

KAUAI - NA PALI - MAUI

GEORGE BALAZS

1981-1982

KAUAI 6-10 APRIL 1981
MAUI 21-25 APRIL 1981

KAUAI
MAUI

3-4 DEC 1981
15-16 DEC 1981

9-14 AUGUST 1982 KAUAI
NA PALI

G. H. BALAZS

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KAWAI DOGARE -

TONY NAKAMURA

Information offered by Linda Collins,
former employee of ALOHA MAGAZINE
related ~ late 1980, early 1981:

Can tell me about KAWAI TURTLES:

her brother, Lindsay A. Faye Jr.
LITTLE PLANTATION
(245-3814)

Eddie Robinson
Kekaha

DAVID Penhallow
KAWAI MUSEUM

CURATOR OF PHOTOGRAPHY

(ORAL
HISTORY)

FWS - KILAUEA Point - 828-1431 ; 828-1520

(#50 RT, 7 day advance)

6 APRIL 1981 Depart for Kauai at 10 AM on Hawaiian Airlines. Arrive ~ 10:30 AM, rented car \$12.95 at Tropical Rentals. Proceeded to McDonalds for lunch - Frequent rain showers.

Had to return to car rental to fix passenger-side door. Checked in to Hale Kihue Motel - \$17.68 for double.

2/1 PM Proceeded to Poipu Beach area - sunny and sky clearing. Found approximate site off rocky cliffs where Elmore reported seeing turtles surfacing - near Makahua Point. Many random specimens in areas. Red algae (Periclyptera?) occurs in dense growths in wave-breaking areas - high energy. Sample collected. Cyrtos and horses are right on cliffs. Consider lights. Observed one turtle (~ 18") - surface - heavy algal growth on shell. Proceeded to "Koloa Landing" - a boat ramp with many rock boulders in water entrance - apparently not being maintained. Noted scuba diving class using site. Proceeded to Spouting

6 April 1981 (ROAD at SPOUTING HORN IS LAWAI Rd.)
 Monday Horn at near end of road, a short distance before Hawaii Bay (is this "Hawaii Kai" listed in State permit?) Spouting Horn area had several vendors. No turtles seen, as previously reported by Rick Coleman.

"Spouting Horn ART GALLERY"
 FRANK TRAIN

Returned back to KUKUIULA HARBOR - breakwater, small wharf, and boat ramp. Proceeded back to Beach House Restaurant POIPO gift shop, art shop - surfing area. At art shop, I saw a fiberglass collage containing large turtle scutes and 20 plumed ribs. Reported 7 years old. On Spouting Horn Road we stopped at DIVE (WEST WIND (742-1303) ^{former} owner - LAKE KAIPAPA large ~ 34" resin polished carapace on wall - also small (~16") on shelf. When I asked man working in shop if people take turtles in area, he stated, "Not if they don't want a \$10,000 fine".

Returned to main road and proceeded to Port Allen - Took photo of sign describing Barking Sands restrictions. (Drove through Hanapepe and out side road to Salt Ponds (red-dirt base).

6 APRIL 81 -
MONDAY

write

Returned to main road and drove on to Pakala - a famous Kawai surfing area just before Makaweli landing (Robinson houses). - Parked along side road and walked to ocean a short distance through cattle pasture. Very red mud ^{small stream}. Near shore ocean area along this entire coastline (starting after Spouting Horn?) is very turbid and silty. Offshore break at Pakala where Alan reported frequently seeing turtles surface when he used to visit Kawai during the summer. Kiawe vegetation - white sand with some dirt sand coastline. Proceeded to Russian Fort site just before Waiwea River - Drove out short dirt road to view of river mouth and partial bar across entrance - lots of drift wood - ~~lots~~ debris in water. Saw large, rusted iron safe along side road. Drove through Waiwea and on toward Kekaha - along this coast there is an extensive stone wall / erosion control made of rocks. Some white sand beach on the other side. Road then curves inland - broad

ACE?

6 APRIL 1981

MONDAY

expanse of barking sand beach. Noted tracks on beach and dirt-bike motor cycles in pick-up truck. Turned around at this point and proceeded back. Stopped at Green Garden Restaurant - "Arashiro" is one of founders. Menu consists of typed cards slid into plastic holders. Lots of business.

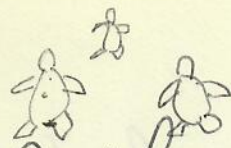
Returned back to Lihue - Hale Lihue. Telephoned David Boynton talked about Kaula ^{Kuichi} Misaki. Also called Green Garden - oriental lady denied ever having it for sale now because it is "now illegal". Called Jim at home.

Had dinner in Motel room - very noisy. Construction workers, apparently from Honolulu, stay here.

7 APRIL 81

TUESDAY

Up about 7:15 AM; wrote up yesterday's notes - telephoned Barry Brady at Kilauea Point - John Andre left early this morning on Bob Justwan's plane for FFS, with Parrish employees. Schulmeisters will be returning on Thursday.



7 April 81 - TUESDAY

Departed Motel about 8:15 AM; stopped at fishing supply store in Lihue. Drove to Waipoua river - river boat tour - and marina restaurant. Saw three turtle shells on wall - with flippers and head drawn in. Adult size on each side, and juvenile, ~55cm, yellowish color, in center.

Stopped at Hawaiian Professional Dive Tours shop at 4-901 Kuhio Hwy, Waipouli Plaza, Waipouli 96746. Tel 822-9422. 822-9404. Adult carapace polished hanging on wall. Tour dives located right next door - owned by same person. Girl in shop indicated that a turtle is frequently seen in save off Koloa landing.

Do people on dive tours ever see tags on turtles?

In Kapaa I noted that 3-4 story wood condos dominate ocean front area of town.

Stopped at Sea Sage Ltd dive shop. 822-3841. 4544 Kukui St, Kapaa. 96746; also in Hanalei 826-6180.

After Kapaa, just before Kealia Beach, we stopped at the point out from Kapaa School. In this area, Alan's uncle Herbert Kam reportedly caught turtles years ago. His partner was Pundon.

7 April 81 Somewhere along cape-haul road.
 TUESDAY after Kealia J. there is a small
 rock that Alan snorkled in 3 years
 ago. No turtles seen, but reportedly
 his uncle used to regularly
 get small turtles here.

Proceeded to Anahola (Bay)
 at ~ 10:30 - 11 AM. Noted 3 houses
 with turtle shells visible. One of
 these was 4262 Anahola Rd. I
 name - VALPOON. Appeared to be
 whole mounted turtle in garage.

One north side of Anahola we
 drove along Aliomanu Rd. - one
 house name was LIZAMA.

Noted old Japanese man catching small
 mullet with (throw net) - out of season?
 Noted BW poster in fishing store
 telling about mullet. Possibly the
 HASC could produce a poster for turtles
 for distribution to Dive shops, etc.
 Check on cost with Bruce BIKLE.

Proceeded to KOOLAU Rd, blacktop, -
 first turn-off entry is at Papaya ^{Moloaa}
 fruit stand. We took second
 turn off a few miles further.
 Drove south to left-hand turn
 indicating "Beach access Road - no camping".
 Parking area present just before
 cattle gate walk entrance.

7 April 81

TUESDAY

From this lookout, we could see fringing reef off Kaakagniu - semi-elevated reef flat, off which waves break, is the site where Alan saw turtle harpooned. It was dragged over reef and butchered ~~it~~ on the beach. A search of the area did not reveal any remains of turtles at the present time.

From lookout, I saw perhaps 9-12 turtles ^{at one time} just out beyond breaking white water. Many appear to be full-sized adults. Some are floating at the surface - others are close to reef edge - where Alan previously collected Pterocladia. Two turtles continually close together - attempts at copulation? Hiked along slope line to the south to base of Kaakagniu gorge - some turbidity in water. Proceeded up the side of the hill - lots of iron wood trees. I walked across cow pasture plateau and could see Moloaa Bay in the distance. (Photos of Kaakagniu.)

Returned to car by about 3 PM - observations suggested there are fewer turtles present now - due to low tide? Continued along Koolau Rd. to turnoff to Moloaa Bay. Noted residence name EDWARD HOVELL. Several nice houses on Bay.

7 April 1981

TUESDAY

Drove to main highway and on to Kilauea Tours, and down road to the right to Kilauea Bay and quarry. Rares mouth here had sign saying "no nets or spearing in river". Source - ?

Notes - In inquiry letters, I need to ask about the recovery of tags.

Returned to Lihue motel about 6 PM. Ate dinner in room and had ice-cream after walking to MacDonalds.

Need - Sectional topographic maps trimmed to match and affixed to mount board. (seen at Pappion Helicopter office).

8 APRIL 81

WEDNESDAY

UP ~ 7:30 AM. Egg McMuffin at MacDonalds, then proceeded to Kapaemahu, via Moloaa where we walked beach. A few slumps of Amanzia found ashore. Also, many Stes globules. No feces found.

8 APRIL 81 At 10 AM there were 10 limu
WEDNESDAY pickers on the fringing reef.

Low tide at ~ 11:30 AM, Quake
are rolling in. Reported that at least
one woman sells her limu to her
to Honolulu. 4-5 turtles seen at
different times. Two turtles seen
close together - social? or mating
attempts? When waves build up
before breaking, turtles could
sometimes be seen "through green water".
Consider possibly that presence of
limu pickers helps keep turtle poaching
down. Also possibly the same effect
for condominium with wealthier
Caucasian owners.

Drove out to Kilquea Pt. not open
to the public until 12 noon (to 4 PM).

Continued and turned right on
Kalihivai Rd. Saw Kalihivai Bay -
muddy water. Road is washed out
at river - had to back-track
to highway. Turned off to right
again a short distance later - followed
road to Kalihivai Beach and Park
Pavillion. Walked on Honu Point.

Told by man fishing from Sears Gamefisher
that he has only ever seen one
turtle off Honu Point. Reported big
turtle at base of cliffs off Pringville.

8 April 81

Wednesday

Jeremy Harris lives in area.

Drove to Anini Beach, and end of road at stream. Princeville cliffs a short distance ahead.

Backtracked and drove along main road to Princeville airport and Papillon Helicopter tours. Need to send sighting forms and fact sheet. Request specific information on Niboli and Nuulob.

At Anini, I noted house name CHISHOLM "Anini Rod & Reel Club"

WRITE TO MANAGER?

Drove to PALI KE KUA Condominium. Walked down cliffs via their private cement causeway. Left goes to sand beach - right to rock ledge and boulders. No turtles seen.

Noted foam lines way offshore. Wondered if turtles use these for navigation - or feeding when out to sea?

I was also told that turtles are seen from golf course tee #7. Did not locate.

Proceeded to Pepe street (and one before it). Drove to edge of cliffs.

8 April 81

WEDNESDAY

steep declines - trails barely present. One of these is where Alan and Mark descended with Scuba and tagged two turtles.

Proceeded on through Hanalei where I noted Camp NAUVE YMCA. Drove to end of road at Haena.

Returned to Kilauea Pt after calling Barry Brady at ~ 5:15 PM. Visited with him for a short time, then walked out on Point - saw new signs, including one on Marine Animals - green sea turtle - drawing of adult male. Visitors can see them in waters between point and booby colony.

Drove back to Kaakaoahu and made observations from 6:30 - 7 PM.

Returned to Kilauea Point at dark and set up tent - ate dinner - Clear night, but dew present - ground damp.

Consider natural protection to turtles:

1. Steep cliffs
2. Rough seas
3. Inaccessible coastline
4. Cloudy - muddy water

Need - Poster on protected status of turtles. Cost?

Two trails at Kilauea Pt - one behind TREV/MARLECK GUEST HOUSE. ONE BEHIND STORAGE SHEDD, USED BY FISHERMEN

9 APRIL 81
 THURSDAY Point UP ~ 7:30 AM - walked out Kilauea
 Point - one small turtle seen
 on the right (facing out), surfacing
 at beginning of rough white water, where
 waves break. At 9 AM, we saw
 probably 4 on the left (1 adult; 1 SA; 2 juv)
 and the same? one small on the right.
 While the adult was on the surface, I
 saw a fish swimming around it.
 Consider article/note: GREEN TURTLES
 AT KILAUEA POINT, KAUAI

Arrived Kaaka'aniu about 9:30 AM.
 Low tide at 1:15 PM.

4-8 limu pickers present - most
 older people. From the elevated look-out
 areas, we saw 5-6 turtles - 3 floating
 at the surface. Also 3-5
 whales swimming back and forth.

Portuguese man said that, while picking
 limu, a turtle was found caught
 in a "channel" on reef flat, trying
 to get out. They cut its throat
 and carried it up the hill in pieces.
 He then told us that it is "illegal to take"
 them.

Between ~ 10:30 - 1 PM, we walked on
 reef flat - noted lots of limu koku;
 and a green alga that looks like

Need
 telephoto
 & tripod

9 APR 1981

Laurencia; Turbinaria; Pterocladia at certain area more toward ocean side of reef. Large areas are yellowish on top, but red and healthy at bases.

Entire reef structure is porous - like a sieve - water dissipates through these numerous holes. Noted one area where a block of the reef had collapsed.

Spent a long time watching waves roll in and lift turtles up so they are visible through the wave.

Need telephoto & tripod

15 juvenile turtles seen close together at one time. Photos taken of this, of reef edge, and close-up of Pterocladia and Pinna kaku together. Algae collection made. Departed Kaakaaunu in car about 1:45 PM. Drove out Aliomanu again, and to Anahola.

Noted name COLÉ on Kamane Rd at Anahola.

Stopped at MacDonald in Kapa for lunch. Before lunch we

stopped at "The Hardwood Factory". Saw petroglyph replica on wood plaque.

woman reported this exists at a beach "before Poipu"



9 APRIL 1981

THURSDAY

Checked into same motel
then departed for Poipu at ~3:30 AM.
Noted the following ^{ocean front} resident names:

TUSLER

F.W. KNOCH - Box 327

* LOWRY McCASLIN - Box 348 older, elegant house -
extensive property

H. KAOHI - Box 331 LAWAI Rd.

AMNEUS - Box 332

H. KATO Box 333

Drove to same lookout close to
Brenepke Beach - tide high, water
turbid. Saw 2 juvenile turtles
surfacing (foraging) in this area.
Proceeded to small bay area where
wooden fence blocks view. Saw
lots of Pterocladia also in this
area. Turtle surfacing off wave-
breaking shoal.

At end of paved road I saw
buildings that formerly were the
Coast Guard Loran Station. Automatic
navigation light present on point. No
turtles seen from along these
cliffs. Noted large sand dune
in the distance, to the east.

Returned to Spouting Horn - no
turtles seen. Continued along
the road to 3 sites where

9 APR

9 APRIL 81

trails lead down to the sea.
 Noted Pterochelone - or at least it appeared
 to be. Observed 2 turtles regularly
 surfacing close to rocks in an area
 where sand bottom was
 being churned up. Cactus along
 roadside. Road ends at gateway to
 private residence. Tried to photo
 2 turtles (1 ~ SA; 1 JUV.) as they surface;
 Got splashed by a wave, so gave up.
 Drove back along Hawaii Road
 recording some residence names. Returned
 to Lohue motel at about dark.
 Dinner in room, and ice cream at
 MacDonalds. Telephoned Schuppsmeister's
 at Kilauea Pt. Informed that a
Subadult ("almost adult") basked for
a long time on South Tern Island
beach - photos taken. Beth Flint,
 a volunteer, Beth _____, and John
 Andre are now at Tern Island.
 Tried to telephone Dallas Gray - no answer.

10 APRIL 1981
FRIDAY

UP ~ 6:30 AM - departed for Kaakaania.

Made observations from 8 AM - 9 AM.
one juvenile seen at 8:45 AM - no others.
Conditions appeared good - why no other
turtles feeding? Synchronized feeding?
Two limu pickers arrived ~ 9 AM.

Different
Scenario
for feeding.

Consider that this is a new
ecosystem type of feeding site. Except for
Lizianski, this is (the only site found)
where Pterocladia grows on calcareous
structure. Fresh water must percolate
through this area. What does inside
of reef - holes - look like at night?
Turtles sleep in area?

Consider use of helicopter to release
captive-reared turtles at St. Park. 50 each
at 6 sites - some of which I sample.
Kaakaania has deep-water ^{direct} access to reef.
Frequent heavy waves.

Why do turtles prefer Pterocladia, and
certain other algae?

Turtles are difficult to study - elusive.
Only usually get a glimpse at the surface.
Recall that at regular study areas most
turtles are only "moving" feeding at morning
and evening twilight. Surveys

10 APRIL 1981 FRIDAY

at Kawai, for the most part have not covered these periods.

While at Kaakapanui we saw at least 2 whales offshore - Alan saw ~~the~~ a boat, (blue-cabined Radon with outriggers), chase after whales each time they surfaced. Returned to Lihue and to Kaihi Surf Hotel. Saw two shops with array of elephant ivory carvings. Noted Jack Harter - Helicopter both at hotel. Returned to Hale Lihue motel and packed up all gear.

Telephoned editor (woman) of the Garden ⁽²⁴⁵⁻³⁶⁸¹⁾ Island newspaper to inquiry about column of crimes - etc. She informed me that "Fish and Game" violations appear under "District Court" column periodically. Checked in rental car and was transported to airport by van. Departed on Hawaiian Air at 12:04 PM (Schulmeister aboard).

Before departure, I telephoned Na Pali Zodiac (P.O. Box 456, Hanalei, 96714) at 826-9371. Informed by woman that 5 hour trip is \$70, 15 h sightseeing each way, 3 hours on the beach at NUALOLO KAI. Currents and waves just recently calmed enough to resume trips.

Approximate costs: 6-10 April

3-days - Motel for two	#17.68
Rental Car	-
Additional Gas	3.00
Food, ^{misc.} at least \$10 day	40.00

Additional Addresses to contact:

Jack Harter, P.O. Box 306, Lihue, 96766

John Barretto, 5405 A Kawaihau Rd., Kapaa 96746

Papillon Helicopters, Box 608, Hanalei 96714

Kauai Divers, RRI, Box 56, Koloa 96756

Letters should include:

- ① Ehrenfeld "Fact Sheet"
- ② Request about tag recoveries
- ③ SASE
- ④ Map of Kauai

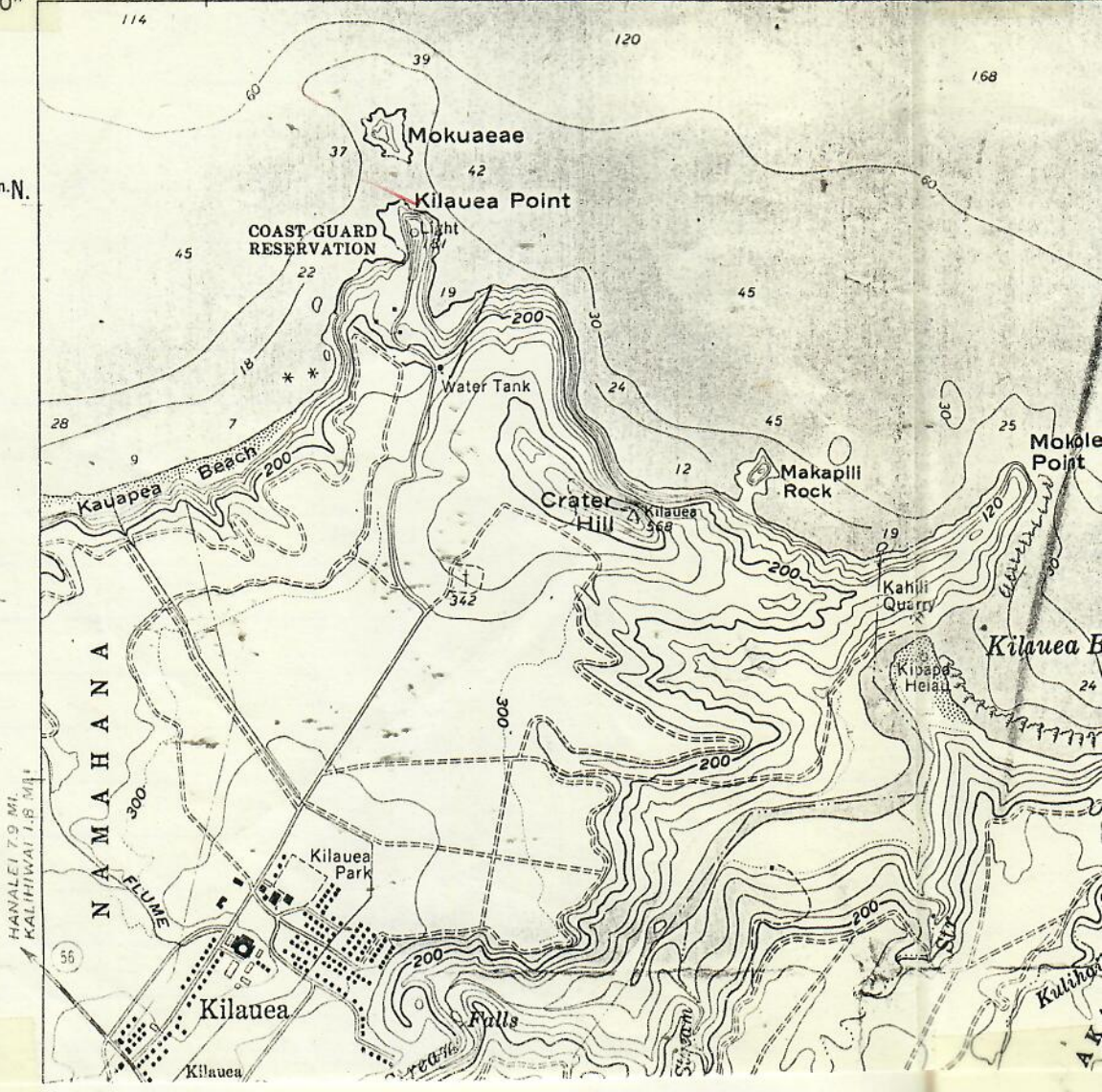
Summary -
Conclusions of Kawai Trip

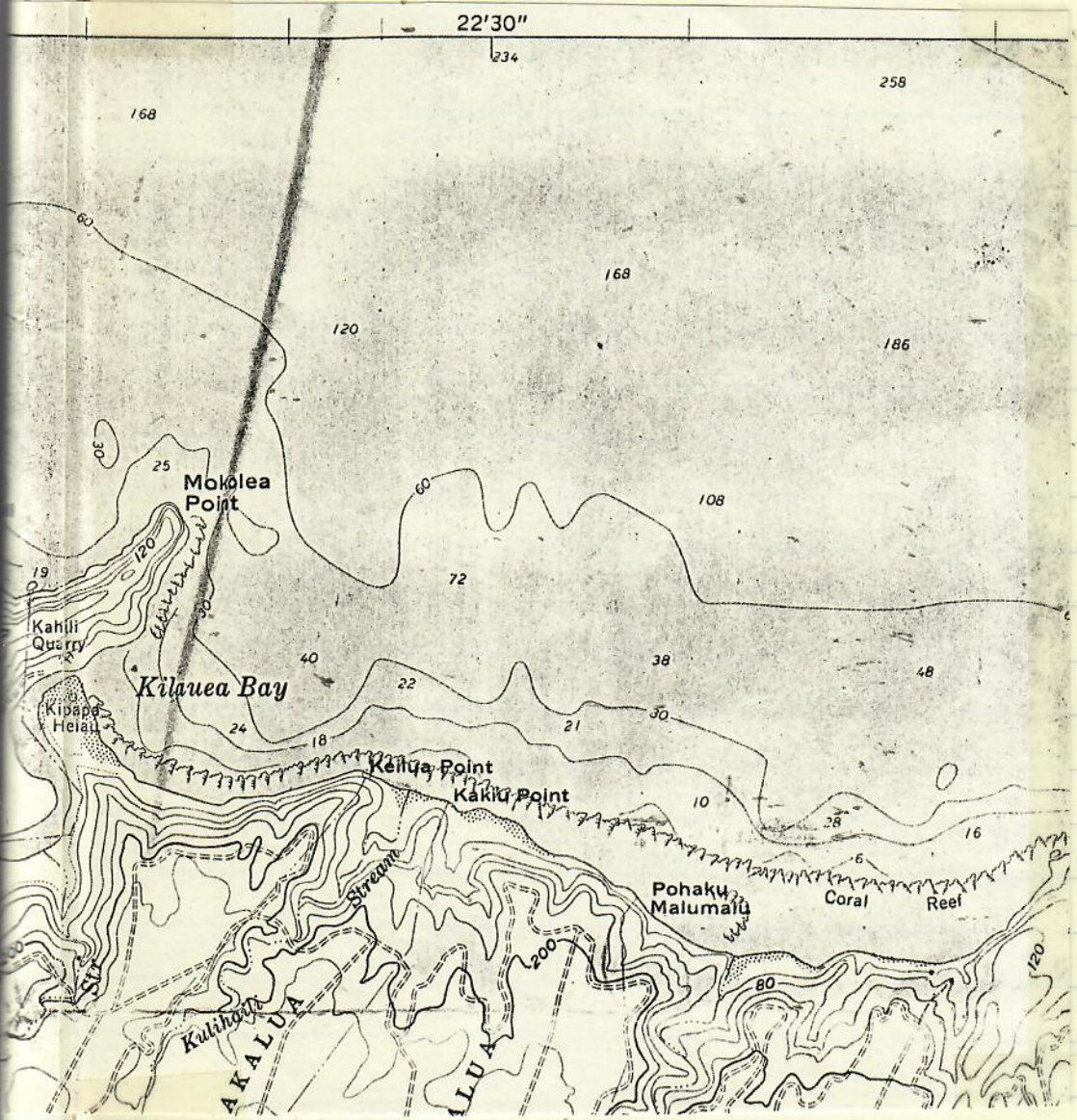
1. Analyses of Kaa Ikaani foraging site, a key site for green turtles
2. Reconfirm absence of "good" study sites on Kawai, due to environmental conditions, safety, and frequency of public exposure
3. Gained first-hand knowledge and experience with Kawai geographical and environmental setting
4. No turtle on sale at major restaurants

159° 25'
22° 14' 30"

458000m.E.

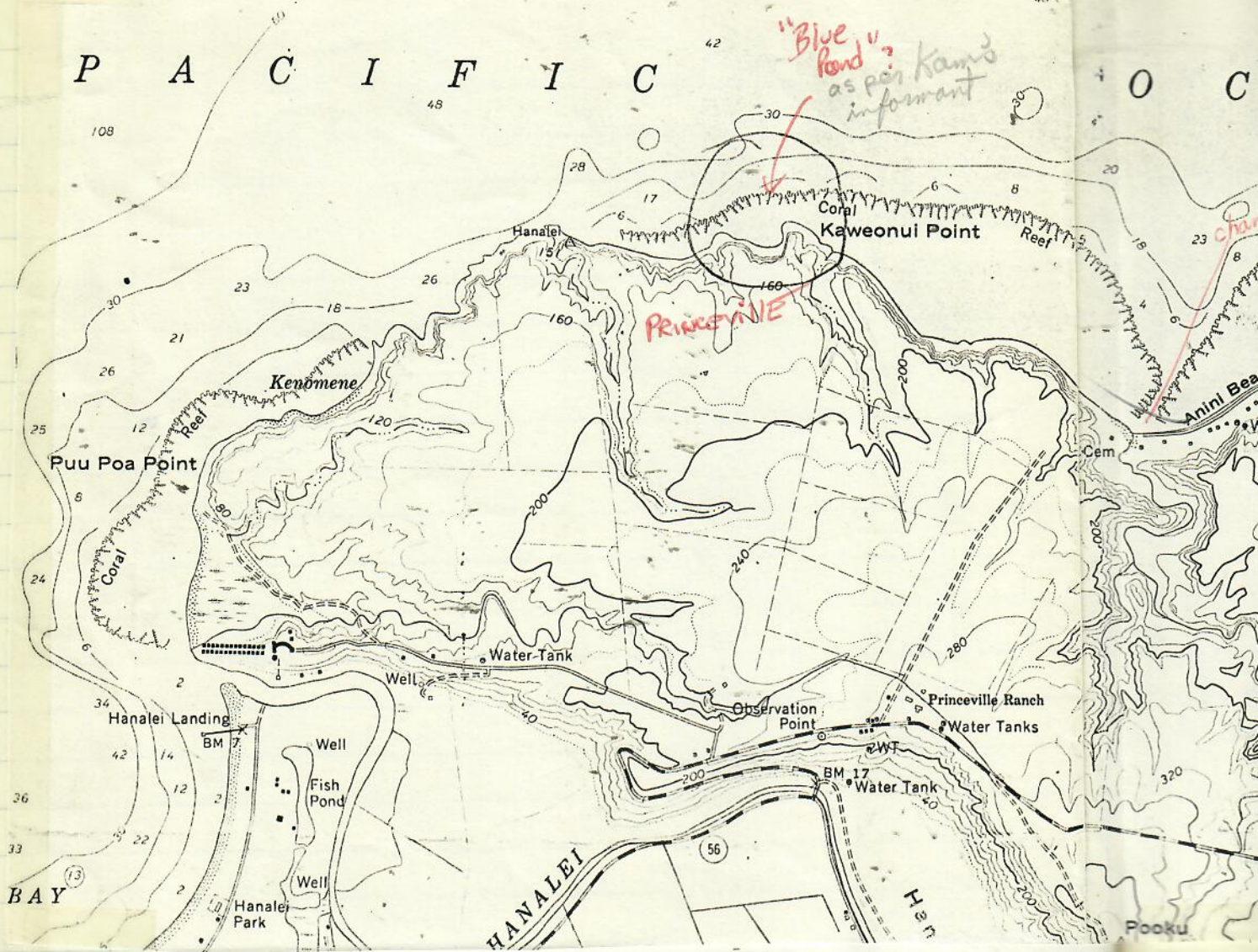
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P A C I F I C

"Blue Pond" as per Kam's informant



27°30"

520 000 FEET

O C E A N channel

channel

Honu Pt

Kalihikai

Kalihikai Park

Beach

Ka Lae o Kowai

muddy water

Kalihiwai Bay

Hanapai

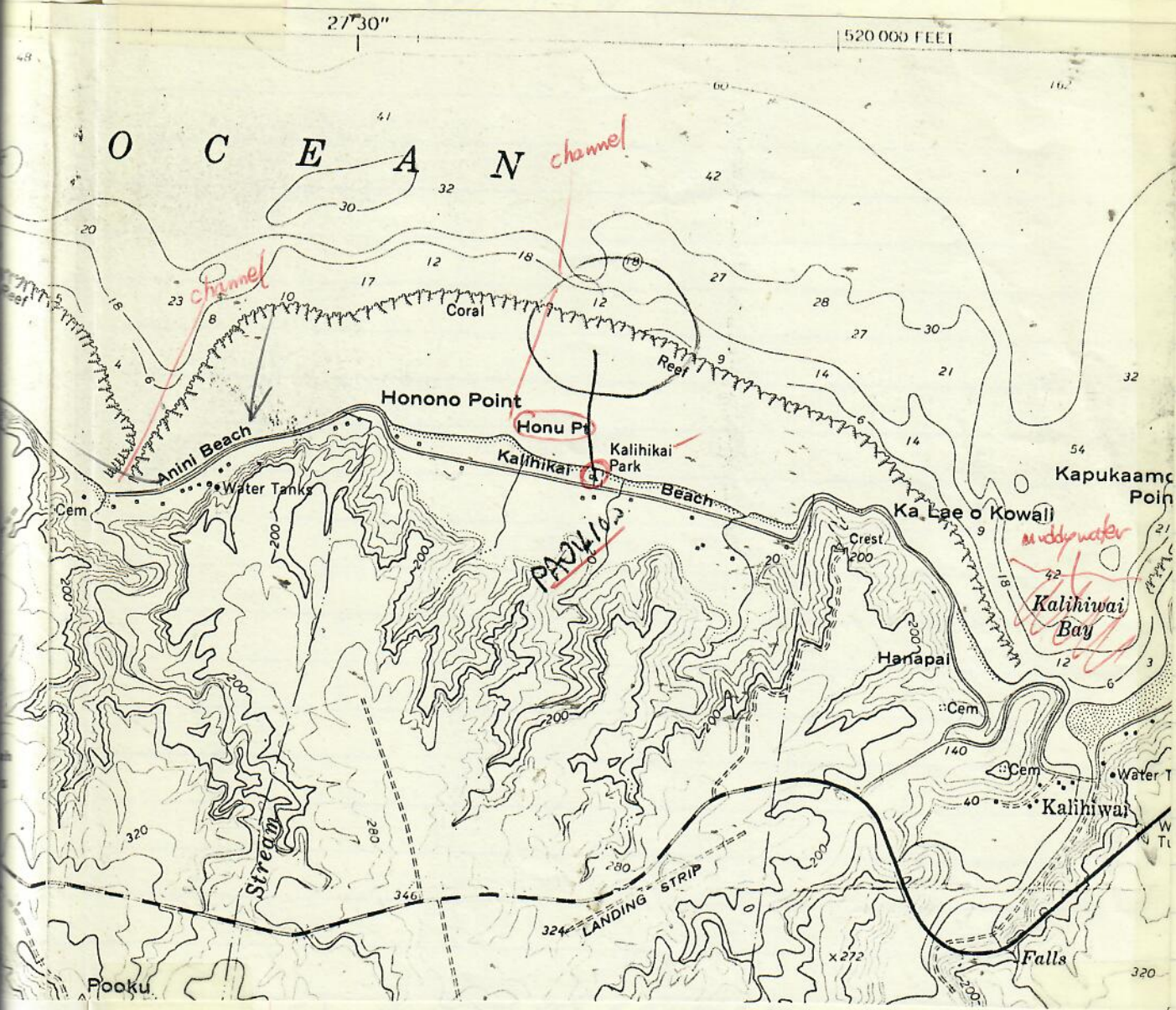
Kalihiwai

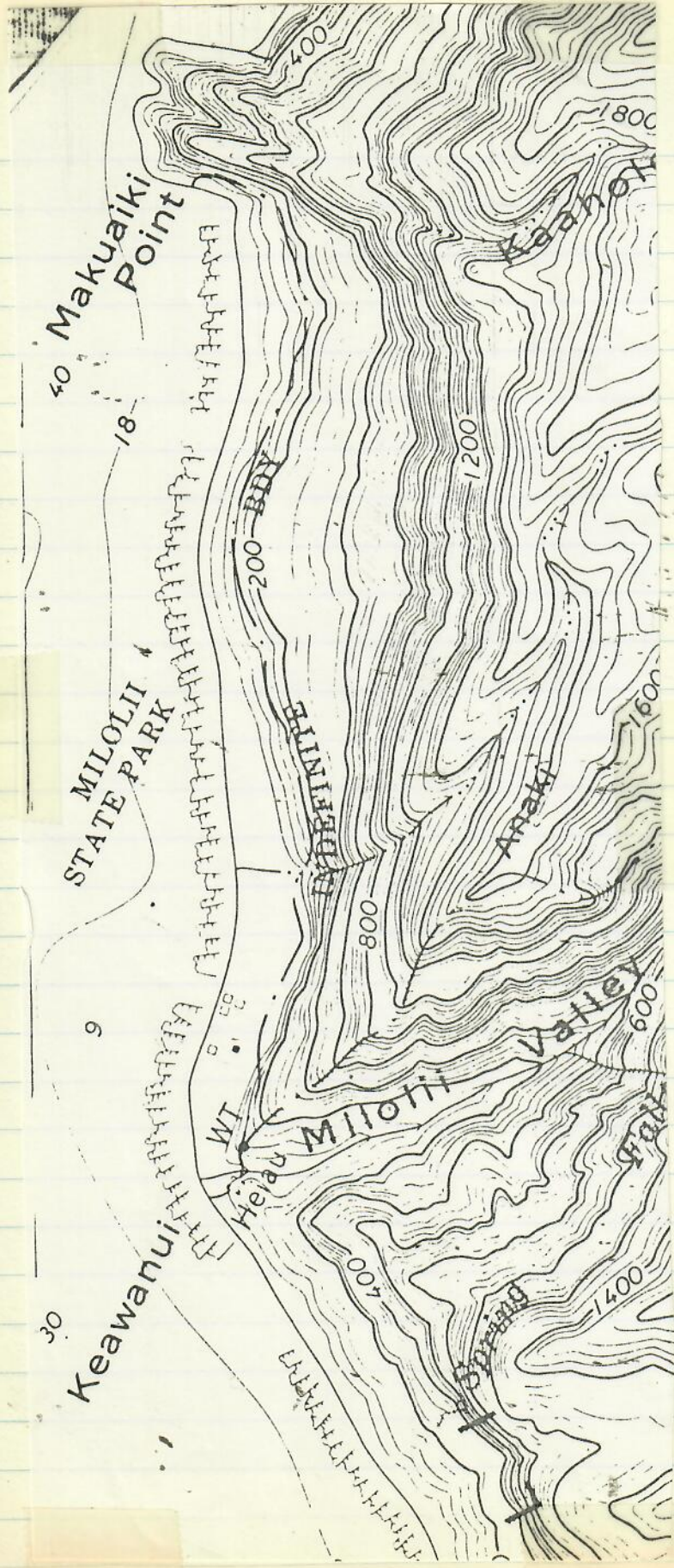
Falls

LANDING STRIP

Stream

Pooku





Taylor's house in West Maui - take new
 Hwy to end - leads into Napili hau -
 to old road that parallels beach -
 turn left on old road, go $\frac{1}{8}$ mile,
 on right, Alehoa
 turn right on Hale Malia - go to end -
 road ends in their carport - key on
 top of header beam on left where tin
 joins into telephone pole.

Neighbor - KENT SIMON

21 APRIL 81 DEPARTED FOR MAUI ON HAWAIIAN AIR
 TUESDAY at 8:35 AM. Made two trips to the
 airport in my VW to transport all
 of baggage. Flight to Kahului - 20
 minutes long. Viewed N and E coast
 from plane.

Rented Robert's - 4-door 1980
 Toyota Corolla automatic for \$12.99 day.
 Loaded gear and departed -
 drove to Maalaea small boat
 harbor - new USCG being constructed.
 Visited "FRESH ISLAND FISH - Maalaea Harbor"

21 APRIL 81

TUESDAY

21 April
Tuesday

Buzz's wither still open -
2 large turtle shells on the
wall for inside decoration

Ice plant - lots of bottom fish present.
Drove down back road ~ 1 mile
toward Kehei - lots of abandoned
cars. Coil of barbed wire (used?)
noted. Power generating (?) plant
a short distance away.

Sand beach extends all along this
coastline. Noted shallow rocky
areas, and rock grain, that host
a red alga, presumably Pterocladia.
Several people walking along the
beach. Inquiry to one man, 5 years
on Maui, but only recently
walking here, revealed no observations
of thylacines of any sort - "remains",
fishing, offshore, etc.

Drove around Maybregor Point
and on toward Lahaina.
Stopped Launipoko "State Wayside" -
black fine sand beach area -
lots of stone-work for erosion
control. Same Pterocladia growth
on intertidal rocks at eastern
end.

Proceed toward Lahaina and stopped
at Puamana - a small park with
low-rise cordos bordering on the
Lahaina side. Nearshore water

Noted posters concerning
- BRING A DARK RUMPED PETREL
- TRANSMITTER ON FORPOISE - RETURN
NUMF 146

21 April 81 is turbid - adjacent areas are
 Tuesday favoring for surfing. Tiger shark attack at
 this site (Jim August 1980).
 Drove through Lahaina - had lunch at
 MacDonalds - bought some food at
 Foodland. Continued on through
 Maanapali to Napili - beach right of
 way through condos, etc. very congested.
 Arrived at Feighton's house,
 which is at ALAELOA PT,
 about 1/2 mile before Napili. Other
 visitors just preparing for departure.
 We unloaded gear in garage.
 Noted Pterocladia growing at certain
 rocky sites in front of Feighton's
 house.
 Drove on to Fleming's Beach (dangerous
 swimming area), then to Honolulu
 Bay - many surfers at east side
 point. This is the site where
 Alan tagged a juvenile from Nacho's
 while scuba diving.
 Continued along rocky, cliff coastline
 sent from air this morning - past
 Lipoa Point, Nakalele Point and
 Mokolua Point. Just before Mokolua Pt
 a dirt road starts and continues for
 "5 miles". We turned around at
 vantage point overlooking Puu Koa (~600'
 peak). A small village is located

21 APRIL 81 TUESDAY

in this bay. On the return dive, we frequently stopped to look out for turtles, particularly near Nakalele Pt, a site listed by Hirth (?). A lua and humpback whales seen, but no turtles.

Drove up to Pineapple Hill restaurant at ~ 5:30 PM. Many condos in the vicinity. Returned to Sights - watched for turtles from porch - scored one juvenile during twilight off NE end of point. Wrote up notes during the evening - bean hot dogs (c-rating), applesauce for dinner. Slept in guest house on air mattress.
Telephoned Fin.

22 APRIL 81 WEDNESDAY UP ~ 6:15 AM, to look for turtles - none seen - slept again until ~ 8:15 AM.

Last evening we saw several fishermen walking along shoreline, presumably looking for collecting opihi, crabs. Considered - protection against killing turtles openly that may be afforded by beach-front houses occupied by wealthy people that may like to see turtles in the vicinity. When skin diving from ~ 10 AM - 11:30 AM. (low tide). Plexalada growth

22 APRIL 81 Wednesday

is extremely lush along this area - however, a lot of it has coralline encrustation.

Also noted a lot of Ulva in deeper water, and Kana collected some Amanoa. Noted a number of reef fish - mostly small in size. A fair amount of live encrusting coral growth.

At ~ 11:45 AM I called Maui DLNR (DOCAFE) - 244-4352 - Kai is at Ulupou - all day today. ("Enforcement personnel won't be in until 1:30 PM")

From ~ 12:30 - 1:30 we walked along coastline to the east - continuous houses, fronting ocean cliffs.

Pterocladia lush and very abundant all along coastline. Shallow area off this coast extends out ~ 1/2 mile - "green" water, etc. evidence when bright sun is out. However, there is no "fringing" reef that causes waves to actually break. Inlet of coastline (seaside) off abutting private property prevented us from walking further along the coastline.

Returned to house, where I met Joe - who does carpentry work for Leighton. He surfs a lot - indicated that

High Tide ~ 6 PM
Sunset - ~ 6:45 PM

22 APRIL 81

WEDNESDAY

he sees turtle's backs offshore at breaking waves off point to the southwest of Leighton's house. Also, he has heard of big turtles regularly being seen just outside of Kahului Harbor on the left where a stream runs in. Reportedly the turtles feed on material carried down by the stream. He has never heard of, or seen, a turtle being killed on Maui. I estimate that he has been here ~ 2-3 years.

Set one section of net at ~ 3:30 PM, off to left of point just outside and somewhat to the front of awash rock hosting lush Pleurocladia

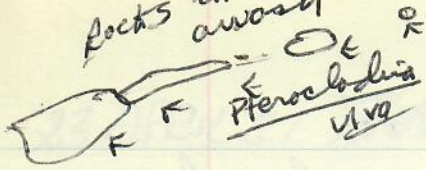
Gardner arrived and mowed law, trimmed Nangaka. Picked Opili along the rocks.

At ~ 5 PM I drove to Honokawai supermarket and P.O. - Very modern and well stocked.

Consider: Two ways - strategies - of catching turtles

1. Go out after them - Scuba, hard.
2. Select proper sites, and let them come to you - nets.

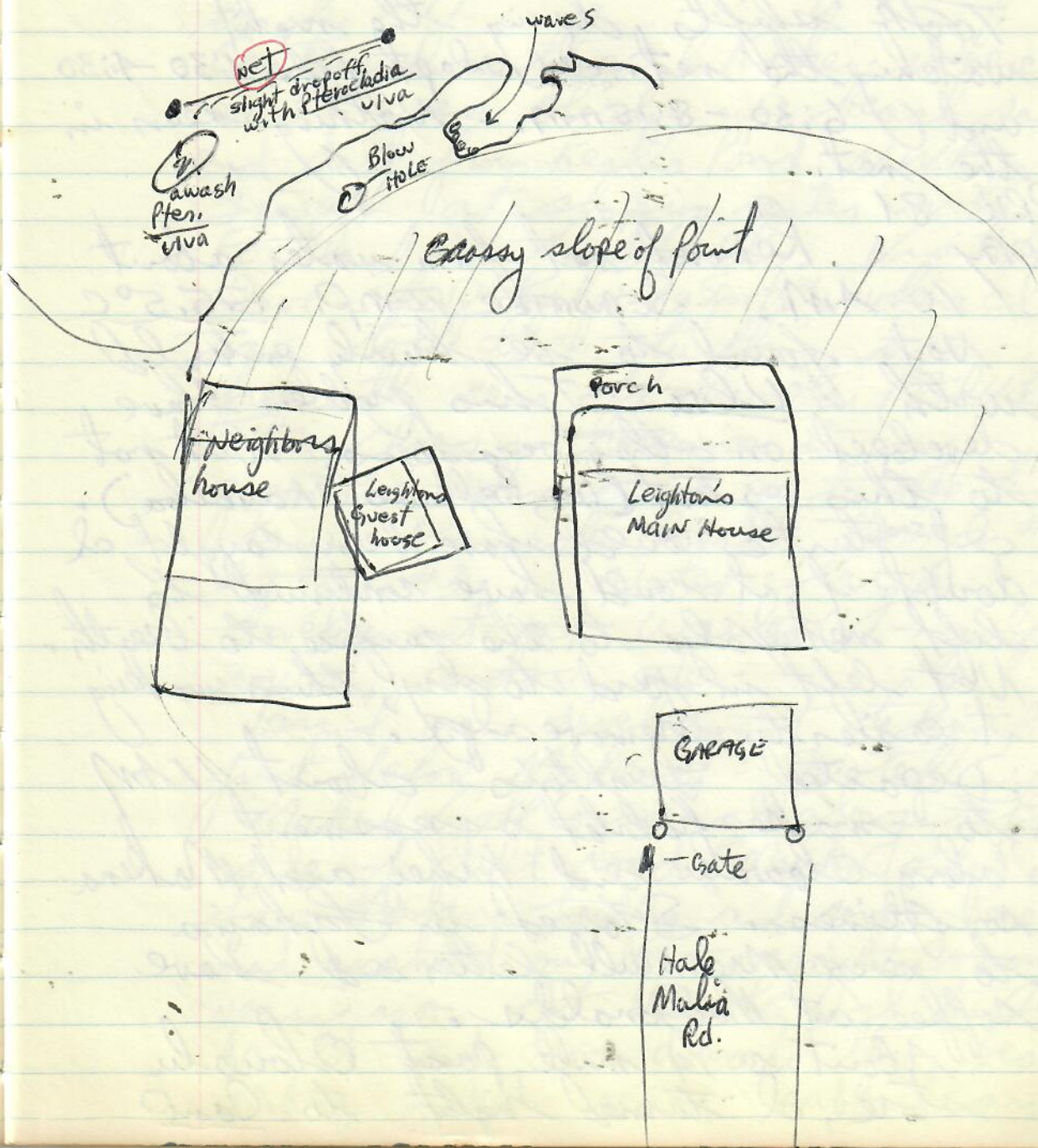
rocks almost
awash



↑
Lanai

↑
Molokai 39

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slight
bay



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22 APRIL 81

WEDNESDAY

Spiced beef, figmentons for dinner.
 Watched for turtles from
 Feighton's porch, but none seen.
 Sunset at ~6:45. Light still
 barely present at 7:45 PM, ^{collected A. friedling}
 Took shifts during the night
 watching the net. I slept from 1:30-4:30
 and 6:30-8:15 AM. Nothing seen in
 the net.

23 APRIL 81

THURSDAY

Removed net from water about
 10 AM. SEAWATER TEMP. 25.5°C
 Net found to be heavily entangled
 with Ulva. This problem have
 developed on other occasions, but not
 to this extent (i.e., Bellows, Kaula).
 If ^{small} turtle would have been caught, I
 doubt if it could have continued to
 lift net w/ alga to the surface to breathe.
 Net left in yard to dry, thus making
 it easier to remove alga.
 Departed Feighton's about 11 AM.
 to make habitat assessment
 along Olowalu and Kihei and Makana
 coastlines. Stopped in Lahaina
 to xerox Mae Mull letter and have
 coffee at MacDonalds.
 About a 1/4 mile past Olowalu
 store, I turned right to Camp

23 APRIL 81 ~~Wednesday~~ Tuesday

Pecusa, the offshore site reported for Feb-March 1980 by Anne Appleby. Reef extends out a considerable distance and nothing could be seen from the shore beach.

Continued on through Kihai where strong winds were blowing up beach sand and dirt from Kealia Pond. NWR. Stopped at shopping center with Foodland and Nordbalds. Visited Dive shop "Kihai Sea Sports" where I was told that turtles are frequently seen off Puuolai ("Red Hill"). This was in response to my question - "where can I go to see turtles?" Saw Kamaole Beach parks #1, #2 and #3. Noted large development at Wailea - golf course, condos, etc.

Noted new development taking place just before Makana. Noted Makana Golf Course all along left side of dirt road (Makana side). Saw Makana Landing and cove where we had anchored our boat overnight many years ago. At Puuolai I turned right and drove down to the beach. Many parked cars, rubbish and

23 APRIL 1981 Thursday

a few abandoned cars. Keawe growing all along coast. This is the area where ^{in 1972} Beech Dekego (Mae's daughter) and her boyfriend photographed an adult green inland, dead and decomposing (photo in file). Up over Puuolai to the south there is another sand beach (much smaller) popular for body surfing and nude swimming. Noted jeep and jeep tracks all along the main beach.

Continuing on we saw a turtle shell on Va house (address # 7090) at the beginning of Natural Area Reserve - Ahiki. The car license plate was KH6 GBK. Perhaps I should write a letter of inquiry. DNR sign indicated the prohibition of fishing gear, pry tools, pets, etc. No removal of minerals, biota. Closest house to Lakehouse Bay is "The Hunter's".

NOTE: That surfers sometimes have a good knowledge of the whereabouts of turtles.

Returned via same route, stopping in Lahaina about 4:30 PM to view merchandise in shops. Turtle shell noted in bar at Pioneer Inn.

23

Thursday

TO
HAWAII

23 APRIL 1981

Thursday

The amount of scrimshaw on sale seems staggering. Also elephant ivory.

At WHALERS LOBBY, I noted FWS^(elephant) and NOAA^(whale) permits posted. FWS had expired 9/80. This store had horns, heads and large quantities of elephant and whale material. It seems ironic to sell small whales carved from whale teeth, small elephants from elephant tusks, and then have a "save-the-whales" sticker in the window. As a Greenpeace collection box.

A sign in one store told how the elephant ivory is derived from legal kills in S. Africa, where the herds have to be thinned. They always use ivory that is derived from dead animals. (Should copy this exactly as it reads).

At ^{851 FRONT ST.} South Sea Trading Post (possibly the same store as in Kona in Kung Ham Hotel) I saw a comb chair piece made of black tortoiseshell, with only a few gold spots; a letter opener, probably from a small hawksbill plate (#13) and an etched hawksbill scute from Palau (not for sale).

At Central Pacific Divers, I obtained their brochure showing a scuba diver with a juvenile green.

23 April 81

Clerk told me that a place to see turtles is off Puamana, where they feed on seagrass.

Returned to Lightons about 6:30 PM - watched for turtles for ~ 1 hour; none seen. Chicken and rice, beef and potatoes for dinner. Jim called me at 9:30 AM.

I telephoned the following restaurants and asked if they serve turtle (or turtle steak):

Whale's Tale - 661-3676 (no)

Mama's Fish House - 579-9672 (no)

Buzz's Wharf - 244-5426 (no, but they may have it at their other restaurant, Pine Hill if so it would be frozen steak.)

24 APRIL 81 UP ~ 7 AM; Departed for Paia - Hana
FRIDAY assessment ~ 8 AM.

Saw a turtle just past the surf from dirt access road just before Ohowaku. Easy to spot in sun - brownish color contrasts strongly with greenish water.

Drove to Kahului where I xeroxed and mailed copies of Mull's letter. Proceeded to Hana. Stopped at Baldwin Beach Park where I saw two men

24 APR
FRIDAY

24 APRIL 81
FRIDAY

skin diving - fishing offshore. Rough water - turbid. Strong trades blow onshore. Continued to "old Pua'aun." Turned down several residential road that dead-ended in private property. Saw red alga (Heroclelia?) growing on black rocks close to shore. Presumably fresh water seeps into the ocean at these sites. Saw 2 small shells on wall inside house - one estimated at ~14" SCL.

Saw 1959 Impala 579-8076 - #1500 "ops Sargent"
Arrived at Hookipa - "world famous Surfing Beach" at 10:30 PM. Heroclelia also along this shoreline.

Proceeded on toward Hana. From roadside cliff just before Honomanu Bay we saw two adults (or nearly adults) close to shore - one appeared to be traveling close to surface, in an easterly direction. At first I thought it could possibly be a hawksbill, but later changed my mind. The second turtle was sighted after ~5-10 minutes - approached first turtle and displayed some interaction (courtship, aggression or ? -).

Continued driving - to the east side of Honomanu Bay - from this roadside cliff site (at old wooden bench?) and waterworn boulder cemented into ground, we saw an adult surfacing regularly just outside

24 APRIL 1981 FRIDAY

breakers close to boulder beach, at head of bay. Water turbid from breaking waves. Good visibility from vantage point due to height of sun and brightness. (note on the return trip from Hana there was a sheen on the water's surface due to low angle of sun - it would have been nearly impossible to see turtles at this time).

Drove out Keanae Peninsula.

Continued on and arrived at Hana about 12:45 PM. Noted 2 fishing boats tied near old concrete wharf - one boat (~35' - the larger one) was rigged with reels for bottom fishing.

We ate lunch in the back pavillion located near the wharf.

Visited Hana Ranch Store, where a Hawaiian woman told us you could see turtles off the cliffs immediately down from the store (walking through a pasture necessary), or off Ukiahulu 7 pools.

We continued on the paved road past Hana for the 10 miles to Kipahulu. From the roadside cliff a short distance out of town we saw about 7 turtles regularly

2:15 PM

24 APRIL 81

FRIDAY

surfacing in and outside of breakers close to cliff base. This site is at the border of my two topographical artillery maps, and just before a very elaborate, expensive house (mail boxes SAWYER & MORRIS) having a "Gazebo" overlooking the rocky shoreline. Photos were taken of turtle surfacing. Both an adult (large) and several subadults were seen "feeding" in this area. When a wave would "pull out" and the surface became clear, turtles could be seen swimming out through shallow water among the boulders. Presumably they were feeding on the rock. Red algae, believed to be Stenocladia, could be seen intertidally on the rock island and at other sites.

At Kipahulu, we parked and I talked to National Parks Service ranger Eddie Pu and YAC (Yac?) girl. Report that turtles feed on rocks in the morning when it's calm. "Turtles are present all along this coastline, more so than other areas on Maui". National Park area is ~ 1 mile strip.

24 APRIL 81

Friday

Drove back to Kahului -
 noted that most of road is
 not along the coastline.

Saw turtle shell at COSMA
 residence. Drove back to Napili
 and spent the night again at Feighton's
 house.

Telephoned about 59 Chevy Impala
 579-8076 (EPP's Sargent).

25 APRIL In the morning, we drove along the
 SATURDAY coastline (toward Lahaina) - noted
Pterocladia at several sites.

Looked in various shops in Lahaina.

AT ALBERTA'S GAZEBO I
 noted tortoise shell bracelets, 3 total -
 thick - deep caved internally - honey
 yellow - 2 - \$70 ; 1 - \$100. Address:
 "The Wharf - #132"

Visited American Dive shop and talked
 to Mickey - She told of
 "Turtle Valley" off Hookipa park
 (~30' deep) - "Medieval Rock"
 near McGregor Point; and
 turtles off Lanai -
 Manager of shop is "Guy".
 (see drawings taped on page 53.)

25 APRIL
SATURDAY

25 APRIL 81 Proceeded on to Wailuku
SATURDAY and out to the north ~3-5
miles to Wiahee. Dirt

road was too rough, could only
see stream mouth from a distance,
across cow pastures.

Drove back out to Paia and
saw the Chevrolet - 2 photos taken.

Returned to Airport and departed on a
flight at ~4 PM - Hawaiian Airlines.
Arrived ~4:30 PM, picked up by
Jim with Ruth's Toyota Station
Wagon.

25 APRIL 81 Proceeded on to Wailuku
SATURDAY and out to the north ~3-5

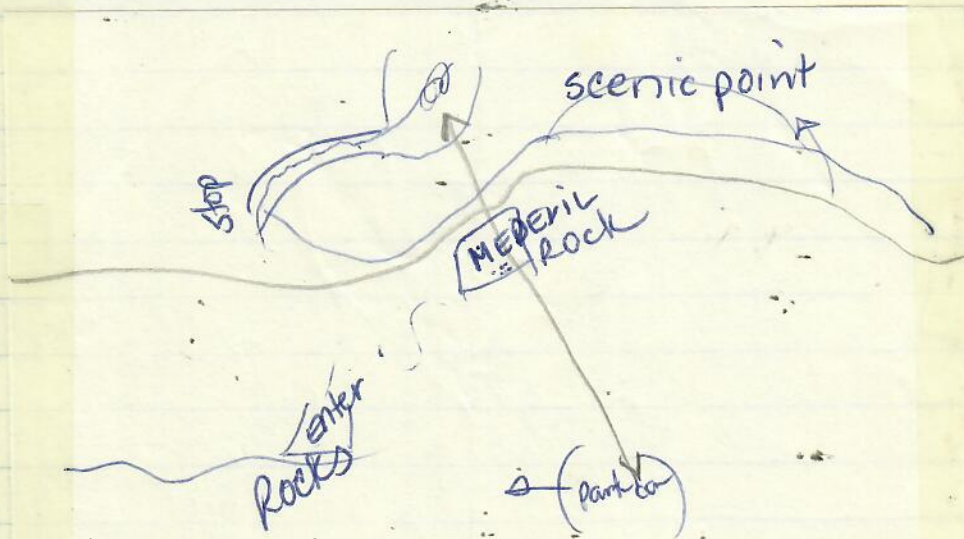
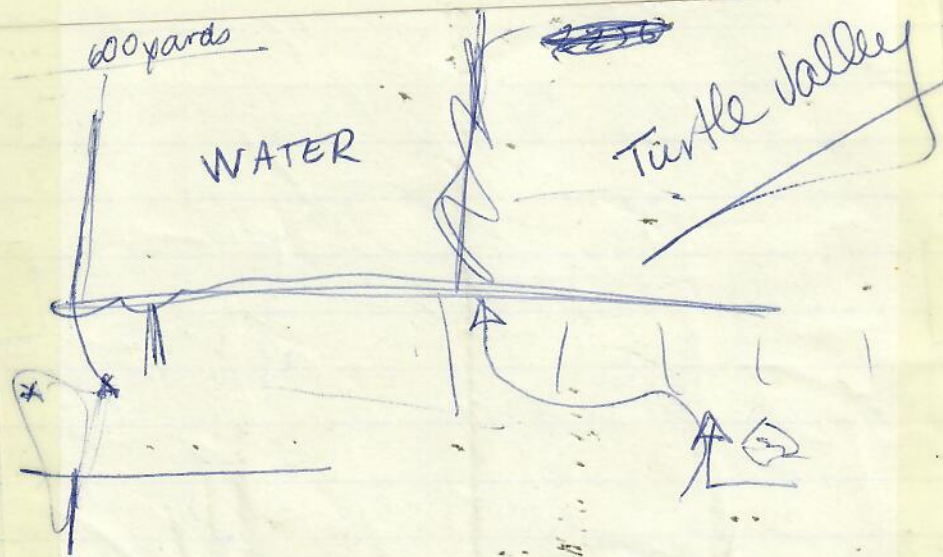
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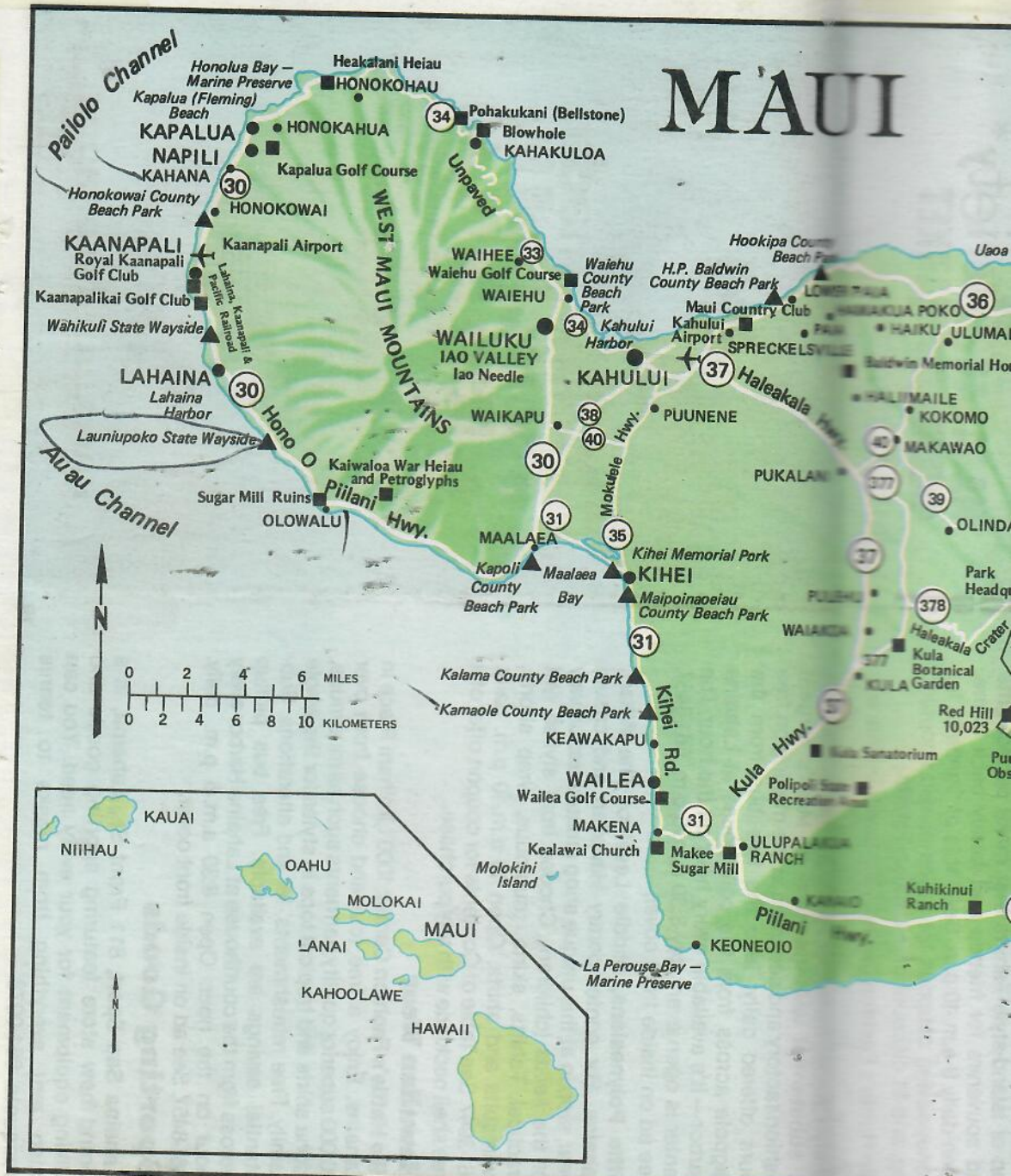
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flight at ~4 PM - Hawaiian Airlines.
Arrived ~4:30 PM, picked up by
Jim with Ruth's Toyota Station
Wagon.

Mickey Pierotti
Lou Zitnik
American DIVE MAUI - (owner - Guy)
628 FRONT ST
LAHAINA 96761

Home Address: P.O. Box 10703
LAHAINA 96761

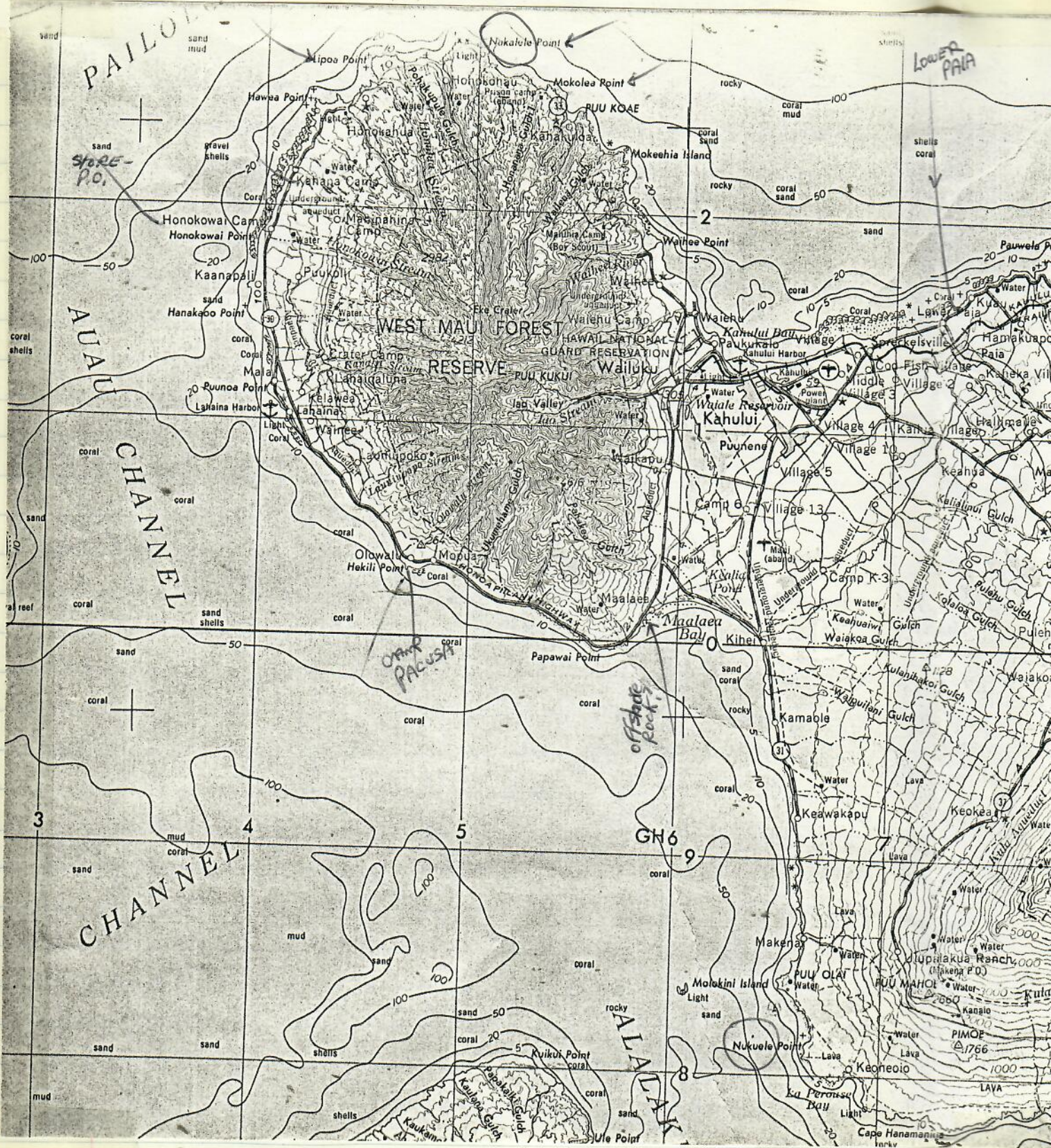




MAUI



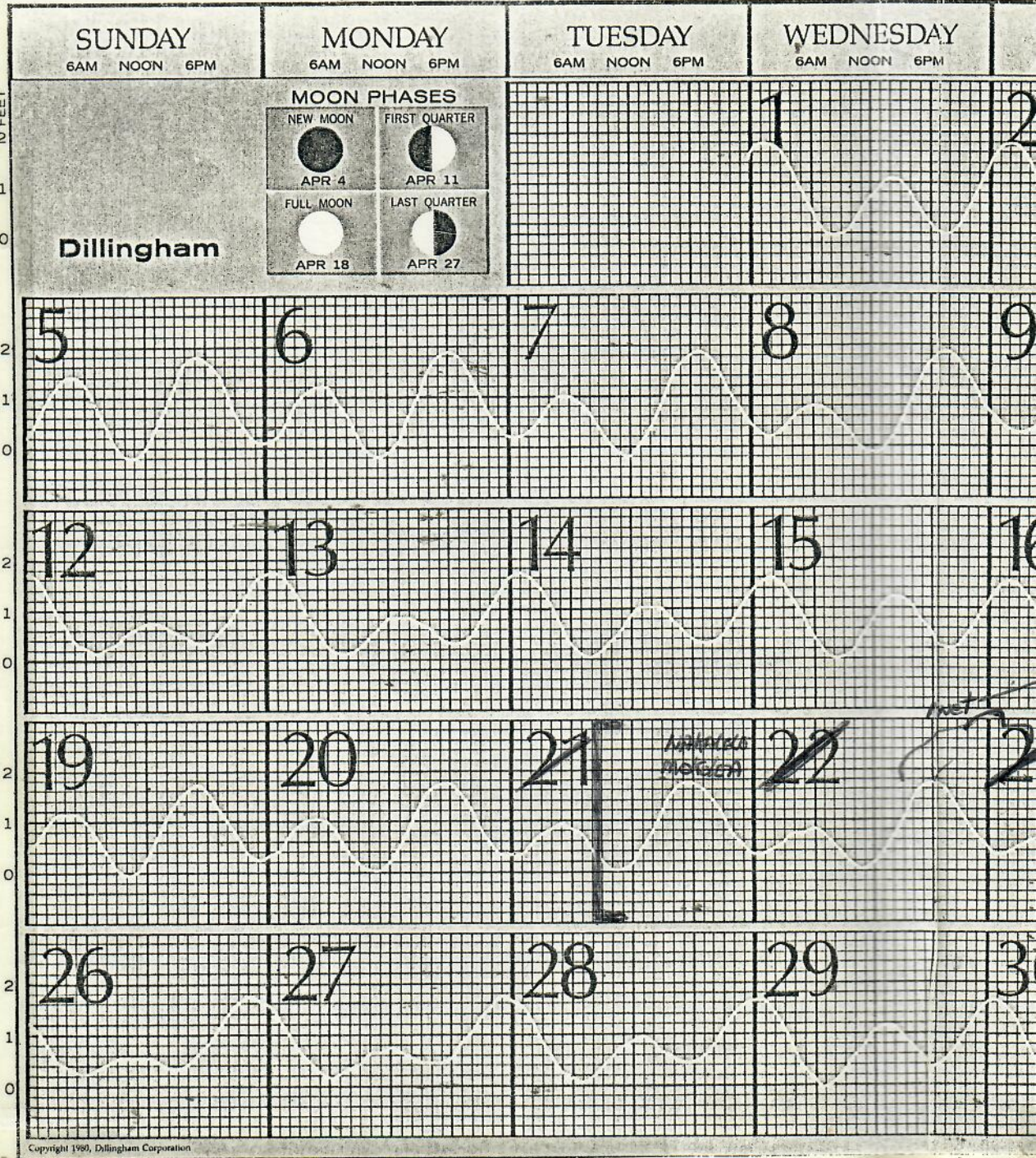
FROM: KAHULUI AIRPORT	VIA	APPROXIMATE DISTANCE
TO: IAO VALLEY	Hwy. 32	7.5 Miles
KIHEI	Hwy. 35	9 Miles
LAHAINA	Hwy. 38 and 30	23 Miles
KAANAPALI	Hwy. 38 and 30	27 Miles
HALEAKALA	Hwy. 37, 377, 378	37 Miles
HANA	Hwy. 36	52 Miles
WAILUKU	Hwy. 34	5 Miles
WAILUA	Hwy. 35 and 31	17 Miles
NAPILI	Hwy. 38 and 30	32 Miles
KAPALUA	Hwy. 38 and 30	33 Miles



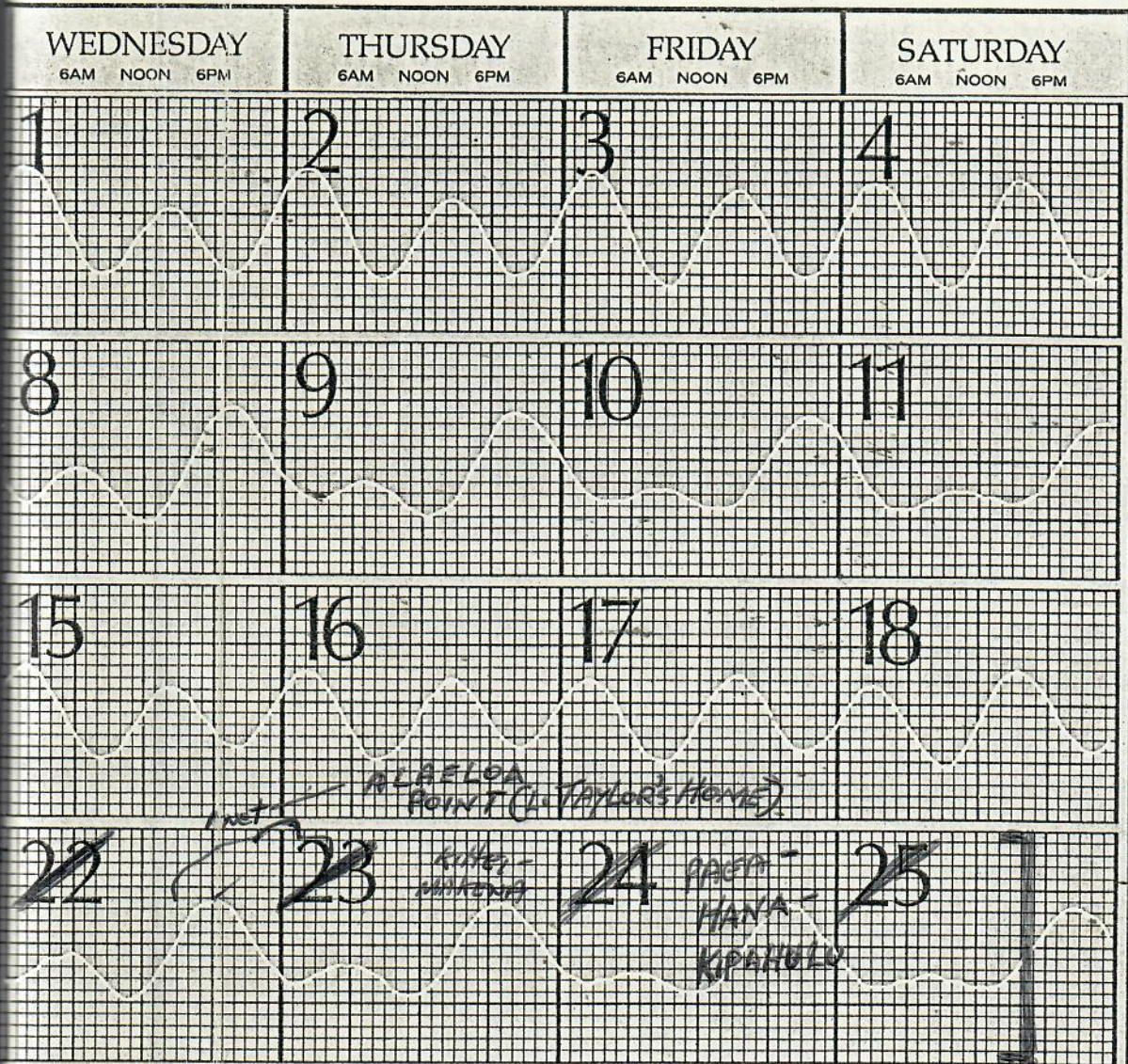


GNATION: 4Q
GNATION: 5Q

APRIL 1981



first used this toney island sometime before 1500 A.D.



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

PORTS	Hrs.	Mins.	PORTS	Hrs.	Mins.
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
WAIANA, OAHU	+0	16			
WAIMANALO, OAHU	-1	15			

3 DECEMBER 1981

Thursday

KAPAAI UNDERWATER ASSOCIATION

P.O. BOX 188
KAPAA 96746

3 D

Depart Mid-Pacific Air at 2:30 pm
\$1,495 each way;

OBJECTIVES:

- 1.) LECTURE and obtain new contacts for sightings - Gather new information;
- 2.) Look for headstart turtles that were released at Kilavea Pt
- 3.) Visit Kahanui foraging area
- 4.) Meet Jack Harter

Arrived ~ 3:15 pm

Rented a Dollar car at \$9.95 -

Checked in to the Hale Lihue

Ate ~~breakfast~~ dinner at McDonald -

Called Lindy Mann - School teacher

Drove to Koloa Civil Center at

~ 6:15 pm; ~ 40 people present;

VP? "Jim", a local guy, goes into 'Milolui'
 during December (with state
 people ^{LAND MANAGER} Sammy Lee and George
 Nitarian in a helicopter) where
 he sees turtles gathered right
 up against the shore. In
 one area they are inside a

3 DEC 81

that big waves break on; sheltered inside. ⁸⁴⁵⁻²⁰⁴⁹

Met Patsy Grant, who is the associating secretary; John McFarland, President, is on the mainland now.

Patsy brought the posters drawn by Cindy's ⁸²²⁻³⁹⁷³ grade school children.

The 6 winners were displayed in the County Building - doesn't know what happened to them.

Meeting started - 7:30pm - elections and other discussions.

Sherwood Maynard arrived - here on Kawai visit his program MOP at Kawai Community College.

Also, a fairly new DOAR biologist to Kawai -

DON HEACOCK

DOAR, DLNR
BOX 1671

TEL. 245-4444

LITHE 96766

Raised on Maui - states that turtles are abundant along the Hana coastline. His

grandfather has taken photo showing turtle pens and turtles along the shoreline looking toward Olowalu from Lahaina. His father now has the picture on the mainland.

THURSDAY
3 DEC 81

My talk, "journey through NHI" lasted about 1 1/2 hours. Generally well received.

"Jim" told of many turtle (large) having been taken in the past from the Na Pali-Nihoa.

A couple that came as visitors - guests of friends - had taken Jack Harter's tour this afternoon. At 3pm they saw 2-3 (I¹W?) turtles "basking" at Kualolo Kai - on sand beach at base of cliff. Circled down low to see them - They joked that he had set out "cement turtles" to make the tour look good.

Another helicopter pilot - previously flew for Kawai - now started his own company (South Sea? ...) went to Seattle Pacific University - knows instructor at Camp Rescue at Olowalu. Asked for my phone number so he could make arrangements for me to go to Maui to give lecture.

Talked with people from ~9:20 - 10:15p

Gave away several ¹⁹⁸¹ calendars -
 ~40 sighting forms with detailed
 map of Hawaii attached.

Question was raised about
 frigate bird predation based on
 Cousteau movie - The Green Turtle.

Returned to Hale Kihue ~ 11 PM.

4 DECEMBER 1981

Up ~ 7:00 AM; Ate breakfast at
 McDonald; Picked up Don ~ 8:30 AM
 and drove to Kakanui - Waves
 breaking in at two directions -
 lots of white foamy water. Elevated
 rock section of reef noted where
 I stood taking pictures of turtles
 in April. We watched for
 ~ 1/2 hour; one juvenile was seen by
 me, using binoculars out past
 where the waves were breaking.

Proceeded to Kilauea Point -
 discussed with Don the possibility
 of making the waters adjacent to
 Kilauea Point a Marine Conservation

FRIDAY
4 DECEMBER 1981

District. Waves at Kilauea were also rough - large swells, rolling in. Saw the following during a 1 hour at various places on point:

- 1 juvenile (15-20") on right (east)
 - 1 juvenile (20-25") left (west)
 - 3 full size adults - 2 by island; one off to the right of the island. All may be feeding - surfacing & diving.
- 6 total seen.

Talked to Barry Brady a short time, then returned to Lihue.

Alice Palmer
may know
about this

Don referred to a 1969 or 1970 Maui News article that shows a photo of a large turtle washed ashore at Piiaia. Ed Bartholomew wife, Gail, has assembled an index file for the Maui News.

There is a place in Hana by the high school called Ula Iko where turtles are regularly seen.

Off the Carter estate, near Papirouze Bay, Don has seen lots of milkfish, fresh water

coming out of a lava tube. Turtles
also seen sleeping in tubes.
Lots of algal growth in the area.

Don states that
Dr. Gary Brusca
Prof. Biology
Humboldt State Univ.
Arcata, CA 95521

Spent 2 years 1975-6 in the Peace
Corps doing R&D in
aquaculture - did growth
rates of green turtles kept in
incubators and floating pens
fed chopped fish.

All of this was in MAURITIUS

In Lihue, I picked up my
luggage at Hale Lihue, ate
Salmon at Hamura's, and
got gas and returned my
rental car. Saw Dallas Grady
at the airport:

GRADY'S PEST CONTROL
Box 384

KILAUEA 96754 - 828-1426

FRIDAY
4 DECEMBER 1981

He will be going to Kure to control rats.

Landis Lingren returned on the Mid-Pacific flight to Honolulu with me at 2 pm. Discussed possibility of my giving same lecture to Seattle Pacific University group at Honovalu, Maui.

4480 Ahukini Road, Suite 1-A
Lihue, Kauai, Hawaii 96766
Telephone: (808) 245-7781

LANDIS LINGREN
Chief Pilot

742-9693



SOUTH SEA HELICOPTERS INC.

Arrived in Honolulu ~ 2:45 pm -
Fee for parking my car was \$5.25

at Camp PECUSA → 667-9859
 (HEKILI Pt.) SEATTLE PACIFIC UNIVERSITY GROUP
 INSTRUCTORS: 32 students
 RON Phillips (send turtle literature)
 KEN MOORE
 Mid-Pacific - DEC 15 2:55 pm F1 28
 DEC 16 2:10 pm F1 29
 Buggy's RENT-A-CAR
 Dollars - \$9.95 (

MAUI LECTURE

15 DECEMBER Departed Mid-Pacific Air
 at 3 pm.
 Water off reef runway fairly clear
 but no turtles seen.

OBJECTIVES OF MAUI TRIP:

1. Lecture on NHI to Seattle Pac. Univ. group at Obowali.
2. Investigate Peacock Restaurant at Koa Rapali.
3. Contact Dennis McGill about head-start releases.

15 DEC 81

77

4. Survey Paia shoreline.
5. Contact Ed Bartholomew about 1969-1970 turtle stranding in Maui News.

NOTE: Write to Molokai Family to inquire about ¹⁹⁸¹ hawksbill nesting at Halawa

Flew along north shore of Molokai - noted areas east of Iki Point to Kalapapa where Steve Kaises had only recently seen "many" turtles in close land at Kahului about 3:35pm -

Got rental car and drove to Maui Mall Shopping Center -

Proceeded to Mooloa Harbor - noted USCG, freight and wondered if they could enforce Federal sea turtle regs, if they had top
Noted offshore rock off point where dirt road goes down -

78 15 DEC 81

this is somewhat before tunnel,
and before "Scenic View" turn off
(which is after a point). Calm
protected water all in this region.

Arrived at Camp Pacusa (run by
Episcopal Church) -

Students have been snorkeling and
scuba off reef -
one fellow saw 6 turtles total -
4 in one group - one turtle full
size - 3.

Ate dinner at 6:30pm - ^{beet +} spinach & rice
Gave talk on NHI at
~ 8pm - 10 minute & continued
to - 9:50pm

Afterwards I spoke for a long time
with

Jim Pitts
3210 4th Ave W
Seattle, WA 98119

He was previously in the Navy -
here with the class with his
wife. Talked for ~ 1 hour.

Slept in "cabin" - 6 beds
total - lots of mosquitos in
meeting hall.

16 DEC
WEDNESDAY

I was told that anyone can camp there, with tents - toilet/shower facilities, for \$2 per night.

16 DEC 81 At a serial for breakfast at
 WEDNESDAY 7:30 am - Spoke with
 Ron Phillips who was on Alpha
 Helix expedition in Torres Strait,
 Caribbean - knows Karen Björndal,
 Bill Rainey - Ken Bridges -
 Bardach was on his Phd Committee -
 Works with Dennis Russell.

They have done night dives at
 12 midnight - Have been
 coming every year for 10 years.

At ~ 8:30 am I drove in to
 Tahara - Examined merchandise
 in various stores - Noted the
 following:

1. Tortoise hair "chip" (2-piece)
 carved internally (1-only) - \$100.
2. South Seas Trading Post
 Woven fans inset with tortoise -
 \$25 & \$30

16 DECEMBER 81
WEDNESDAY

TRADING POST (continued)

~~###~~ Ring (in basket)
from Bali - \$1.50 each

~~###~~ Perant & multi-piece
bracelet of tortoise
with cat's eyes
from FIJI - in window
price
not
given

3. Native Chimes and Shell Shop
Tiger(?) Claws (set in metal gold?) (in window)
Also - saw grasshopper hanging
in back
This shop also called
DENNY LOPE'S REALTY

When I visited Maalaea on
Tuesday afternoon, I wondered if
the USCG base might not take
some responsibility for enforcing
turtle regs.

Also, noted the This Week style MAUI
free handout has two odds
by the Hawaiian Humane Society -
one to protect Cebkos, the
other buffos.
How about turtles?

How has the use of water for irrigation of sugar, etal, and human population, increase affected groundwater discharge, hence 'algal/seaguss growth'?

At ~ 11am, I drove back to Camp Pagusa to pick up my luggage - then continued on to Lower Palu. Visited various stores as follows:

1. PAIA TRADING COMPANY

1 - 18-20" varnished shell
priced at \$45.00

Texas woman said she might have a small ^{from husband?} one at home - She has sold an adult-size shell that tourists packed in a box and sent home.

At her house, she has a very large shell that she brought with her from Texas.

2. BERSAMIN'S MARKET -

Sells iced fish -

Small polished shell on wall - Japanese woman said they don't sell turtle.

82 16 DEC 81

WEDNESDAY

PAIA (continued)

3. ~~PAIA~~ Summertime Gifts & Cloth
2 small boxes ^{TURTLE} with
tight-fitting lids - quality
made - one oval, one rectangle
\$9 each - Sales woman
said they only got two - had
them 6-8 months - haven't sold.

4. COUNTRY GOLD STORE -
near postoffice - on crossroad
off of main highway.
Selling two 18" carapaces (\$40)
made from fiberglass wold - look
very real - with "radiators"
from each scute. on
consignment and made by -

PAUL BOROWSKI

% P.O. 518

PAIA

His roommate, as friend, was
in the store and said he
designed a car after a sea
turtle shell - tried to get
"turtle" was "go" to build one, - but
they rejected the idea.

copy of sl
subsequently
taken in
Palau

16 DEC

Drove back to Dollar's agency, checked in car, and arrived at airport ^{TOTAL \$15.00} ~ 12:30pm.

Telephoned "The Peacocks" - told that the restaurant had been there ~ 2 1/2 years.

Tried calling Dennis McGill, but was not able to contact him.

DOCARG - 877-4315

Doane "yard" - 877

Nat. Guard - 244-0477

Departed Maui on Mid-Pacific Air at 1:35 pm - flew directly over Lanai.

Car parking - \$5.25

LAHAINA DIVERS, inc.

Equipment Sales
Scuba Charters
Underwater Photography
Certification Classes

Blain Roberts
(808) 661-4505

LAHAINA'S QUALITY DIVE STORE
710 Front Street • Lahaina, Maui, Hawaii 96761

copy of slide
subsequently sent to me.
Taken in
Palau

In the above shop I saw a color photo enlargement for sale (~\$42) showing underwater view of a hawksbill head on - long claw on each flipper was apparent

KAUAI NA PACI STUDY

AUGUST 1982

MONDAY Depart for Lihue on Mid-Pac. Fic
 AIR flight 13 at 10:35 am.
 30 minutes flight. 4 pieces of
 baggage total.

Some prime objectives of trip:

1. Inspect/camp at Nuabolo kai where turtles are known to bask on shore, occur on reef flat, and previously exist in large numbers during this month, according to interview with Reg Gooding. Need to determine "status" at this time. Look for fecal pellets
2. Look for evidence of nesting along the ^{na'ali} coast
3. Take further observations at Kaakaniia offshore foraging area.
4. Meet, and obtain added info, from various informants that have come to my attention since last Kauai visit.

10. Don 8:00-8:30
 11. Don 9:00-9:30

Don
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Tel
8245-3151
P.O. Box 808
LIHUE - 96766

AI Rental car obtained.
Don Heacock met me at the airport -
lunch with him at MacDonalds
until ~ 1:15pm. Checked in
at Hale Cihue Motel - ~ \$14.60
night.

Telephoned 826-9371 Na Pali
Zodiac - spoke with Ted.
Also telephoned Kilauea Pt. - Noreen.

Visited with George NIITANI - State
Parks - to obtain permit for
Na Pali.

He mentioned that lots of
turtles taken from Na Pali
starting in 1960's. Scuba &
harpoon - but not many nets.
Turtles regularly bask at
Nualolo Kai in the winter - Dec, Jan,
Feb. "Turtle nests seen
during this same time ~ 40'
from water at Milohi."

He feels there are more
turtles at Milohi than at
Nualolo. Na Pali Zodiac
has been operating for ~ 6 years.
Masaki Kouchi stopped
fishing about 1960 - From
the turn of the century onward
he was the area authority. Now NIITANI is.

BASKING
MISTAKEN
FOR
NESTING ?

9 AUGUST 1982

MONDAY

Niitani also mentioned that camping is now closed at Nūhōlo kai because the archaeological survey is not yet completed. It is being conducted by the Parks Division. Final management plan will be done in 3-4 months. After that camping will be allowed.

~ 5 pm. drove to Kaakaniu - elevated ref. spot visible - several small turtles seen in close in waves, obviously feeding. No other people around. Returned at about 6:30 pm. to Aieue.

Mr. Niitani also recalls seeing seals every so often during his experiences at Na Pali over the past 20 years.

Na Pali Zodiac people saw a seal at Horapo during the past few days.

9 AUGUST 82

NOTE: Napali is probably the "closest" main-island foraging site to French Frigate, considered "stop-offs" to feed before proceeding on to ^{other} areas.

Transcribed from file notes -

"12 December 1980, Friday, interview discussions with Reg Gooding at NMFS - First visited Na Pali Coast ~ 1960 with family. A Hualokai, many turtles were regularly seen in nearshore waters - July-Aug. They used to trailer boat to Haena and motor in.

Later he cooperated with Sonot - B.P. Museum on collecting fish offshore to correlate with archaeological excavations. He estimates that 40-60 turtles seen at any one time - all sizes, many large. No nesting ever seen, but last

Hawaiian to live (or be born?) in Na Pali told of turtles previously nesting in region. Joe ? ?

served as guide for Bishop Museum. Early 1960's - huge increase in "plastic" boats

made remote areas accessible.
 Rumored that turtles were
 taken in substantial numbers.

Project idea: Take Reg with me
 to Na Pali during July-Aug 1981
 to serve as a guide, ~~and~~ to
 provide documented historical, comparative
 information on relative abundance.

10 AUGUST 82

TUESDAY

Breakfast at MacDonalds;
 shopped at Woolworths.
 Telephoned Marnette Bock 822-5879

322 Kanae Place
 Kapaa 96746

Send
 literature
 & sighting
 reports

also to
 Tom
 Telfer
 need maps
 of valleys
 from him.

She saw ~13 adults feeding at
 4pm 6/27/82 just off point
 between Mibliu and Nualototai
 (Nualob side). 3-10' depth.
 Drifted with them as they fed -
 within touching distance. No long
 tails noted. See sighting
 report form in files.

10 A
 TUESDAY

about 1000
 or 1000-1500
 Is there a separate
 INSTRUCTION SHEET
 HANDOUT?

10 AUGUST 1982

TUESDAY

PERMIT HAS NO RULES

OR GUIDELINES -

Is there a separate

INSTRUCTION SHEET?

HANDOUT?

Visited Parks office and picked up permit. In the afternoon I talked with Tom Telfer and Don Heacock (who will now be unable to go to Na Pali with me).

Visited with Jack Hartner and Bert. He reports that helicopters landing by the other 6 companies are common. Take people in for picnics - Miloliu and elsewhere. He has seen the "golden eagle" 12 times since

Dec 1981.

Reports that locals camp at Nuale on weekends. Lots of rubbish, beer cans, toilet etc. Basking by turtles stops about the time that beaches are accessible by boat. Zodiacs can only operate during the summer months. Halea is State Conservation Land - compare with problems at Hanalei Bay.

During the winter months, Kalalau

In past few days, Jack Harter saw seal
on the beach at Honopu - people close looking
at it. Seal was "half again as big as a
person".

10 AUGUST 82

TUESDAY

sand beaches washes out almost,
if not, completely. Mualolo kai,
rewards almost the same as
during the summer. Milohi
waves wash up almost to
house; considerable portion of beach
washes out.

At present, a sand bar extends
from Kalalan around to Honopu
and you can walk from one to
the other.

Shopped for food at BIG SAVE.
Evening dinner again at La Luna
Mexican food.

Send
poster
& turtle
packet

Telephoned Ron Evans - 337-9264,
reportedly Navy Captain - Commander,
at Barking Sands. ^{70+ years} a "Eddy Robinson"

Rotary club
* member

Need Marlin's address, retired from Waimea First Hawaiian Bank, turned turtles many
years ago at Milohi at night - nesting or basking? Sand
from flippers driven down throat - almost choked him.

poster
& packet

Telephoned Gary (& Marlin) Kirk
742-1457 | Box 480

Hanapepe 96716
but live and beachfront home
with reef at Poipu.

Gary related to me the same
story he told Tom Telfer.

10 Au
TUESDAY

10 AUGUST 82

TUESDAY

3-4 years ^{~12 roos} ago in July or August they were walking on the boulders SW of (from) Milolii - about 2 miles when you come to "Treasure Beach" a small strip of yellowish-white sand, 200' long and about 30' wide. Sand butts right up to cliff. When they reached this site, they saw a large turtle (36") half way onto sand. They saw the turtle "kicking sand" so immediately backtracked out of sight so as not to disturb her. Possibilities for behavior could be ① basking ② nesting ③ quick return to water, throwing sand as she/she moved. This site on coast is the only one with a small reef - which extends about 200' offshore. From here, still heading toward Polihale, you must swim a distance before reaching boulder where you can again walk. Gary and Marilyn have a 12' air boat that they launch at Polihale. She works for the Navy at Parking Sands. They have taken the boat to Palau, Fiji and elsewhere. Gary related other

TUESDAY
10 AUGUST 82

sites along Na Pali where he (they) have seen turtles. - one site is Awaawapue, $\frac{3}{4}$ mile NE past Nualolo Aina - look down upon turtles - can be walked from Nualolo kai. Another site where he has seen 10-15 medium to big turtles feeding on grass is on Nualolo side of rocky bay in point between Miblii and Nualolo kai. Can't be reached by walking from Nualolo kai. From this site, you can see Miblii sand beach, but not Nualolo kai. BARNs or turtles seen.

At their home in Poipu, Maylin regularly sees 2-3 large turtles at ~ 10 am offshore. Never seen when skin diving - apparently frightened off before within the range of human visibility. They also disappear from sight when Hobie cats pass over. This is not the case for turtles at Na Pali.

11 AUGUST 82 UP ~ 7pm - checked out
 WEDNESDAY of motel and ate breakfast
 at Shopping Center (near Woolworths/Gen).
 Departed for Hanalei at ~ 8:30am.
 Arrived Ching store ~ 9:45am - new
 Big Save. I checked in at Na Pali
 Zodiac - Charge consented by "Ted"
 and "Karla" as \$90 - including gear &
 shuttle to Miloliu. Departed ^{from} one of
 two zodiacs at ~ 11:10am. Gusty
 winds coming from behind. Stayed
 close to shore - stopped at several
 sites along the way for narrative.
 Juvenile turtle seen at Haena.
 Motor into 2 coves - second
 one was open-roofed. Crew member
 dove off rock wall. Appeared to
 be Amansia growing on rock edges.
 Reportedly Hanalei & Honokaa
 loose there sand during the
 winter. Zodiac operating time
 is approx. May - October.
 Took photos at Awawapue
 boulder area.
 Arrived Nualolo kai about 1pm.
 Other Zodiac already there and
 people under wood/iron shelter
 at head of small boat channel.
 ~35' sail boat "Cagly Cloud"
 (Nawiliwili) anchored behind

Wednesday
11 AUGUST 82

reef - ~ 8 people camped under ironwood trees at NE end - a charter.

Monk seal seen yesterday in water by landing.

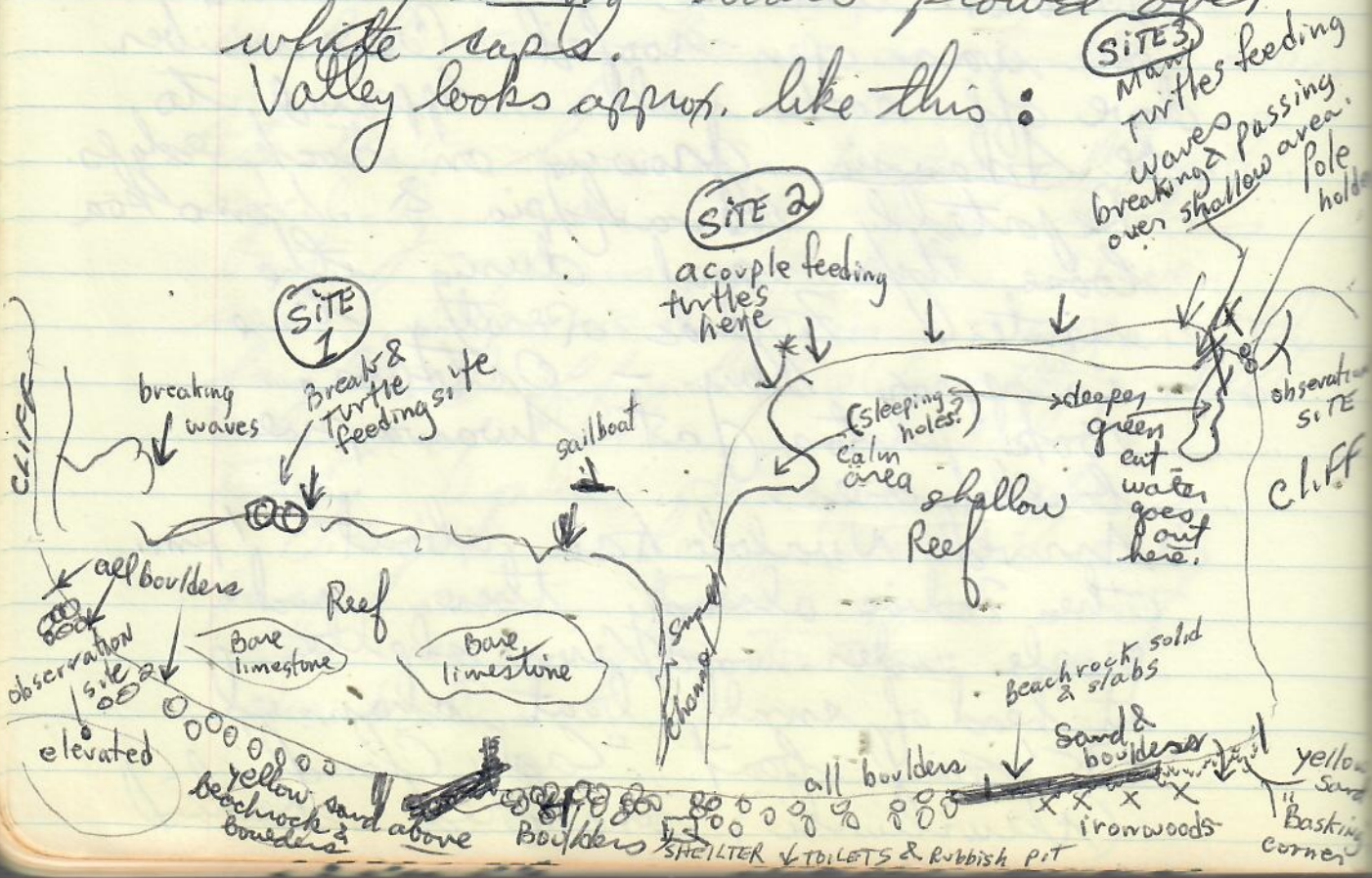
Sign on beach say "Na Pali State Park - Nualolo Area".

Large stone-line trash pit behind shelter.

I transported all my gear to SW end of ironwood grove, and set up tent.

Zodiacs left ~ 3-3:30pm - wind really strong - boats plowed over white caps.

Valley looks approx. like this:



photos

wed.

11 August 82

At ~ 4pm I walked to west looking for feeding turtles. Sun at a good angle for viewing. Took area photos. Climbed part way up "dome" to take observations. At ~ 4:45pm I first started seeing turtles at SITE 1. & 2. SITE 1 feeding only a short distance off reef edge. Top outcrops of pinkish lime reef noticeable. Turtle must be in ~5' water only. Approx. estimate ~ 2 adults; ~ 4 juvenile-subadults. Watched these turtles until ~ 5:45pm.

Walked over exposed limestone - believed to have found a piece of *Anarsia*. Walked to NE end of valley and inspected beach area where turtles were basking as shown in photo from 2/2/82. Walked out to point and found SITE 3. At least 5 adults and ~ 5-8 juv-subadults foraging here in very shallow reef area with white water from breaking waves.

photos

Adults were regularly stranded when water receded slightly. Average depth can't be more than 1/2-3'. I watched this activity until 7:30pm (after sunset) when I returned to tent because of impending darkness. Walked back out to site 3 at ~ 10:30pm with dive spotlight. No turtles

note - Helicopters heard overhead all day.

WEDNESDAY
11 AUGUST 82

seen feeding in the area. Noted deeper green area cut just inside reef structure of Site 3. This would host turtles for sleeping - however, water seems to suck out from on reef flat at this site. Current may therefore inhibit sleeping.

Question - does added current, or "backflushing" at this site make it attractive to turtles for feeding?

(light, but sun not yet -
SUNRISE IS 6:15am)

12 AUGUST 82

Thursday

Up about 6am - walked to SITE 3 - 1-2 large turtle

seen in same area, feeding in shallow white water. Had to depart for toilet - returned about 45 minutes later, at which time I only

saw 2-3 juveniles - and then only as they were feeding farther out.

Saw one juvenile get turned almost all the way over by a breaking wave. Noted *Pterocladia* growing

along rock face of cut immediately to the right of key feeding site. Same alga also apparently growing where big turtles were seen being stranded.

12 AUG
THURSDAY

NEED
MONITORING MA
ARTICLE
FOR
PACI
FOLDER

12 AUGUST 82
~~THURSDAY~~ Walked to the back of the valley (only a short distance) and noted the following: Bearing Coconut trees; tara; rock-lined (dug out) pit with probably polluted water; archaeological remains - walls, platforms, etc.; probable "reconstructed" wall along base of cliff; a type of Chenopodium. Grant "X" seen in cliff face above archaeological site caused by lava "dikes". Banyan tree, outhouses, (by landing shelter); MOUSE;

NEED
 HONOLULU MAG
 ARTICLE
 FOR
 NA PALI
 FOLDER

IMPORTANT QUESTION: Do these turtles aggregate to feed at a specific site in order to continually graze back the Pterocladia to obtain "new growth"? Tender & more nutritious? Group effort needed to achieve this? Concept analogous to Karen Bjorndal's findings?

Campers left in sail boat this morning.

Between ~ 8:30 - 9:30am I walked along of small, and more exposed, reef to the SW of small boat channel. Noted numerous places where Pterocladia is growing on edges of reef exposed to pounding waves. Inspected

12 AUGUST 82

Thursday

yellowish sand in this same shoreline area that is above some beachrock and, in places, boulders. It would be possible for a turtle, (hawkbill) to get into this area - but no evidence was seen of old digs.

Watched, and took photos, from Site 3 - a few juveniles seen - but further offshore. Two Zodiacs arrived ~ 12:45 - 1pm (in photos of Site 3. Captain "John" and Sam Gress aboard. At ~ 1:30pm they motored me to offshore of Awaawapue - waterfall stream here, plus some shallow offshore rocks. John pointed out a rocky point to the SW of waterfall where he has sat and seen ~3 turtles at a time. Gary Kirk may have seen this site late in the afternoon, or early in the morning, when more were aggregated for feeding. At Nualolo Aina a ^{Papillon} ~~Hilcopter~~ ^{Yellow & white} was landed on the cliff and 4-5 people were outside looking around. Question:

12 AUGUST
Thursday

in Palm Zodi
Sand
side
+
sweep
1
1
1
1

12 AUGUST 82

Thursday can state control airspace over a park or Natural Area? Restrict usage for some offenders?

Na Pali Zodiac
JOHN -
Send
Roll of
Slide
film +
synop.
photo
of
seal
from
Tourist

John said that during April-May he has seen turtles basking ashore - east end of cliff face, and right by channel of landing site. Sometimes they try to make trips along the coast during the winter. He saw a tumor-covered turtle basking. John said he has seen turtles or their backs taken at Kualoa - butchered out just before they get ready to leave.

Note - that I found a dried-up piece of plastron bone, plate and cartilage under Ironwood trees.

Pam stated turtles are taken by some people along the north shore and elsewhere on Oahu. "Economically depressed families" - she also stated they are "lazy" - don't want to do other things.

Someone John knows caught a turtle recently by it becoming snagged in flipper by fish line. Turtle eaten. Reportedly no tags present.

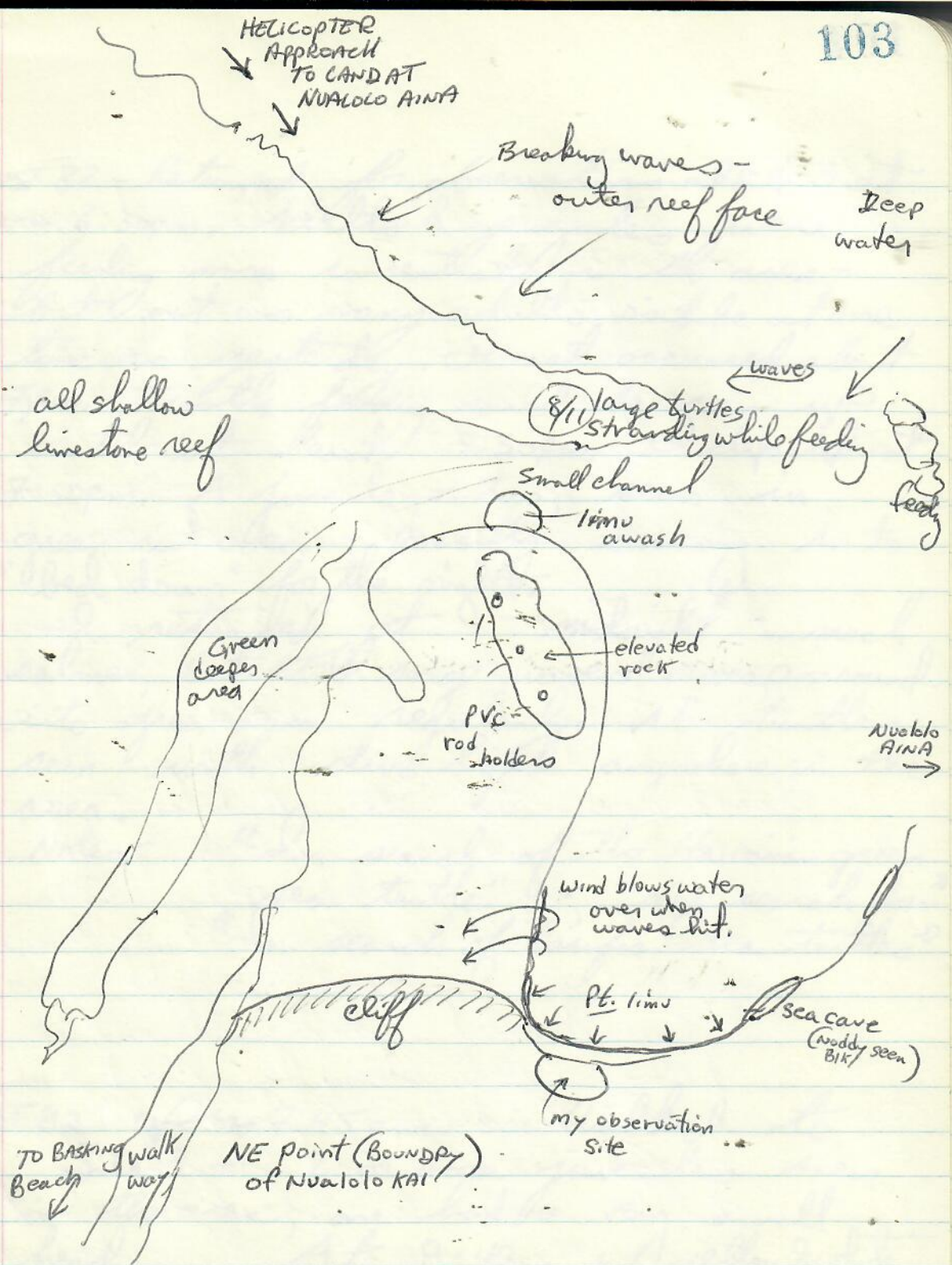
12 AUGUST 82 Need flies - SEATURTLE ARE FULLY
 Thursday

PROTECTED IN THE HAWAIIAN ISLANDS
 + short description
 photos
 (Reminds)
 This NOTICE prepared & paid for by
 the HHS, Friends of the Waitiki Aquarium & SLP.
 (as a public service)

Noted that roots of ironwood trees
 have to some extent "enmeshed" adjacent
 sand beach - starting to become similar
 to Kawa tree roots seen on
 Kahoolawe. Haole koa is thick
 throughout valley. How did so much
 of it get in here? Seeded?

Note - "Many" "remote" coastlines
 are no longer remote!

Site 3 watched from ~4pm - 5:45pm
 juveniles through adults seen,
 seemed to increase in numbers as
 time passed. However, they were
 not as concentrated as last night.
 Some were diving over the detached
 site off to the right, other a
 bit further along the reef to the
 left. What appeared to be 2 (or 3)
 small juveniles were seen well
 inside the wave break in water
 on the reef flat.



SITE 3
 NUALOLO KAI

12 AUGUST 82 Returned for observations at site 3 at
 Thursday ~ 6:30pm. Adults & juveniles were
 feeding more concentrated in the area -
 but not as many adults visible at one
 time as yesterday. Sunset occurred about
 7pm. Turtle feeding could be seen up
 until at least 7:30pm. I departed at
 7:50pm. A juvenile, or two, seen in
 green cut area - possibly swimming in to
 "bed down" for the night.

I returned at ~ midnight - much
 calmer, but still surge waves sweep around
 into green area regularly. No turtles
 seen with dive light anywhere in the
 area.

Notes - "In search of the Hawaiian green
 sea turtle". "My search for..."
 "In search of Pacific sea turtles"

13 AUGUST 82 up ~ 7:45 am. Walked to
 FRIDAY Site 3 - 2 or more juveniles seen
 in the area; one had a very small
 head. At 8:40am a yellow & white
 helicopter passed over Site 3, seemingly
 to land at Nualofa. "Take
 off" heard ~ 15 minutes later.
 At 9:45 - Mustard & white helicopter NS20X.
 Between 9:15am and 10am I sat

13 AUGUST 82

Friday at the table shelter and made observations.

At 10:10am and silver & brown helicopter passed low over the valley and landed Nupolo Aina. The approach to land goes right over site 3.

At 10:30am a large Navy chopper flew low along the coast line - 300' returned boat 10:45. ^{motor} Boat going NE at 10:40

At 11:45am a ~20' boat (from Hanalei) anchored in the channel - 5 people just stepping off. Zodiacs came at 1pm - 10 tourists each. I was transported to Miblii - arriving about 1:20 pm. Three park workers there doing cleanup. One said that "turtles were all eaten before protection" - mostly small ones now. They departed shortly thereafter by Keri Helicopter. Met a ^{psychic} ^{works for Robinson Sugog} brother-in-law. Eddy Vindihira and "know how to eat turtles".

They used to "bask & nest here". Turn them over on the beach.

Turtles fed on favorite ~~limu~~ ^{limu} at mouth of Miblii stream.

Between 2:20-3:00 I walked to Miblii stream, a short distance across boulders beyond the SW end

Set up camp under one of 3 shelters.

13 AUG
FRIDAY

Basking at FFS = 89.
but compute for ♂ =
♀ =

107

13 AUGUST 82
FRIDAY

of the sand beach. Photos taken. Water tank seen on hillside. 2-3 juveniles seen feeding on adjacent, downwind reef. Freshwater (nutrients) sweep toward Polihale by prevailing trades. This is reportedly the only stream of any size between here and Polihale.

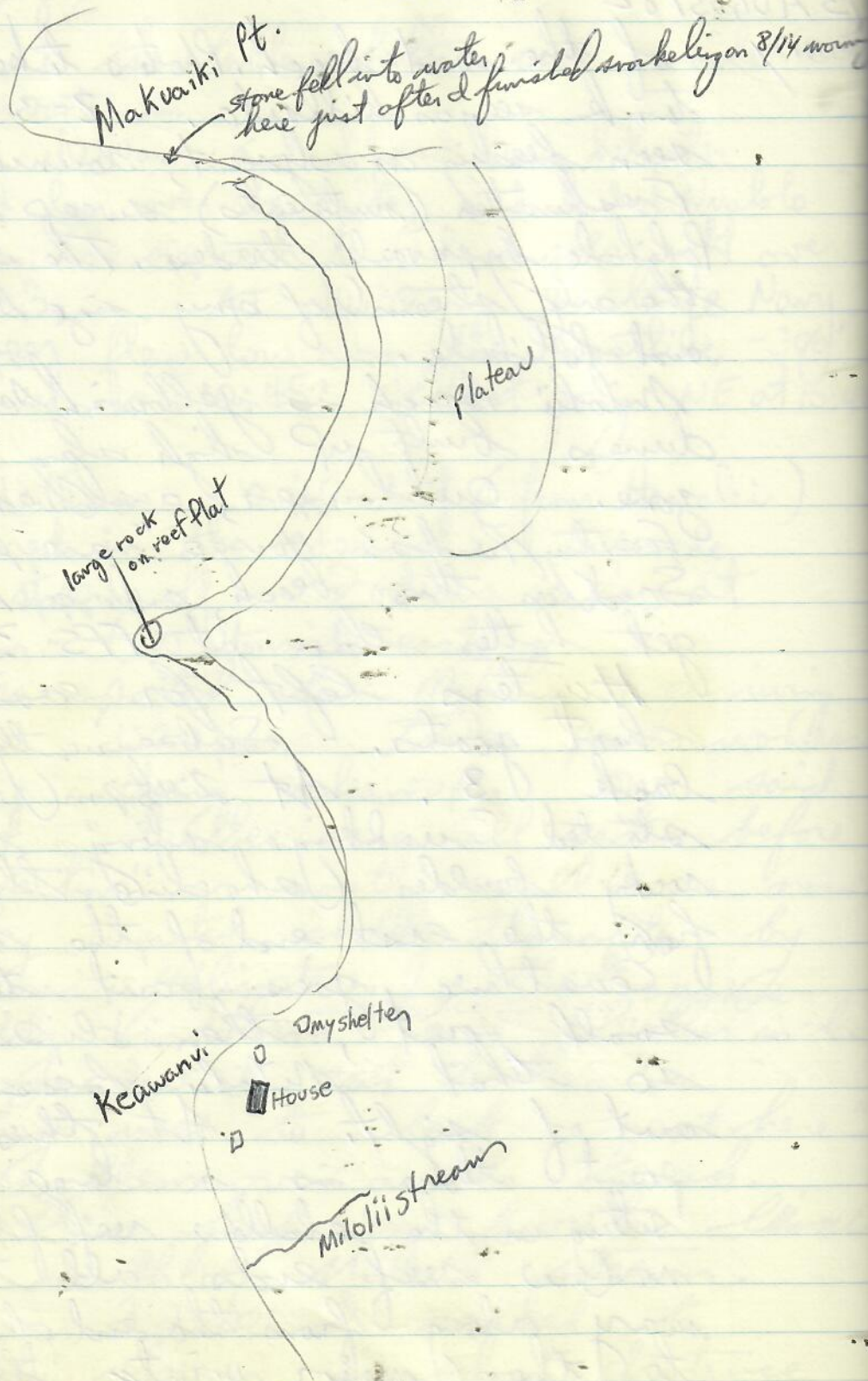
Miloliu Beach is yellowish sand with dunes built up high along vegetation zone. Outhouses, a shower, and a "Forestry Parks" house are present. Sand on this beach, and a Nualolo kai, get hotter than at FFS?

Hunters left for east end to shoot goats. Subsequently brought back 3. At 2:45 pm I started walking along the rocky boulder (shoeling) that continues from the east end of the sand beach. Coastline goes out to a small point, then dips back so that "Miloliu Beach" is out of sight. At this small point there is a large boulder sitting on the shallow reef flat. A narrow reef ends all the way along from the end of the sand to the major points that prevents passage out of the valley.

Hawaiian dictionary definition -

nuaolo =

miolii =



SEE MAP on Page 29

13 August 1982

FRIDAY

Pterocladia seems to be growing all along the outface of this reef (just past "Boulder Point") I sat at table observations (~3:15pm). - Several juveniles seen feeding. At least one juvenile stranded itself for a short time inside of wave break. At the eastern end, the offshore reef stops a short distance before the cliff of the point. Two small streams occur between "Boulder Point" and this east end.

Between 4:15 - 5pm I watched ~1-2 adults, ~4-6 juveniles feeding on the outer edge of the reef wave closest to the cliff. Much calmer water exists within 200m of cliff. The adults keep stranding itself on Pterocladia covered reef heads.

This is apparently the site where "Pierre" of Papillon Helicopters reported "at least 25 baby turtles".

Returned to camp - walk takes ~35 minutes.

At 6:30pm I watched nearshore reef just south of Milohi stream - saw 4-6 juveniles, 2+ subadults. Several regularly stranding themselves

13 AUGUST 1982

FRIDAY

on the linn-covered reef. At ~ 7 pm I got my wetsuit and shoes from camp and walked out on the reef. Smooth reef heads - easy walking. At that point, the turtles were no longer seen. Apparently frightened off by me. Returned to camp at 7:45 pm - showered, toilet - then drank coffee until 10:30 pm with Vindinba. He brought chickens into Miblii - takes them for release all over. Eat bugs, nice sound. Came to valley in a 12' 25 hp Johnson Avon. When he was 12, he first came here.

Big turtles used to be caught on the beach - at night. He doesn't know if "nesting" or "sleeping" was occurring. He doesn't recall seeing or eating eggs - but they "used everything." The old folks cleaned (them, also?) Taken for shell which was polished and displayed. In more recent years he has used turtle nets at Miblii. Also mentioned an effective "take" method being a shotgun.

13 AUG 82 SLEPT on picnic table on
FRIDAY air mattress. Mosquitos present.
Also mice.

14 AUGUST 82 UP ~ 7am. - Viridipha and
SATURDAY son-in-law already left for return
to Polihale to see what happened to their
friends.

I hiked along boulders to
point - tide was low (but coming up),
and the bordering narrow reef
flat was somewhat exposed. It
was along here where Ron Walker
found a green turtle with tumors
stranded in one of the reef's channels
(photo & report in my files).

In the calmer water near the cliff
face point (Makuaiki Pt p-29), I
swam out and surveyed the region.
Channels leading up to Heroldia
covered reefs drop off very deep
in just a short distance. During
a ~ 45 minute swim I saw 3 juveniles
none over ~ 15" SL - apparently I scared
all of them up from resting sites.
one I was able to get fairly close to -
not over 14" SL, TMS above
both eyes and proximally on
trailing edge of front flippers.
Surprising, for such a small (young) turtle.

no turtles seen feeding

14 AUGUST 82

SATURDAY

Returned to Miblii camp about 10:30am

Packed up gear and wrote notes.
Talked to Virdinba & friends who had returned using 2 more 12' avers. One said he had seen a large adult turtle this morning at feeding site 10 minutes motoring after leaving Polihale.

Everyone knows of sand strip (Treasure Beach), which is reportedly "KAMOLE".

Virdinba indicated one way to "take" large turtles is with a shotgun aimed at the head.

Zodiac arrived to pick me up at ~ 12:30

Subsequently spent 2 hours back a Nihalolo Kai. Collected sand sample from basking area. Talked to Cathy and she told me about very nice tracks of nesting ^{that} her and boyfriend see at camping site at Cape San Lucas.

I sent her a xerox map.

Ocean was very rough during return trip to Haena, but Zodiac rode it well - took ~ 1 1/2 hours. Twice we motored into sea caves - one was different than the incoming trip.

Talked with Ted & wife (wife is Chance's sister) at office in Hanalei. Drove back to Lihue, checked in rental car

14 AUGUST

SATURDAY

14 AUGUST 82

SATURDAY and was dropped off at airport.
Departed on FL. 34 at 6:45 pm. Mid-Pacific
Air. Lind Christian met me.

— Snorkled for about 30 minutes in the
channel leading into Nuulob kai.
Very deep along side reef - reef heads.
Just 40, perhaps 50 feet. Strong currents,
at least on the surface.

Hiker Killed

LIHUE, Kauai — Cary Keith, 40, of Waimea, fell 2,400 feet to his death yesterday when he lost his footing on a ledge of the Awaawapuhi Trail at Kokee, police said.

Firemen and a helicopter crew from the Navy Missile Range are expected to recover the body today.

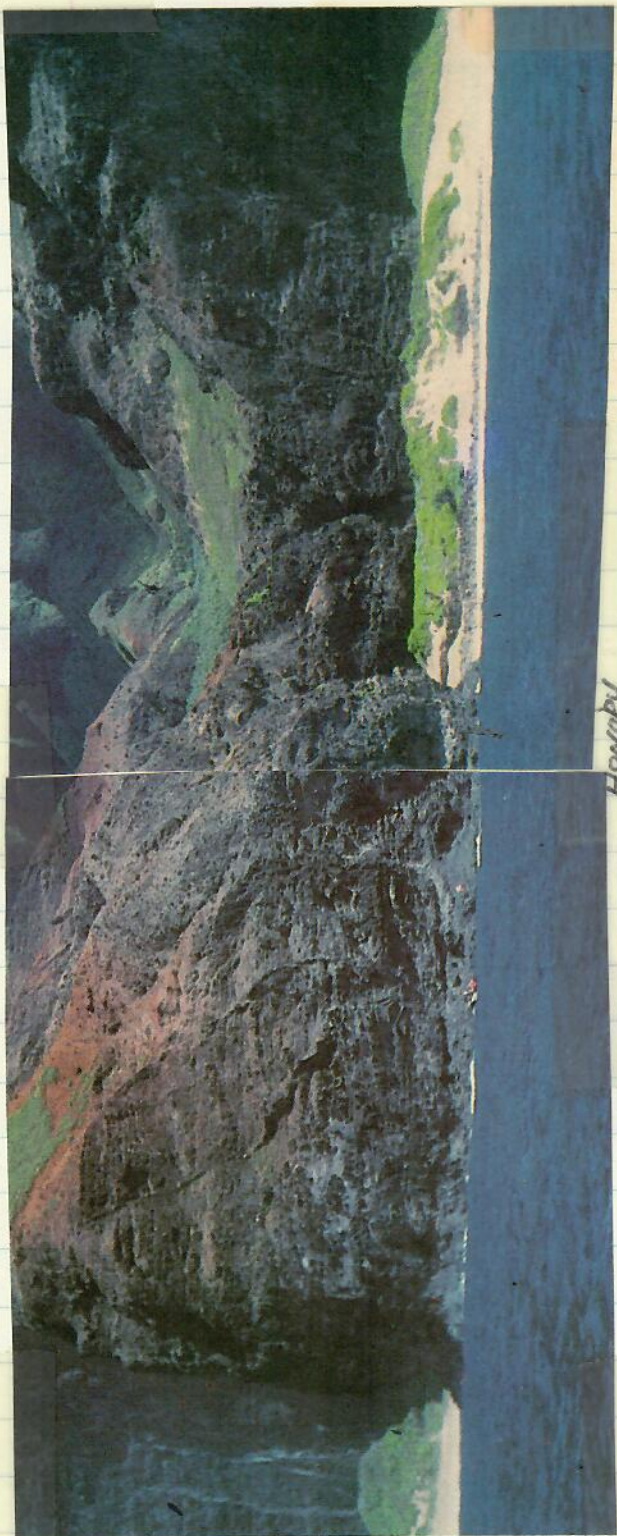
"The recovery attempt was called off at about 5:30 p.m. (yesterday) because it was getting dark," a police spokesman said.

The accident occurred at 11:20 a.m. as Keith and three companions made their way through the rugged terrain of the Na Pali Coast, according to James Henderson, one of the hikers.

Henderson, 28, of Kapaa, reported the accident to police at 12:42 p.m.

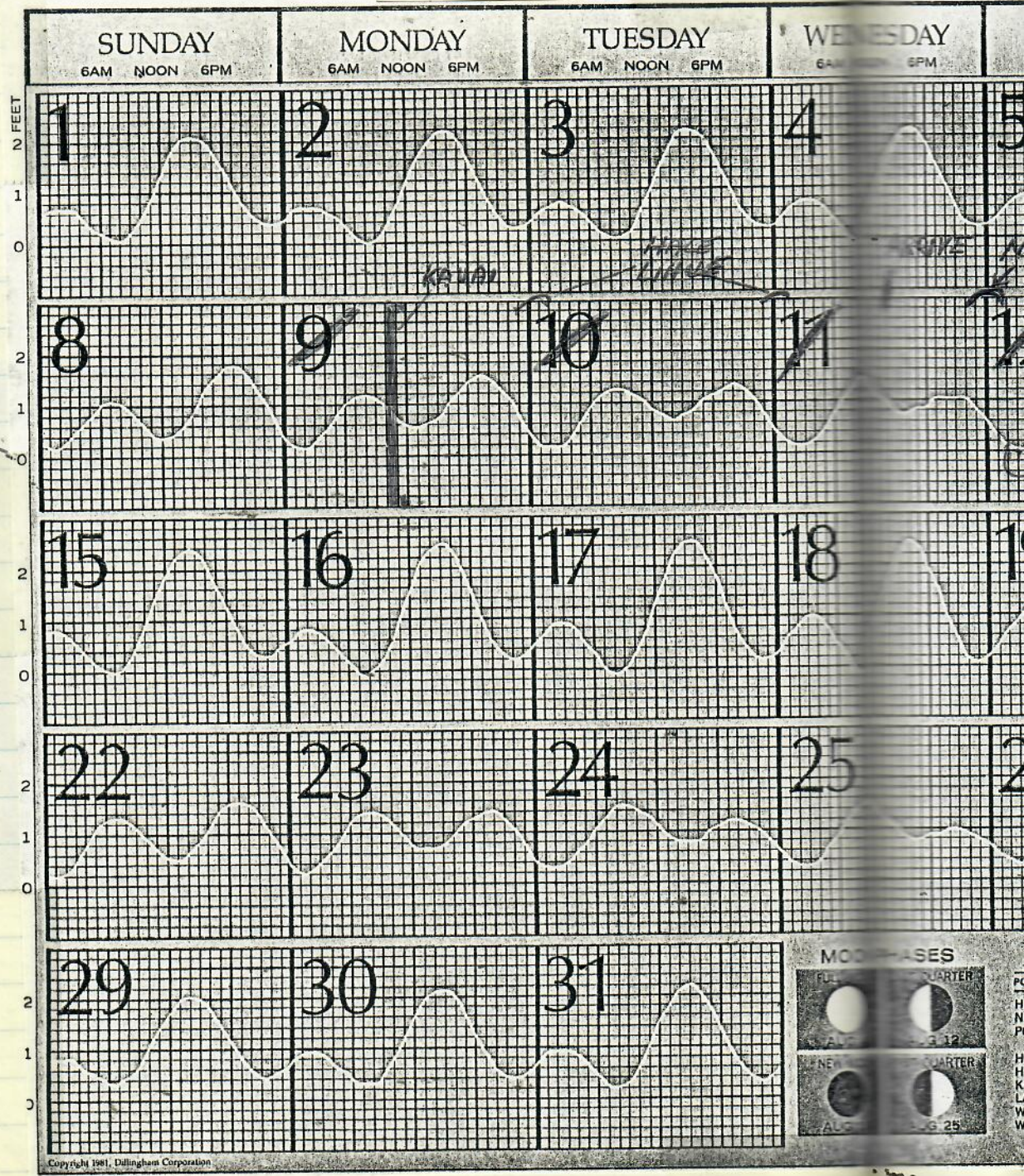
The other two hikers were Susan Barker, 24, of Kapaa, and Karen Lamberton, 36, of Renton, Wa.

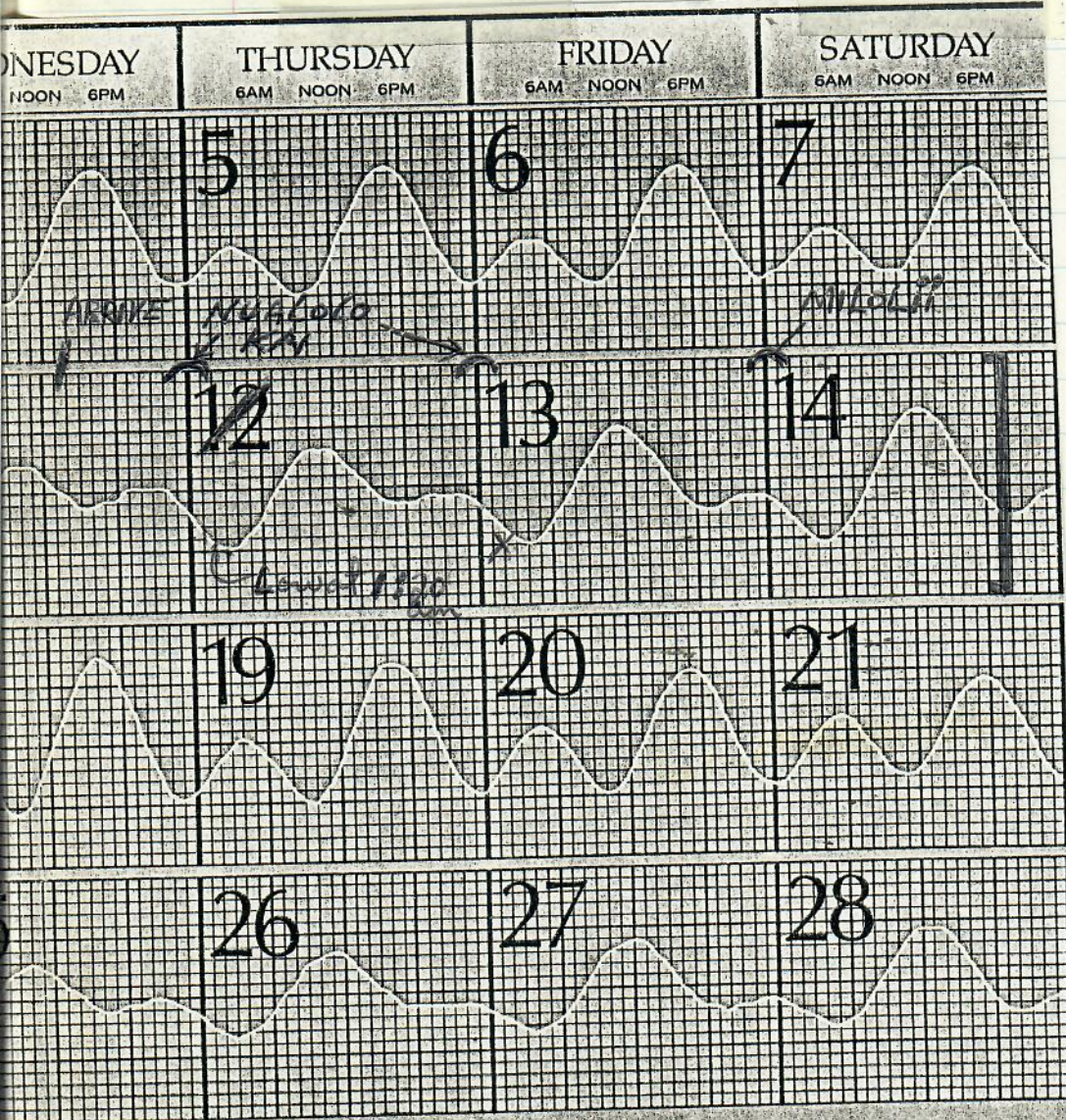
HS-B
23 SEPT 82



Honolulu

AUGUST 1982





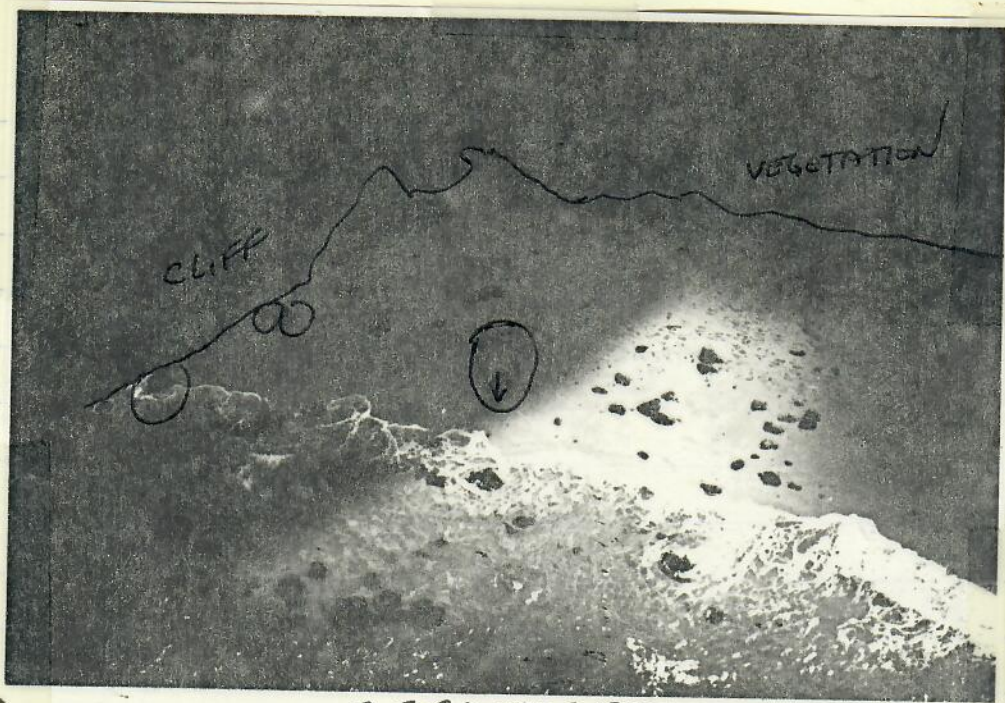
MOON PHASES



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

PORTS	Hrs. Mins.	PORTS	Hrs. Mins.
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	HONUAPU, HAWAII	-0 24
KANEOHE BAY, OAHU	-1 35	MAHUKONA, HAWAII	-0 24
LAIE, OAHU	-1 48	KEALAKEKUA BAY, HAWAII	-0 16
WAIANA, OAHU	-0 16		
WAIMANALO, OAHU	-1 15		

Dillingham



2 FEBRUARY 1982 3pm

NUALOLO KAI
NA PALI COAST

4 adult, or near adult, turtles visible in photo
(card neg) to me by tourist from Canada)

METRIC SYSTEM WITH U.S. EQUIVALENTS

METRIC UNIT (1) U.S. EQUIVALENT

LENGTH

millimeter	(mm)	0.04 inches
centimeter	(cm)	0.39 inches
decimeter	(dm)	3.94 inches
meter	(m)	39.37 inches
decameter	(Dm)	32.81 feet
hectometer	(hm)	109.36 yards
kilometer	(km)	0.62 miles
myriameter		6.2 miles

AREA

square centimeter	(cm ²)	0.155 sq. inches
square meter	(m ²)	1.196 sq. yards
are	(a)	119.60 sq. yards
hectare	(ha)	2.47 acres
sq. kilometer	(km ²)	0.3861 sq. miles

WEIGHT

milligram	(mg)	0.015 grains
centigram	(cg)	0.154 grains
decigram	(dg)	1.1543 grains
gram	(g)	0.035 ounces
decagram	(Dg)	0.353 ounces
hectogram	(hg)	3.527 ounces
kilogram	(kg)	2.2046 pounds
quintal		220.46 pounds
metric ton		1.1 tons

METRIC UNIT (1) U.S. EQUIVALENT

VOLUME

cubic centimeter	(cm ³)	0.061 cubic inches
cubic decimeter	(dm ³)	0.0353 cubic feet
cubic meter	(m ³)	1.31 cubic yards
cubic decameter	(Dm ³)	13.10 cubic yards

CAPACITY, CUBIC

milliliter	(ml)	0.06 cubic inches
centiliter	(cl)	0.6 cubic inches
deciliter	(dl)	6.1 cubic inches
liter	(l)	61.02 cubic inches
decaliter	(Dl)	0.35 cubic feet
hectoliter	(hl)	3.53 cubic feet
kiloliter		1.31 cubic yards

CAPACITY, DRY

deciliter	(dl)	0.18 pints
liter	(l)	0.908 quarts
decaliter	(Dl)	1.14 pecks
hectoliter	(h)	2.84 bushels

CAPACITY, LIQUID

milliliter		0.27 fluidrams
centiliter		0.338 fluidounces
deciliter		0.21 pints
liter		1.057 quarts
decaliter		2.64 gallons

34525

\$2.00