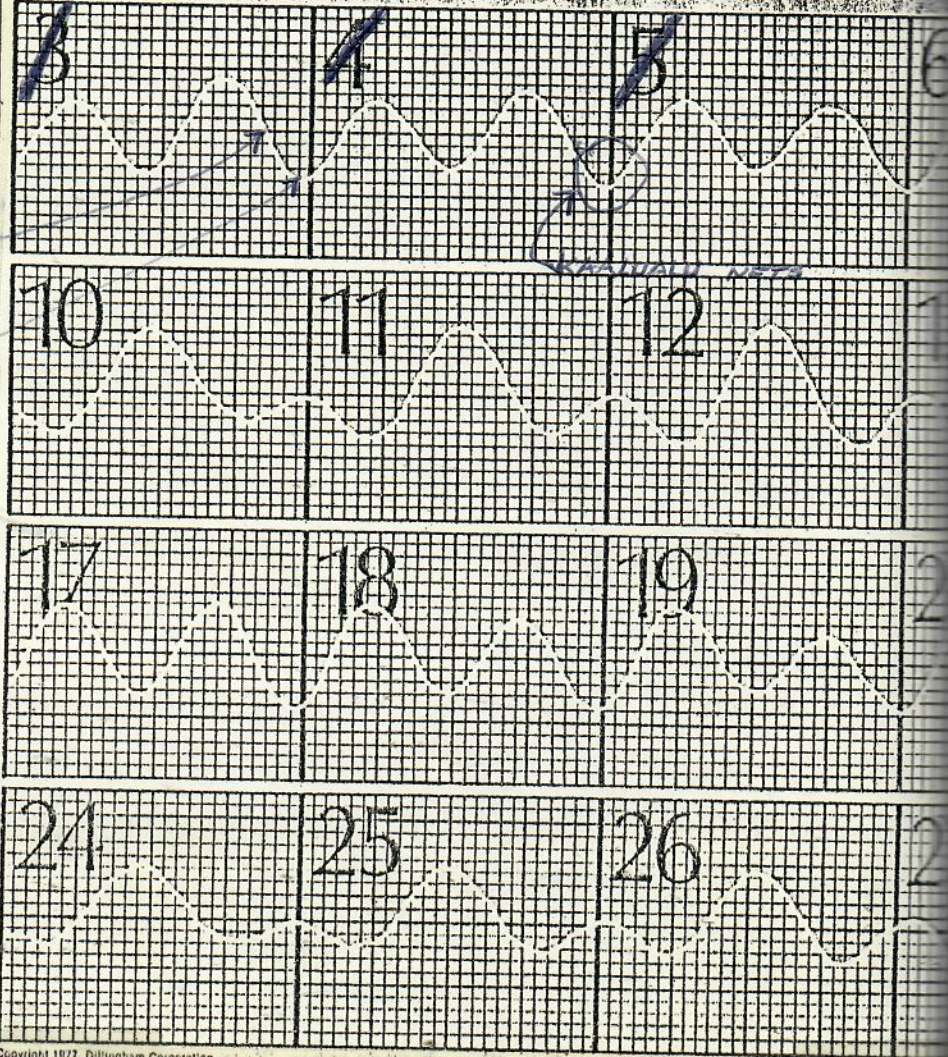
<p>NEW MOON SEPT 12</p> 	<p>FIRST QUARTER SEPT 9</p> 
<p>FULL MOON SEPT 16</p> 	<p>LAST QUARTER SEPT 23</p> 

For tide time at following places, add or subtract from Honolulu time.

PORTS	Hrs.	Min.	PORTS	Hrs.	Min.
HANAIE BAY, KAUAI	-1	40	KAUNAKAKAI, MOLOKAI	-0	09
NAWILIWILI BAY, KAUAI	-0	32	KAHULUI, MAUI	-1	48
PORT ALLEN, KAUAI	-0	32	KIHEI, MAALAEA BAY, MAUI	-0	14
HALEIWA, OAHU	-1	36	HILO, HAWAII	-0	59
HANAUMA BAY, OAHU	-0	55	HONUAPO, HAWAII	-0	24
KANEHE BAY, OAHU	-1	35	MAHUKONA, HAWAII	-0	24
LAIE, OAHU	-1	48	KEALAKEKUA BAY, HAWAII	-0	16
WAIANAIE, OAHU	+0	16			
WAIMANALO, OAHU	-1	15			

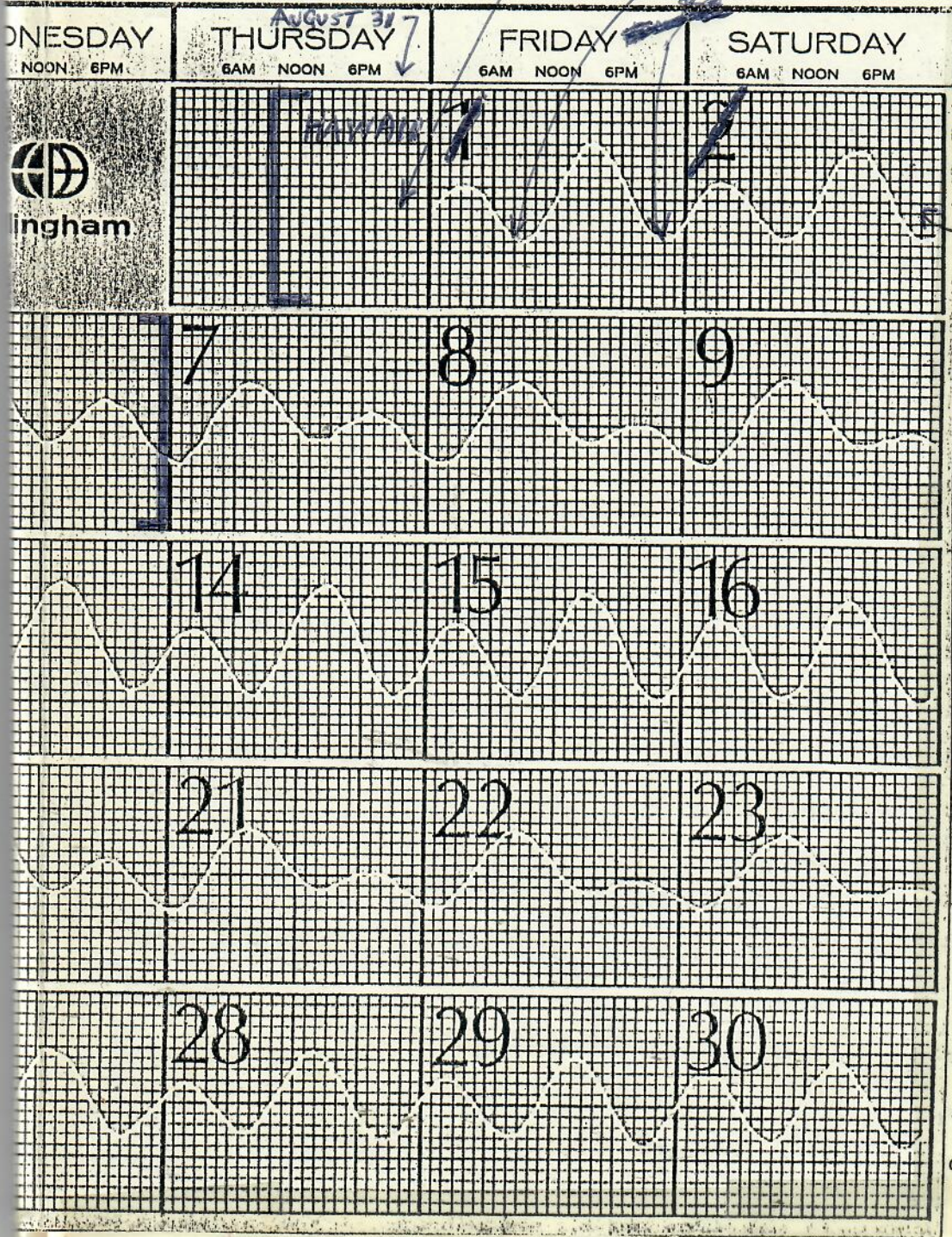
2 FEET
1
0



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# 978 TIDE CHART

*NET -  
Punaluu  
+ 2 ponds*  
*Horseshoe*  
*Kaakawaha  
NETS*



FEET

- ① Johnson's Pond
- ② Horseshoe
- ③ Hale Loke

# 6 HAWAII

31 AUG  
1978  
Thursday

Depart FL 324 Aloha at ~11:30h -  
Edwin drove us and gear to airport -  
Naftel delayed in Midway due to engine  
trouble. Meeting this morning at NMFS  
concerning pulling together of various NWHI projects.

## OBJECTIVES OF THIS EXPEDITION:

- ① Obtaining first-hand information and assessing sea turtle nesting that has taken place this summer (Lanai, Nihoa, Horsehoe, Kamehame)
- ② Interview Meinecke, William H. who is an elderly retired school teacher with knowledge of turtles.
- ③ Scuba and skin dive Lanai and vicinity to make tag recaptures and tag new individuals.
- ④ Use newly made floating nets at Lanai and Kaalapa to evaluate effectiveness, and to make tag recaptures and tag new individuals.
- ⑤ Survey the study area of Kiholo to make tag recaptures and tag new individuals.
- ⑥ Survey the study area of Kawaiho.

31 Aug  
78

- ⑦ Make contacts for recent information with Howard Takata and Pete Hendricks.
- ⑧ Visit the potential study area of Upolu Pt - USCG LORAN

Brief Summary of longer term tag recoveries on Big Island for which growth data exist - (p 30 and 50, '19/78 BOOK) Expedition

TAGS	SL	wt	ELAPSED TIME	INCREASES	wt
2145, 46	2 3/4	56 lbs	8 1/2 months	1 3/4"	20 lbs
2373				~ 3/8" month Rate of growth	

1851 <sup>OFF</sup> 2520, 21, 22	22 1/8	58 lbs	17 1/2 months	3 3/8"	no datum
-------------------------------------	--------	--------	---------------	--------	----------

(Noted Polihale sand looks reddish, IT IS!  
Flight stopped in Hawaii → [at this rate 15" → 32" would take 7.5 years or 9.5 to 36 1/2"]  
(2 1/4 SL per year ←) ~ 3/16" month rate of growth

Terrific silty water noted along coastline NE of Hilo - Cone company had flume pouring out muddy water - silt water pond series noted slightly upland of this site.  
Landed in Hilo at 12:55 PM. - Filled 6 SCUBA -  
Stopped at Kopeano House -  
Arrive at Punahoa at ~ 4:30 PM -  
Report of many tracks - pits at Halape by Guntor - sand beach formed after area sunk.  
This past Sunday and Tuesday nights tracks were present on Punahoa.



31 AUG 78  
Thursday

Report from Jeannette of high surf from  
Hurricane FICO July 18, 1970 - Howard and Santos  
observed old turtle bones in mud exposed (I saw Jeannette's Photos)  
when water through sand up high

Santos new telephone 968-6028 at Mountainview

at "Sisal" Bay before Mountainview Bay  
Santos Reports went skin diving and saw many turtles  
sleeping - "Muddy Water" is also a Bay.

Joe Blow has poached turtles lately -  
does it at night - was got into trouble  
stealing

Report from Jeannette that small turtle  
was on lawn by Kavalan restaurant pond -

- ① July 29 - Horseshoe tracks → ARNOLD showed me - con  
great distance - lava crusts  
as obstacles
- ② July 30 - Road still covered w/sand - tracks into Dahlberg's yard
- ③ Aug 3 - morning saw green, as previously reported.

Aug 5 - morning Horseshoe Ralph gulped Hawk, as reported  
(Pags found it)

interview  
with  
Nelson  
SANTOS

Instructor Pat Spalkup Halape  
Hewers and Clark 19-20 Aug  
courses every year with 15-20 students

on 20th Aug tracks saw  
all over beach - probable  
lay - in his opinion.  
→ Has seen turtles nest in S. America  
Bryan Gorging → in charge of  
Louis Akiona Gout of the way  
Papa Bay - Sherman Estate

31 Aug 78  
Thursday

Shipwreck's old home - Kaau - entrance  
through Olai - Allison Kay's study  
area - old caretaker "Kensley"?

④ 27 and ⑤ 29 Aug - tracks - Lunaluu

7PM Completed setting two sections of "floating"  
net, right off Pof Lunaluu Bay. Needed to  
put on some lead as the bottom line floated up.  
Looks good on the bottom.

TOTAL NET  
TIME =  
12 hours

Noted very bright light from Lunaluu Village  
Restaurant - open every night for dinner now.  
Checked with light from shore at <sup>also dive</sup> ~ 1130, 1330  
and 530 - also at about sunrise - no turtles  
noted. Apparently not enough lead on bottom  
line - net rolled up some -  
Out of water at ~ 7AM.

## DIVE I

To "howshee" about 9:30 AM - low tide  
Jeanelle - Arnold drove us there - Caught  
a total of 5 turtles - saw probably  
3 other but could get our hands on  
them. Tried technique of not shining the  
light <sup>right</sup> on them - foam from  
breaking comes over rock structure - but  
underside this the water is clear. <sup>one bit toward.</sup>  
UW flash photos would be good here.

Turtle data on following pages:

8. KAKU

8/31/78  
Thursday  
~ 10 PM

Horseshoe-skin dive

[Recovered 2-18-84 Punaluu net -

S -  $\frac{39.4 \text{ cm}}{15\frac{1}{2}}$  x  $\frac{31.7}{12\frac{1}{2}}$

2875

(1)

$\frac{61.5 \text{ cm}}{[22.1 \text{ cm} - 65.5 \text{ MONTHS}]}$   $\frac{50.0 \text{ cm}}{0.337 \text{ cm/mo}}$

2876

C -  $\frac{16\frac{5}{8}}$  x  $14\frac{3}{4}$

PL -  $\frac{32.1}{12\frac{5}{8}}$  (healed lacerations)

HEAD -  $2\frac{5}{8}$  6.7

TAIL -  $3\frac{1}{4}$  8.3

73 lbs

wt -  $20\frac{1}{2}$  lbs

52.5 lbs gain

Brownish black carapace color - clean.  
algae on neck.

Coralline algae on ~~edge~~ <sup>edge</sup> of plastron.

7-8 marginal Pt. has healed indentation.

Stomach <sup>Tube</sup> - red juice and very small  
piece of pterocladia.

9/2/78 - observed sleeping in Horseshoe

Horseshoe - skin dive

8/31/78  
Thursday  
~10 PMS -  $16\frac{1}{4}$  x  $13\frac{5}{8}$ 

2877 (2)

C -  $17\frac{1}{4}$  x  $15\frac{1}{2}$ 

2879

PL -  $13\frac{3}{8}$ HEAD -  $2\frac{5}{8}$ TAIL -  $2\frac{5}{8}$ 

wt - 20 lbs

Gold-brown scapace.

algae on neck.

Skin baracles.

Small amount of coralline at ~~anterior~~ posterior end of scapace.

Fresh gouge injury in anterior of plastron.

Upon release, this turtle was the only one of 5 that crawled back onto beach toward jeep lights on 3 occasions.

Stomach tube - red juice - red speckles.

12 KAU

Horseshoe - skin dive

8/31/78  
Thursday

S -  $17\frac{3}{8}$  x  $14\frac{1}{2}$

2880

C -  $18\frac{3}{8}$  x  $17\frac{1}{8}$

2881

PL -  $14\frac{1}{4}$

HEAD - 3

TAIL - 3

Wt - 30 lbs

Black with yellow speckles/streaks carapace color.  
Fresh broken site between 6-7<sup>th</sup> margin Right.

Skin Barnacles. neck algae.

Healed gouges on plastron.

Fine split in center of upper beak.

Stomach Tube - no sample obtained.

## Horseshoe - Skin dive

8/31/78  
ThursdayS -  $16\frac{7}{8}$  x  $14\frac{1}{2}$ 

2882

C -  $18\frac{1}{8}$  x  $16\frac{3}{4}$ 

2883

PL -  $13\frac{5}{8}$ HEAD -  $2\frac{3}{4}$ TAIL -  $2\frac{5}{8}$ wt -  $25\frac{1}{2}$  lbs

Black with light streaks surface color.  
 Skin barbed.  
 Healed gorges on flippers.

Stomach Tube - no sample obtained

## Horseshoe - skindive

(Recovered 3/25-3/26/84 PUNALOU NET)

8/31/78  
ThursdayS -  $21\frac{5}{8}$  x  $17\frac{1}{2}$   
54.9 cm 44.4  
75.7C -  $23\frac{3}{8}$  x  $20\frac{3}{4}$   
59.4 52.7  
82.5~~2884~~ 2885PL -  $17\frac{5}{8}$   
44.8

2886

HEAD -  $3\frac{3}{8}$  (8.6 cm)  
TAIL - 4 (10.2 cm)(3/24 133 lbs)  
60.4 kg) WT - 54 lbs.  
24.5 kgBlack w/yellow spots carapace color -  
R Hind limb partly missing, but healed.  
Skin barracks.

Stomach tube - no sample obtained.

DIVE 2 - Horseshoe at ~9 AM - no turtles KAU 15

Note: Kaula home Pt. by Kaula Bay,  
as listed on V.H. place names chart.

9/1/78  
FRIDAY

Slept some during A.M. hours - readied all gear for trip to Kaula - departed with Jeanette and Arnold ~3:30 Arrive ~5:00 PM - Many canyons (3+) across from wood house - I decided to set nets lat Mukilow - arrived there at 5:30 PM - saw turtle's heads surfacing - but did not continue shortly after we arrived. - Put nets in water (2 sections) at ~6 PM - floats tangled going out, creating a snarl that ~~could~~ could not get untangled.

DIVE 3

Nets were checked <sup>with lights</sup> at 7:30, 8:30; at 9:30 went to Howard's Hole - skin dive - no turtles seen - but two lobsters and Kapee on rock.

At 10:30 PM noted splash at beginning of second section - removed (cut out) and brought to shore in tube. <sup>caught at bottom of net.</sup>

9/2/78  
SATURDAY

Checked net at 1 AM. At ~2:45 AM noted turtle <sup>it</sup> first part of first section. Vigorous swimmer - bites. Wrapped tight.

Checked nets hourly for remainder of night until after sunrise - nothing in net, however, small turtle's head noted several times by net after <sup>first</sup> lights.



16 TAG DATA for TWO kaalaulu captures -

KAU

(second capture of the evening)

9/2/78  
SATURDAY

7/23/81 573

new

S -  $22\frac{3}{8}$  x  $18\frac{1}{4}$

$\frac{1}{21/78} = 21\frac{1}{4} + 1\frac{1}{8}$  x  $17\frac{1}{8}$

2510  
Recapture

C -  $24\frac{1}{4}$   $22\frac{1}{8}$

2511

$\frac{1}{21/78} = 22\frac{7}{8} + 1\frac{3}{8}$  x  $20\frac{1}{2}$

new

2887

CF

PL -  $17\frac{1}{2}$   $\frac{1}{21} = 16\frac{1}{2} + 1''$

HEAD -  $3\frac{3}{8}$   $\frac{1}{21} = 3\frac{1}{4} + \frac{1}{8}$

TAIL -  $5\frac{3}{4}$  (fully extended)  $\frac{1}{21} = 5\frac{3}{8} + \frac{3}{8}$

photos

Weight - 63

$\frac{1}{21}$  weight not taken

Pink coralline alga between laminae of sarapace. Also some bright red on existing tags.

Lots of skin barnacles on neck, hind quarters - also tail.

Stomach tube - large diameter 3x  $\rightarrow$  no particles  
small diameter 2x  $\rightarrow$  just juice

Noted small red alga particles stuck to roof of upper ~~of~~ mouth.  
Dried scum ~~of~~ on ~~the~~ sarapace.  
Small amount of red alga on neck.

originally Tagged.

$\frac{1}{21/78}$  kaalaulu in front of wood house

7 months 18 days

SL = .75" .381 cm

(First capture of evening) - High in net -

9/2/78  
SATURDAY

S -  $25\frac{3}{4}$  x  $21\frac{1}{4}$

C -  $27\frac{3}{8}$  x  $24\frac{7}{8}$

2888 LFL

2889 RFL

PL -  $20\frac{5}{8}$

2890<sup>RF</sup>

HEAD - 4

TAIL -  $6\frac{1}{8}$

photos

Wt not taken -

Needed thicker line.

Skin, layracks front, hind and tail.

possible note?

Noted horny tip to tail.

Dried scum on carapace.

Small amount of red alga on neck.

Stomach Tube - both tried several times - only juice.

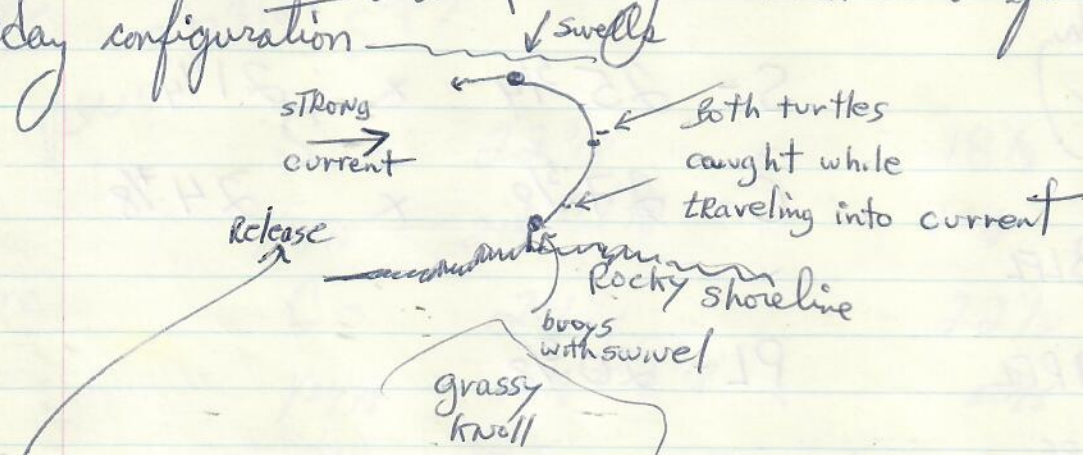
However, noted piece of Pterocladia stuck to roof of upper mouth.

Note - Why no stomach sample in these two?  
not yet feeding?

5/13/79 - should have "flushed" with seawater?

9/2/78  
SATURDAY

nets ended up being set in the following configuration



Turtles were released before removing net - neither were <sup>reentangled</sup> Nets out of water at ~ 8:15 AM

TOTAL  
TIME -  
14 hours

Made algae collection - noted that Pterocladia seems to be limited to ~ 5' in depth and intertidal - IS this due to a brackish water requirement?

Notes -

Saw Kupéé at Howard's hole - recalled the high altitude/hot habitat that these were noted on Necker.

During early morning hours heard a narrative of Scrooge McDuck's life on KHUA - From "Pages of the People's Almanac" Artist for Scrooge - Barck (sp?)

Possible title - "Ecological Aspects of Hawaii"

9/2/78

SATURDAY

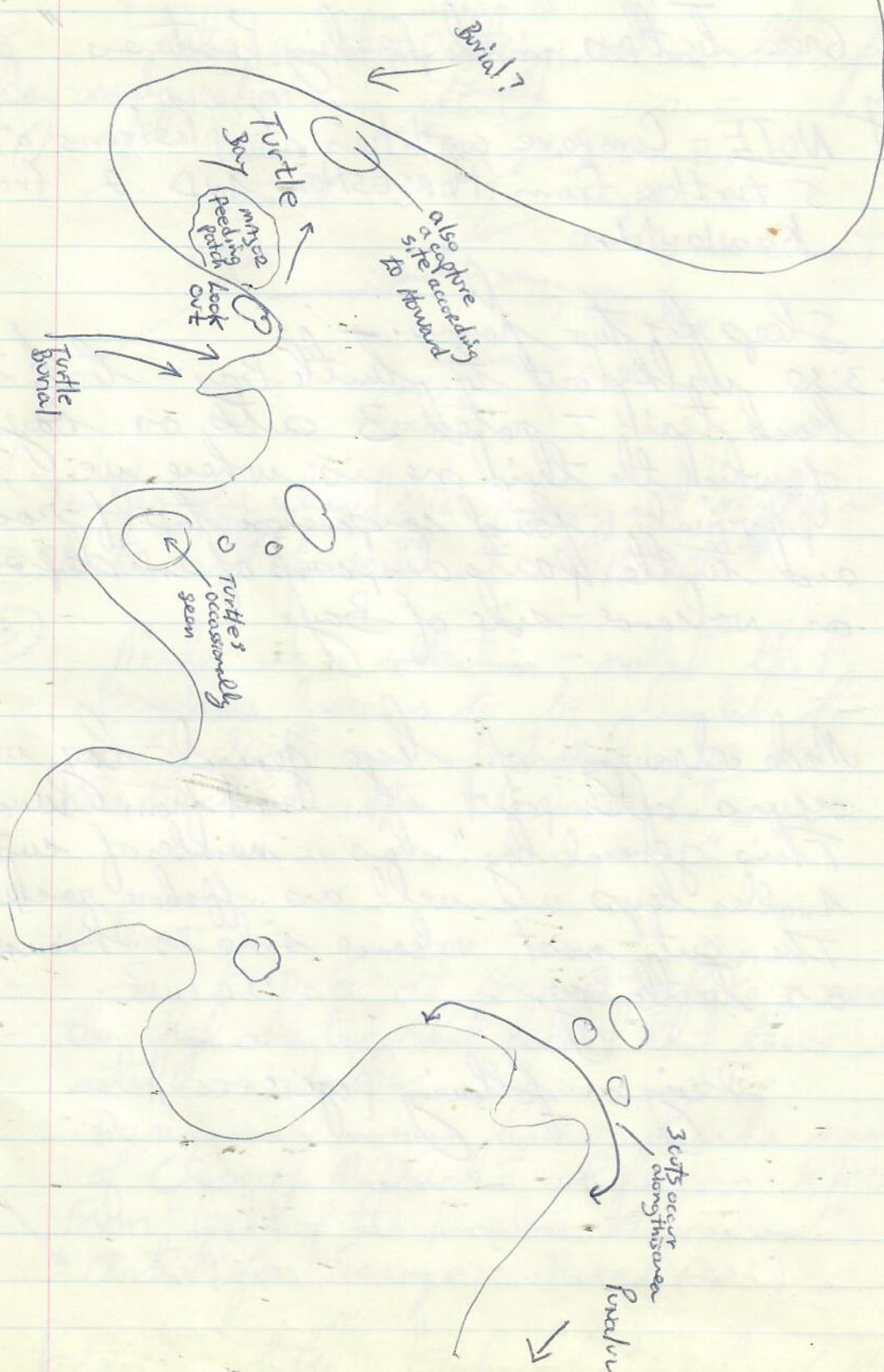
## Green Turtles in the Feeding Pastures"

NOTE - Compare condition of plastrons of 5 turtles from HORSESHOE AND 2 from Kaaialu.

12-3 Sleep for two hours. -  
 ~ 3:30 walked out to Turtle Bay - took the beach trail - noted 3 cuts, or bays, of which the third one is where we previously found carapace on top of rock and turtle parts disposed of in depression on volcano-side of Bay.

Made drawing of large general-bay which occurs after point upon visit from Puuakoo. This "general bay" has a number of cuts or smaller bays as well as offshore rocks. The cut, most volcano side is known as Turtle Bay.

Drawing on following page:



Rough sketch drawing

See 4162 CG CHART  
(XEROX RUMALIND)

9/2/78  
SATURDAY

Observed turtles feeding from lookout site at Turtle Bay. Noted very active swimming underwater - rough waves rolling in - surge strong.

Most all of the 4-5 different turtles seen only took one ~~breath~~ breath. At times the yellow underneath would flash as turtle would be ~~turned~~ turned over.

Tried to determine UW breath holds (respiration rates), but ID of individuals became confused.

Timed small turtle with coralline spots on carapace -

11:25	<	39 m	25 s	-	1	moderately fast breath
2:30	<	50 m	50 s	-	1	" " "
		53 m	20 s	-	1	" " "

Need some way of positively identifying individuals.

Examined for presence of new turtle burrows - at Turtle Bay - found G.I. and contents quite fresh (w/ feces) - none retained, but I.D. only Pterocladia. At site under ledge found 3 total <sup>(saved two bones)</sup> ~~two~~ <sup>two</sup> plastrons; at "slide" site, (previously uncovered rocks; several times during earlier trips) found two - collected. Two large humeri, central lamina, marginal bones attached and many bones from limbs.

Backnote: Howard reports bulldozing and removal of Hawaiian site rocks - Violet Hansen came down. New <sup>30:17</sup> ~~boards~~ will be

DIVE 4

(Haleloa)

9/2/78  
SATURDAY

At ~ 8:15 PM proceeded to Johnson's Pond -  
 Caught a total of 3 turtles - 1 in each  
 after entering water -  
 3 As follows:

2891 RF

S -  $22\frac{5}{8}$  x  $17\frac{3}{4}$ 

2892 LFL

C -  $24\frac{3}{8}$  x  $22\frac{1}{2}$ 2893<sup>LF</sup>PL -  $18\frac{5}{8}$ HEAD -  $3\frac{5}{8}$ TAIL -  $4\frac{1}{2}$ WT -  $65\frac{1}{2}$  lbs

Small red strand of alga in mouth.

A few skin barbacles.

A few healed gouges in plastron.

Green slimy algae on shell (carapace)

Small amount of pink coralline on carapace

Color - black with yellow streaks

Stomach tube resulted in juice  
and small particles - retained.

Natural notch between 8-9th marg R in sea  
 Small tip of R front limb missing - head  
 Caught ~  $\frac{1}{4}$  under a ledge. - Got loose from me but I am  
 grabbed him.

9/2/78 Johnson's Pond (Hale Lake)

2894 LFL

(7)

S -  $16\frac{3}{4}$  x  $12\frac{5}{8}$

C -  $17\frac{3}{4}$  x  $15\frac{1}{8}$

2895 RFL

PL - 13

HEAD -  $2\frac{5}{8}$

TAIL -  $3\frac{5}{8}$

Wt. -  $21\frac{1}{2}$  lbs.

Skin baracles.

Healed gouges in plastron.

Algae on plastron.

Small pieces out of left hyd.

Algae on carapace and neck.

Brownish-black with streaks yellow

V-notch at end of R front limb.



9/2/78 Johnson's Pond (Hale Lake)  
Recovered 3/25-3/26/84 NET IN PUNACU

3/84 = 69.5

2896

S -  $16\frac{7}{8}$  42.9cm

(8)

C -  $18\frac{1}{8}$  46.0cm

2897

PL - 13 33.0cm


HEAD -  $2\frac{3}{4}$  7.0cm

TAIL -  $2\frac{3}{4}$  7.0cm

3/84 = 44

Left side marginals deformed - severe indentations  
Wt - 22 lbs 10



Coralline alga patch  on left lateral

Slimy algae on carapace - and plastron,

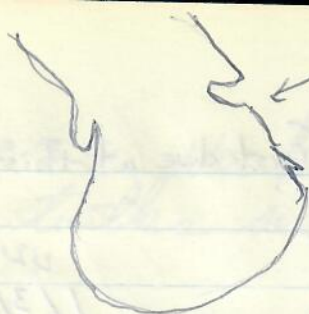
Goggles in plastron, healed.

Spine barnacles.

Brownish carapace color.

End of Right front limb broken (while on)

Caught swimming free - may have just entered pond.



← healed - poss broken bone

KAU 25

This injury has the appearance of resulting from a monofilament line.

9/2/78  
DIVE 5

After working up three turtles from Johnson's Pond (NINOLE AREA), we proceeded to Horseshole (LAUPAPA) - Campers right on iliki beach - We came in from other side - just before our entrance into the water, two divers with spears (guns) hurried down to get in water with us - we were ahead, and saw (1) large ~ 45lbs grabbed by kam (1) 2875 grabbed by me (3) others swimming no tag. Tried to scare them all out before other divers arrived.

Seems likely to me that they would spear any turtles seen - possibly were there just to spear turtles (or take lobster?). Pick-up truck, white, first license plate numbers 110-000.

DIVE 6

Proceeded to new site called (HALE LOKE) - Caught one turtle sleeping on the bottom - Data on following page -

Saw an Aku head in this pond.

26 KFL

9/2/78  
SATURDAY

HALE LOKE POND (First dive at this site - shown by the

	52.7		42.5
S-	$20\frac{3}{4}$	x	$16\frac{3}{4}$
	56.2		50.5
C-	$22\frac{1}{8}$	x	$19\frac{7}{8}$

2898 (9)

PL -  $16\frac{3}{8}$  41.6

~~2899~~

can't see

HEAD -  $3\frac{1}{4}$  8.3

TAIL -  $4\frac{1}{4}$  10.8

Wt. - 45 lbs

Algae on carapace.  
Carapace Brownish w/ yellow streaks,  
Not many barnacles, only saw one, and  
then on tail.



9/2/78  
Saturday

DIVE 7 - Went back to Johnson's Pond -  
no turtles seen.

9/3/78  
SUNDAY

Up at 7AM - went down to beach and  
observed 2 sets of turtle tracks -  
one "half-moon" on beach area across  
black sand road from Dahlberg's house -  
The other, an "up down" in same tracks  
right up to where ~~an~~ orange outrigger  
sets on the beach. Track ended right  
at bow of outrigger - possibly turtle saw  
this and was scared off.  
Measured width of tracks (looks small) -  $32\frac{1}{2}$ "

NOTES FROM JEANNETTE: 10-15 years ago the  
plantation hauled out all the black sand  
from original IIIII beach - this was a  
very nice beach, located by what is now called  
Big Red.  
also, sand removed from area inland of  
Hale Lake - freshwater pond now, but used  
to have black sand. "Koba" place name  
mentioned.

\* NOTES FROM HOWARD:

During War years Howard used to go to  
beach area at Mokuia for recreation

9/3/78

SUNDAY

in the afternoons. Used to be a field hospital, then, but now is a girl scout camp (this is before the boy scout camp when traveling from Wialua). Shallow reef flat goes away out. At this location, very long turtle net used to be laid out from shore, tied to a coconut tree. Stayed out continuously, and turtles were periodically removed.

Other <sup>net</sup> site for North Shore was right across from the Meadow Cold Dairy - (Dairyman's) - air runway used to be in area.

Howard reports that turtles he has caught were never hooked in carapace or plastron - usually in flippers - front. once he hooked one in skin of neck, and once through eye.

He reports that when one is hooked and struggling, small ones will be attracted.

Also that he has seen larger turtles scare off smaller ones in the feeding areas.

9/3/78  
SUNDAY

At ~ 10 AM readied backpacks and departed along shore trail for Kanehane - Along the way noted "Sisal Bay" <sup>(Calmer water Big IS)</sup> were Dennis had reported seeing many turtles sleeping. Tall sisal plants are located in this area. Area coastal photos taken here and at Maui Crack - note FG turtle catch report that listed Maui, Big Island.

Howard mentioned seeing two fellows throwing dynamite into water from shore along this area - gathering fish!

At Kanehane ~ 11:30 AM - crossed wide black sand beach that sweeps right up to cliff of hill - this is ~ 100 yards wide - after this there is an area ~ 32 yards wide that has an area above wave sweep - contains Scaevola (Nupaka) - noted 4 excavations two of which were well under Scaevola. Tracks observable in the area. Photos taken. All excavations were shallow - typical of bankbill? Hard to determine if "vicarious" of tracks are across from one another, or alternate  $\therefore \therefore \therefore$  I asked Howard about Punaluu,  $\therefore$  and he said "almost directly across".

Before departing, I met the "Opiki Piker" - he said he was last into Kanehane 3-4 days ago - saw pits. However, I do not know if these were new at that time - Hawaiian type man w/ beard - tattoos "SUZIE"

ELWOOD  
SUSUMU  
"SUS"

9/3/78  
SUNDAY

We saw his messy campsite at Kamehame.

At lunch under shady lava flow overhang-sand pocket beach. Noted long slender rock islet just off black sand beach.

Noted some Pterocladia dried up on beach.

Small stone structure on top of Kamehame Hill - also some other Hawaiian structures.

In "cut" eroded section of Kamehame Hill noted many opihia shells, other shells probably from inhabitants. Kam. pulled out small piece of lamina - looks like green turtle.

Returned along coast up higher slightly on lava field - returned at 2 PM.

DIVE 8

To Johnson's pond - at ~ 8 PM

Found one juvenile sleeping in hollowed-out site to the left.

Tag data on following page -

Johnson's Pond ~ 8:15 PM

9/3/78  
Sunday

2899 LFL

(10)

2926 RFL

43.8

37.1

S - 17 1/4 x 14 5/8  
46.0 43.5

C - 18 1/8 x 17 1/8

PL - 13 5/8 42.2

HEAD - 2 3/4 7.0  
TAIL - 3 5/8 9.2

10.9 kg

Wt. 24 lbs

Recovered  
PUNAWU  
9-10-79

Added Y. 180

61.2 cm, but  
deformed carapace

&

4/90

PUNAWU

SL-61.5

102 lbs

- Brownish <sup>with</sup> yellow streak carapace
- Slimy algae on shell
- A Few skin Barnacles
- Small piece of Pterocladia in mouth  
(stuck on roof)



32 KAU  
9/3/78

DIVE 9 ~ 9 AM  
Horseshoe - no turtles seen - noted  
warm water

DIVE 10 BUNTOI POND - (HALE LOKE)  
Nothing seen (Clots of Amansia, "toboa"  
lima" growing on sides.

At 11:15 PM returned to Horseshoe -  
DIVE 11 Nothing seen.  
Blood in water has caused turtle  
departure? Turtle scared by divers last  
night?  
\* Should save turtle blood for experiment.

Notes - no moon and lower tide existed  
during our night dives in ponds.

Dynamic vs Static aggregations

Try to develop dynamic model on  
recruitment/age to maturity.

"Sailboat" as described by Howard, and  
observed on 9/2/78: Red floating buoy  
with long line extending to shore. Along  
long line are a number of <sup>live out</sup> hooks extend  
down.

NOTED - extensive fire tracks in all black sand  
beaches (Lualaba, Horseshoe)

9/4/78  
MONDAY  
up ~ 645 AM - Ready for SCUBA dive off  
of Howard's boat. out while water is still calm.

## DIVE 12

off of Nihoa Cove - followed slope  
in a 40-45' of water along toward  
Punalua entrance. Saw a total of  
6 turtles - 2 were resting on rocks  
coral when first seen - other were in  
water column swimming. One medium  
size had what appeared to be hole (scar?)  
in one of 1<sup>st</sup> or 2<sup>nd</sup> centrals.

Total time down - 48 minutes

Kam reports seeing a tag distal on one turtle.  
one return, while swimming at the surface,  
a small turtle swam up toward me -  
I descended, moving slowly, and got very  
close at one point. Showed very little  
initial fear.

11:30 AM drove over to Hale Lake and  
Hoyeshoe to take photos at  
low tide. <sup>Amansia abundant</sup>  
along edges

Afternoon ~ 12:30 PM Apuahi fundraiser in Waialeale w/ Jeanette and  
Cory Boy HARRY ANGELO  
- Ready gear for trip to Kaalana -  
depart ~ 1:30 PM -

Total time  
in water =

14 hours

Set three floating nets in water in front of wooden  
house site - in the water ~ 5:15 PM - used  
wooden box tied to tube and 50' nylon plus  
chain to get net out over some of the shallow

9/4/78  
MONDAY

rocks. Noted that the swell was way down - quite calm - high tide when nets were used.

Captures were made and removed at: < 8 PM (1<sup>st</sup> part of first section); < 2 AM (one in second section, one in third section); < 3 AM largest turtle ( ? )

Eagle ray entangled > 330 at very end of third section.

Used Howard's battery and seal beam light to periodically view floats of net.

Turtles were retained on land until daylight for measurements, etc, and release.

Except for the very smallest, all (3) were released on the "bay" side of net - no recaptures  
Net out ~ 730 AM

Data for four turtles on following pages:

9/5/78  
Tuesday  
(Mon night  
capture)

Kaalua - largest caught - last of 4.  
net in front of wood house.

S -  $27\frac{1}{2}$  x  $21\frac{7}{8}$

2927 RFL

C -  $29\frac{3}{8}$  x 27

2928 RF

PL - 22

2929 RFL

HEAD -  $3\frac{3}{4}$

TAIL -  $5\frac{3}{4}$

wt. > 100 lbs

Clean plastic.  
Skin, baracles.  
Stomach tube only red juice.

last photos on ASA 64  
roll 2

9/5/78 Kaalulu - net capture

TUESDAY

S -  $19\frac{5}{8}$  x  $15\frac{7}{8}$

C -  $20\frac{3}{4}$  x  $18\frac{3}{4}$

2930 RFL

2931 LFL

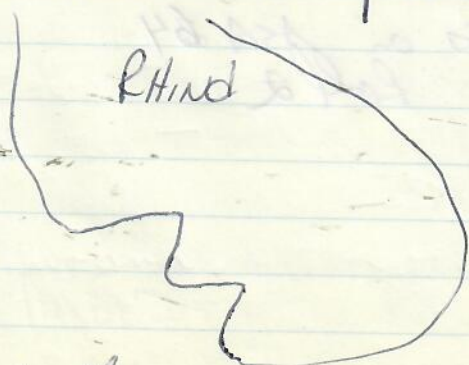
PL -  $16\frac{1}{4}$

HEAD -  $3\frac{1}{8}$

TAIL -  $4\frac{1}{4}$

Wt. - 40 lbs

Heavy white scum on carapace.  
Many skin barnacles.  
one gough fin floater - healed  
Stomach tube - red juice and  
two small pieces of Pterocodia



possibly from  
MONOFILAMENT

First three photos - Roll 4

## Kaabulu net capture

9/5/78  
Tuesday

2932 RFL

S- $16\frac{3}{8}$  x  $13\frac{1}{4}$ 

2933 LFL

C- $17\frac{1}{4}$  x 15PL- $13\frac{3}{8}$ HEAD- $2\frac{1}{2}$ TAIL- $3\frac{1}{8}$ 

Wt. 19 lbs

Carapace color blackish brown.  
 Very few skin baracles,  
 a few gorges on plastron.  
 Stomach tube -

photos #4-5 - Roll 4

9/5/78 KAAHALA NET CAPTURE -  
TUESDAY In front of wood house

RECAPTURE  
(2ND LONG TERM)

ORIGINAL TAG - 5/6/77  
Recap - 1/21/78 > 8m 15d  
> 7m 15d

S - 22 $\frac{7}{8}$  x 18 $\frac{1}{4}$

1/21/78 - 21 $\frac{3}{4}$  17 $\frac{1}{4}$

2145 LFL SL = .15" + 1/8  
BARN INSIDE .381 emr

2146<sup>OFF</sup> (pulled open by net)

2373<sup>RF</sup>

C - 24 $\frac{1}{2}$  x 22 $\frac{7}{8}$

1/21/78 - 23 $\frac{1}{4}$  + 1 $\frac{1}{4}$  x 21 $\frac{5}{8}$  + 1 $\frac{1}{4}$

NEW  
2934  
SAME HOLE  
AS 2145

PL - 18 $\frac{3}{4}$

1/21/78 - 17 $\frac{5}{8}$  + 1/8

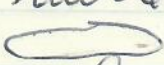

HEAD - ~~3~~ 3 $\frac{1}{2}$  + 1/4  
1/21/78 - 3 $\frac{1}{4}$

TAIL - 4 $\frac{7}{8}$

1/21/78 TAIL - 5"

Wt. 5816

1/21/78 - 561bs + 2

Stomach Tube -  
Photos # 6 - of turtle and spiral/capsular  
injury  - looks like spear  
wound. Also of tag w/ red coralline  
 upper

9/5/78  
Tuesday - 9:30 AM - started on hike out of Kaalaulu  
with dog after Howard refused to drive me out,  
Took wrong turn and had to back track,  
~ 1 PM, reach site where Kam was able  
to drive rented car down. note that  
photos were taken of dog by house, and Bay  
from road.

Proceeded to Howards - packed all gear -  
went to Sea Mountain convenience store,  
where telephone calls were made. Gathered  
plants near Horseshoe and proceeded  
to Hilo ~ 6:30 PM.  
Checked into Hilo Hotel - \$14 double -  
Dinner at Chinese restaurant.

9/6/78  
WEDNESDAY

Breakfast at McDonalds.  
Called Robert (Bobby) Hines at 9 AM

324-1295

Box 1149

Kailua, Kona 96740 concerning Kiholo

When younger, he used to catch turtles,  
but release. 1960 Tidal wave made  
two entrances to pond - used to be only one.  
"Easy to catch at night with a light"

Area is controlled by fishermen that are  
given access are told to leave the turtles  
alone. "turtle overated as a food - only  
a small amount of meat."



9/6/78  
WEDNESDAY

Departed Hilo on HA  
at - 1:10 PM.

Brief data summary of expedition -

Captures, with SCUBA - 0

Captures, with mask and fins - 11 (1 short  
recovery)

Captures, with nets - 6 (2 long term  
recovery)  
of those, mortalities - 0

Long term recoveries - 2

Short term recoveries - 1

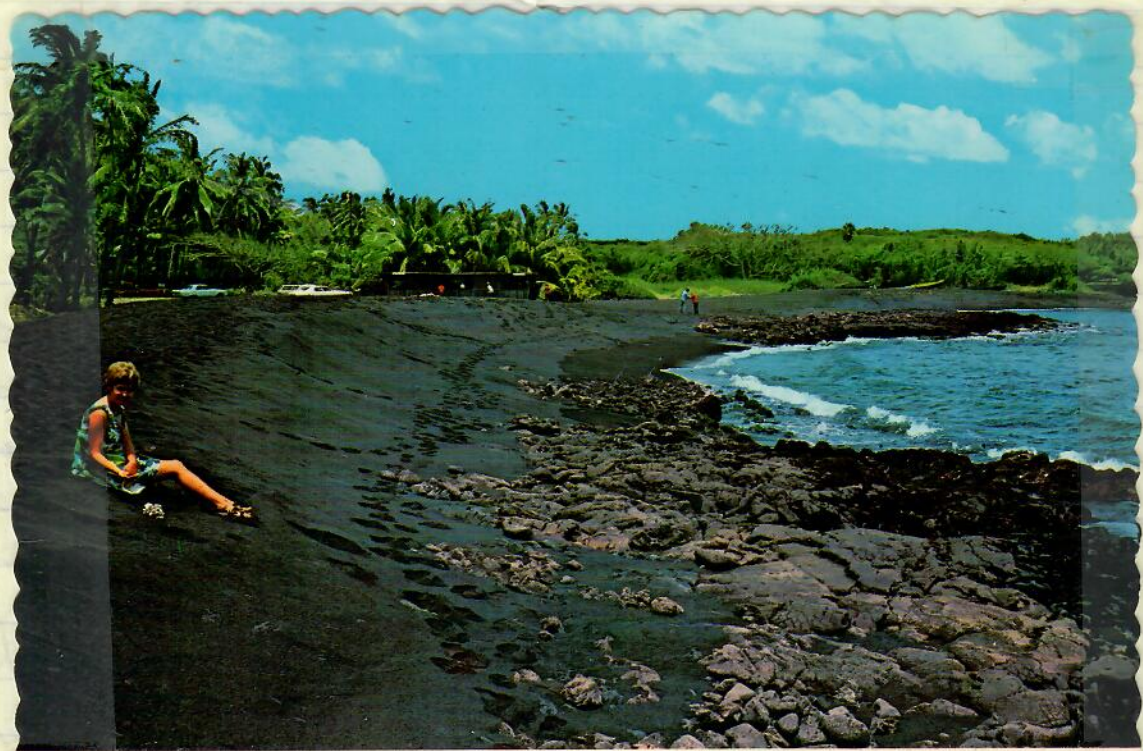
Total Captures - 17

Total different Captures - 16



8/31/78 HORSESHOE, PUNALOU,  
KAU. HAWAII

Notes - Do small turtles exhibit greater frantic activity when entangled, therefore becoming more entangled and using greater quantities of oxygen?  $\therefore$  more susceptible to drowning in net? Small turtles are more active during tagging. Also, during January cooler water there is greater reluctance on the part of the researchers to regularly check the net.



*Punaluu Black Sand Beach-Hawaii*

*Photo by Bert Phillips*

9/20/78 Cliff Smith 948-8218 Botany Dept. called  
wed concerning reports of nesting at Hakape -  
asked me to call Reeser at 967-7311

9/22/78  
Friday

Talked to Reeser - he will be xeroxing  
log at Hakape - beach (white) formed in  
Nov 1975 (?) - not there before.  
Report of visitors helping 15+ hatchlings  
to the water.

Need Reports from Mavunakea Beach ↓  
2 MARCH 79 Call from Bryan Wyatt, purchasing agent -  
been there 6-7 years; workmen found 20" hawk  
with net wrapped around it. Hawk seen in  
area; kept at hotel to regain health -  
(see Gray book page 16). Tel. 882-7033

9 March 79

Report that turtle is doing fine - will be  
released today. Photos to be taken.

6/8/79  
FRIDAY

Telephone call from Bud Doty informing me that he inspected Kamehame Beach (for water leaks) and found three turtle nests + 2 in <sup>(north side)</sup> Naupaka; probably not more than a few days old.  
Bud's telephone # is 928-8042

46 written 1/22/80  
TUESDAY

BIG IS. VISIT  
(me, Lin and Christian)

Notes from earlier books - 1389 Kalamareok  
"Garcia Pond w/turtles"

Panama Zool - Director, Hal Fisher  
Hawpsbill to Waikiki Aquarium?

Kimura's - Kapoho house

Duplicated  
↓

Recovered -  
Juvenile tag 602 tagged at Kiholo 1976  
letter in file from Elmer Auna, Box 748  
Honokaa 3 June 76 -

Rose Auna, Honokaa, 775-0809  
1/25/78 talked to Elmer - caught turtle at Kiholo  
with a throw net ("over 100 lbs") store-up  
Stomach contained red limu - shell not  
saved - saw others with tags.

Earlier letter 14 April 1974 Edward Murt  
Nani Instructor, General Delivery - Kapaa  
96755  
Recovered tag 61? originally tagged May 1973  
Kiholo

Also - note that letter was received  
from Elmer on 9/11/73 about capture  
on 9/9/73 of turtle tag 605  
at Kiholo (tag sent to me) This  
record appeared in my BIO. CONS.  
publication.

23 JAN 1980 Wednesday

Depart Honolulu at 6:30 PM visit  
Hawaiian Airlines -  
Note article in IN Flight magazine about  
Waikiki Aquarium,

Car rental at Grayline - new Datsun -  
\$14.95 per day - Hukilan package.

Checked in at Hukilan Hotel - \$31.20 total  
dinner at MacDonalds.

24 JAN 1980  
Thursday

level of tidal waves on window -

9 March 1957 —

23 May 1960 —

Breakfast at Hukilan restaurant -  
Drive through Hilo waterfront - by  
Coconut Is., Ijikoalani Gardens -  
Naha Stone photo of me and Christian -  
over Waialua River via Ohia St -  
Recalled Pam Chock note about turtle<sup>24</sup>  
being seen 1/8 mile up river mouth.  
To Korgs and BOH.

Helewi Bay

At ~ 11:15 AM drove out Kalamaneole Rd -  
to Richardson Ocean Center and past - dirt road  
starts. Recalled report by Woody's  
dive shop of turtles regularly seen -  
This is outside of Breakwater.  
Area by ocean center (Hilo side of stone



24 JAN 80

Thursday

wall) is sheltered, possible sleeping areas?

On return to Hukilau to check out I noted "Garcia" ponds - two black turtles in smaller pond (Makai side) - one smaller in larger, deeper pond - (hauled half out on rocks). These turtles seem to be about the same size as when I saw them in 1978.

Proceeded to south on Hwy 11, turned left at Kea'an <sup>(Hwy 133)</sup> through Pahoa - Hawaiian Paradise Park on the left and Orchid Estates on the right before Pahoa. TO Kalapana -

Saw well w/ tide gauge at Drive In - saw pond next to Star of the Sea ("Painted") church. Nearly all blocked off from the ocean -

TO Hualaia Petroglyphs - just past there road is open - "Chain of Craters Road" - Photos of Christian on Lava Flow. Drove up side of mountain - saw

Huaka Crater - Oheo Berries - Checked in at Volcano House - Note: last eruption 24h in Nov 1979. National Park established in 1916.

24 JAN 1980  
Thursday

Arrived at Volcano House ~ 3:30

Received message from Howard Takata about turtle stranding (or in shallow water) in front of Ohelo Hawaiian Hotel (near Coconut Island).

I called Leslie - clerk at Hotel Telephone 935-9361 - reported that turtle is in shallow muddy area - ~ 2 1/2' long - appears to be tumor or "barnacles" on or by eye and on left flipper - also (from my description) in areas where tags would be located.

Later called Howard <sup>Takata</sup> at home  
Telephone - 935-3010  
Work - 935-3830

Dinner at Volcano House restaurant - new windows had been blown out by wind-rain storm two weeks ago.

25 JAN  
FRIDAY

Morning breakfast at Volcano House after Christian fell off the bed.

Ohelo berries on pancakes - preserves made by establishment - Waitress indicated that park allows picking of berries for home use at the

check  
Raspberry letter

~8:30 AM

Called Leslie - turtle no longer at site.

25 JAN 80 Visited Volcano Art Center - saw  
Lukia print on sale. → Picked seeds  
Drove around Park - walked Devastation  
Trail. Saw Kilauea Iki - etc. Sulfur Banks.

At 2 PM drove down Hwy 11 to Volcano  
Village - up side road toward  
Mauka Kea; back to Hwy 11 in  
search of Fern Garden Vacation Estates.  
This area is a ~ 2300-2500' level-  
dusty dirt road. Traveled back up  
Hwy 11 - Three side roads (paved) to the  
left with crossstreets - Ohia trees -  
appears to be city-county roads.

961 Kalakaua  
Km 21  
Hilo 96720  
Winniman  
International  
Real Estate Inc.

lot 202  
" 646

→ 935-5144  
→ 961-5888

also lot 23

Connects with Ohia Est. "Smith" realty - → 935-6653  
connects with Private Roads of  
Mauka Loa Est.

Followed school bus in this area for  
awhile - joins into "Pearl Road"  
(not very well paved):

Continued on Hwy 11 to Punaluu

25 JANUARY 80 FRIDAY

after stopping at Volcano store for  
coffee and snacks.

At Punahoa visited Reflections art  
show -

Sent  
letter

Saw pinout by Wesley T. Karetake  
entitled A Relative Turtle - nice design  
Also HONO II - which was basically a  
drawing of a stuffed hawkbill.

935-0982  
2084 KALANIANAOLE  
HILLO

~ 4:30 PM - 5:00 PM

Hiked out to Turtle Bay -

Saw at least 2 turtles foraging in  
Bay just to the south. None seen  
from catch site at Turtle Bay.  
Found nearly whole carapace & plastron  
of small Green - retained. Observed  
other pieces that are new within  
the past year.

Photo of me & Christian on trail -

Photo of Fin & Christian on Punahoa black  
sand beach.

- Notes:
- 1.) Light on beach from restaurant
  - 2.) Joe letter - toy recoveries
  - 3.) Further plans for alteration of Ponds
  - 4.) Marine Turtle Sanctuaries

25 JAN 80 FRIDAY

"  
Drove on to "Horsehoe" for short  
sunset observation.  
Continued on to Naalehu - dinner at  
Cafe - bought milk at Fuzon Store -  
Stayed night at Shirahawa's Motel/Hotel  
\$16.00 double + \$3.00 for crib. (at Waiohina).

26 JAN 80 SATURDAY

Drove back to Naalehu for breakfast  
at other cafe - continued on to Russell's  
Road, and down to paved sub-division  
area - no electricity - IS this  
Discovery Harbor? - doubtful.

Property

Roads in area of Kaunaloa - Waikiki  
Road include Kala, Kahili (good view),  
Maunaloa, Puka and Pele.

11 AM

Turned off road to Hoopana - 2 miles  
down hill to this small, old settlement.  
Small black sand beach, but white coral  
rubble thrown up all along shore  
by storm of a few weeks ago.

Old Hawaiian man digging by house  
stated that he lived there for  
50 years - area used to be

26 JANUARY 1980  
SATURDAY

a busy settlement - place to ship out coffee, oranges, etc.

Air cargo service changed all of this. Before WWII there were lots of turtles in area - easy to catch. He likes to eat turtles. Nesting may have occurred, but he didn't personally see any. During war the army came (camped above) and shot turtles, apparently for practice.

A deteriorated concrete pier is still present.

Group of divers noted - several

Continued on to Pu'uhoanua o Honouliuli (City of Refuge) - brochure in file.

Woman at desk indicated no turtle shell fishhooks have been found; High Tide represents boundary of parks; They see turtles in area

Continued to Kailua-Kona - lunch at MacDonalds - walked through town - mostly expensive resort now hotels, restaurants, shops.

Drove to Honaka Hou Small Boat

"No swimming or sunbathing allowed"

Lelewi Bay -  
Richardson Ocean  
Science Center

Coconut  
Island

Hike  
Hawaiian

Fisherman's  
Restaurant

Susan's  
Fish Auction

55



Waialuku River (Fat Chock sighting)

26 JANUARY 1980 SATURDAY

Harbor, on to Kawaihāe via  
 coastal Hwy (Kāhuna) -  
 observed (Kiholo Bay) ponds from  
 road - couldn't find entrance gate  
 Drove into Anāeomalu (sp) Block  
 through Waikaloa subdivision -  
 main lot area is 6 miles upland  
 beach has nice facilities -  
 separate pond that has sign - no  
 swimming, no fishing. Dark green, turbid  
 water. Beach looks like bulldozed  
 or sand addition - Black-white  
 sand mixture - Recall that in 1973  
 from Bilderback's Valiant Maid I  
 saw what appeared to be white  
 sand beach.

At Kawaihāe I noted U.S. Energy  
 Department restricted area with  
 large diameter plastic-rubber pipes for  
 OTEC project. Surveyed area  
 but did not see turtles where  
 I had observed them during Big Is  
 visit for lecture series.

Traveled down road to Hāpuna  
 where State boat ramp is located -  
 Then down Puaka - noted some  
 damage to houses on ocean front.  
 Could not find entrance to



26 JANUARY 1980 SATURDAY

57

Petroglyph fields. Stopped at  
end of road (State DNR right-of-way)  
at sunset.

Returned to Kailua-Kona and bought  
a coffee at MacDonaldis. Along the  
way, noted what is believed to  
be Kona Village Resort - Gate at  
road entrance - This is apparently  
Kaupulehu - Kahawai Bay -  
(See sighting reports).

Departed at 8 PM on Hawaiian  
Airlines - arrive Honolulu ~ 8:35 PM.

NOTE - Kona Safari & Activity Center

PO Box 416

Kailua - Kona 96740

329-3008 Bus.

329-3937 Res.