

# AARON Scherman cell 375-7787

### **CLASS PROGRAM**

NAME	ADDRESS
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## Hanauma Bay doing just fine Despite claims to the Despite claims to the

Despite claims to the contrary, the reefs and water quality are in good shape.

Hanauma Bay Nature Park has recently become a focal point of contention. The city wants to further develop the park, while a vocal group of concerned citizens wants to protect it from unnecessary development. The city claims the new infrastructure will protect the bay's reefs, which it says are under environmental stress. The concerned citizens are not so sure. Who is right?

I did some research. To my surprise, I could find no scientific study or other concrete evidence to show that the ecosystems of Hanauma Bay are under environmental stress. In fact, studies show the opposite: Hanauma Bay is thriving under its current protected status.

There are huge numbers of fish — more than you are likely to see anywhere else in Hawai'i. And the bay's coral reefs, which are mostly in the center of the bay and too deep for snorkelers, are among the best developed and healthiest in the state.

The idea that Hanauma Bay is in trouble seems to have arisen because of the dead, barren appearance of the reef next to the beach. This is where most people snorkel. The story that beachgoers killed the reef by trampling on it spread to the media over 20 years ago and is now a well-entrenched myth. Authors have repeated this explanation in their books. To this day the Friends of Hanauma Bay, a volunteer group, solemnly warn beachgoers waiting in line at the ticket booth not to walk on the "living reef."

Why is the coral next to the beach dead, if not by trampling? The answer is buried in two scientific studies. The first was published in 1976: Easton & Olsen — "Radiocarbon profile of Hanauma Reef, Oahu,

### **ISLAND VOICES**

JOHN P. HOOVER

John P. Hoover is author of "Hawaii's Fishes: A Guide for Divers and Snorkelers" and "Hawaii's Sea Creatures: A Guide to Hawaii's Marine Invertebrates."

Hawai'i," Geological Society of America Bulletin. The other, by noted UH oceanographer Richard W. Grigg, appeared in 1998: "Holocene Coral Reef Accretion in Hawai'i, a Function of Wave Exposure and Sea Level History," Coral Reefs.

According to these papers, the reef next to the beach at Hanauma Bay is a fossil reef, the remains of corals that thrived in the bay thousands of years ago when sea levels were higher. As sea levels sank, the corals died. Today, conditions near the beach are unsuitable for living corals. It's too shallow. There is too much wave action on top of the reef and too much sediment in the pools. It's as simple as that.

This information is confirmed by the project's own environmental impact statement. On p. 4-29, we read: "It appears from geologic data that the inner reef flat at Hanauma Bay has not been an actively growing reef for at least four centuries." A few lines down, it admits: "... the composition of the bay's coral community... is primarily a result of natural processes, and not a result of human impact."

So much for stories of people trampling and killing the corals. Abuse like this occurs on some reefs, but it's not happening in Hanauma Bay to any significant extent.

What about water quality? Surely all those people swimming and snor-

keling are creating some bad effect. More good news: The final environmental impact statement reports on a study completed in October 1998: "The overall water quality of the bay does not appear to change substantially as a result of human usage, nor are the changes at a level that might raise any health concerns or be considered detrimental to marine biota" (p. 4-27).

This runs counter to what we usually hear. Does Hanauma Bay's ecosystem really need saving? Almost everyone believes so, and some people are passionate about it, but the facts suggest otherwise. Nowhere in the two-inch thick, three-pound final environmental impact statement could I find documentation that beachgoers and snorkelers are damaging the bay's ecosystem or that the bay's ecosystems are in trouble. Evidently the bay is in good health and not deteriorating, despite the large numbers of visitors.

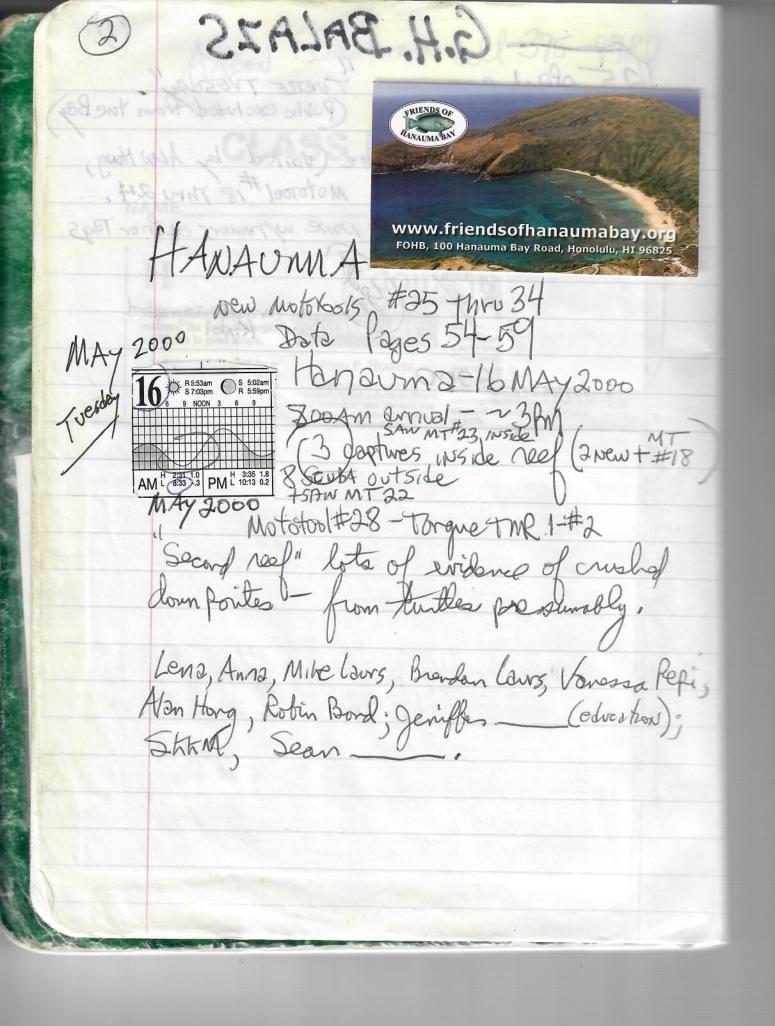
It seems the main danger facing Hanauma Bay Nature Park is that of being over-developed. The current plan calls for a 13,000-square-foot structure on the rim of the bay. Here beachgoers will undergo mandatory "resource awareness training" before they are allowed on the beach. The building will also house a snack bar and a gift shop as well as offices for all the new employees.

Could the real reasons driving the development of Hanauma Bay be economic and political? Given a taste of the money that can be raised by charging admission to a popular beach, this is not a farfetched idea.

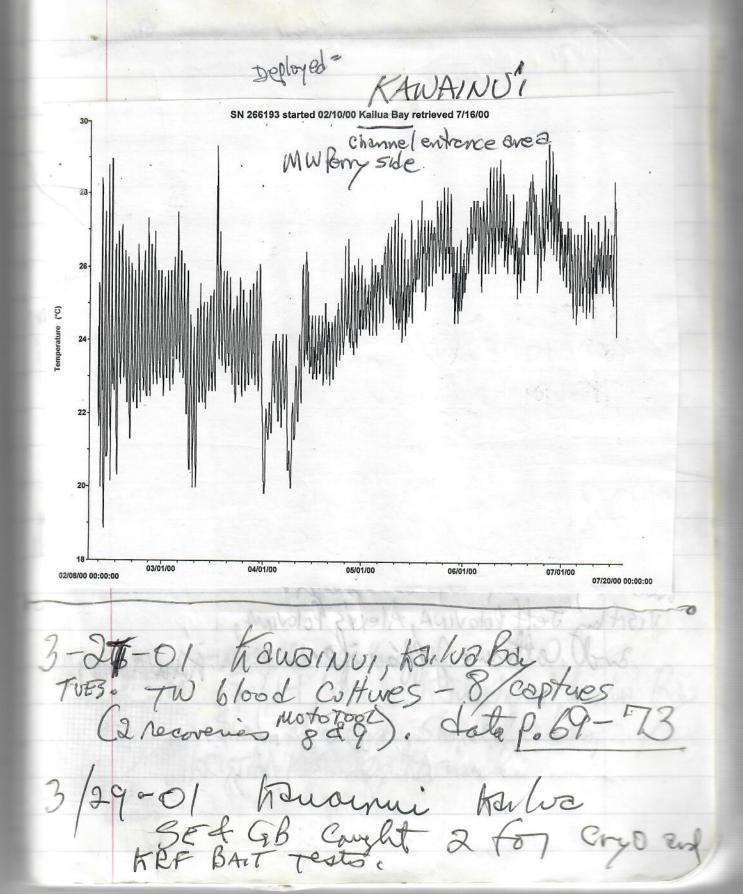
If there are economic advantages to a more developed park, let's hear them. Let's debate the issue of developing Hanauma Bay and possibly our other beaches on those grounds. The city should not have to hide behind the skirts of environmental protection to justify its plan.

G.H. BALAZS 25, APRIL 2000 HANAUMA BAY Lena, Anna, T. work, me (visited by Alaw Hong,
Jack, and Kanoi), Motorool #18 Thru 24.

(7) Captures - None wyromors of Prior Tags 500E0E0E10 his ruthe photographed with KANOi Date: Mon, 26 Jun 2000 15:17:49 -0400 From: "Falklands Conservation (Seabirds at Sea Team) <seabirds@horizon.co.fk> To: George Balazs <gbalazs@honlab.nmfs.hawaii.edu>
Cc: Mark Tasker <tasker\_m@jncc.gov.uk>, Katie Swift <Katie\_Swift@r1.fws.gov> Subject: Nugget [The following text is in the "ISO-8859-1" character set] [Your display is set for the "US-ASCII" character set] [Some characters may be displayed incorrectly] Hi George, I can provide a little more info on the sighting of Wugget. The sighting was on the afternoon of 12 May 2000. The turtle was inside the reef in relatively shallow water. I'm not too familiar with the names of the various sections of Hanauma, but Nugget was frequenting the area 'below the carpark'. i.e. standing on the beach facing the sea, walk as far left as you can on the sand, enter the water and swim out along the interface between the white sand bottom and coral/rock areas. As I recall we were about half way out to the reef, the turtle was approachable (close enough to read the flipper tag) although I only recall seeing one tag. of the various sections of Hanauma, but Nugget was frequenting the area There was no sign of any aggressive behaviour. I was able to take several photos but none that will win any awards. Regards, tANAUMA See P.41 H514 Lt Richard White Seabirds at Sea Team PO Box 705 Stanley Falkland Islands Tel: + 500 22792 Fax: + 500 22791 Email: seabirds@horizon.co.fk



JUNE 2000 KAWAINVI, Hailua Bay AM H 9:27 0.6 PM H 8:58 1.8 New 750 TS-(2 New) + 3 recor. 8 August 2,666 Tresday Hanzuma Hawksbyll Training SKKM, DP, TW, Bob Reymer, Altaison Beal, hard snorbel (2 recorphan 4/25 nots) 2 new- ore wors. TWDP&BR Soula To test on Nitrone 8 seen at Second reef.



Subject: Data Logger placement at Kawainui Canal

Date: Mon, 17 Jul 2000 13:04:53 -1000

From: Mary Arnone < Mary. Arnone@noaa.gov>

Organization: NOAA

To: George Balazs <gbalazs@s360.swfc2.nmfs.gov>

Lena told me that she placed the new data logger at the Sherman's on 7/16/00. I thought I'd email you the details that she told me encase she doesn't pass the word along to you.

She said that there are two no trespassing signs facing the Canal on the Sherman property. Go to the sign that is closest to the gate. The data logger is 6 meters (towards the gate) from that sign. There is a yellow cord tied to a root (on the ground) marking the spot. The logger was placed about 1 meter from the surface in a cave.

placed about 1 meter from the surface in a cave. 1051 10 APril 200 Jett PolovinA, Alexis PolovinA, See b



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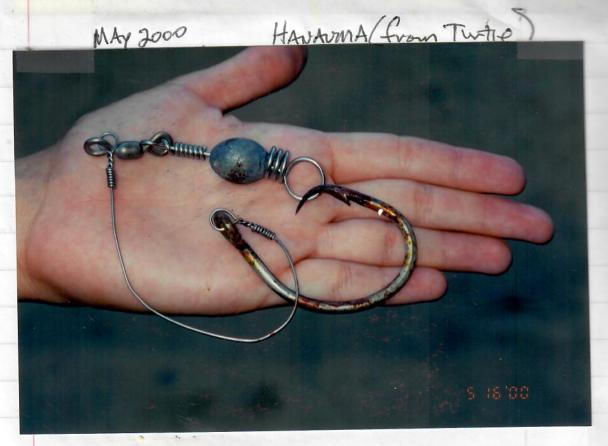
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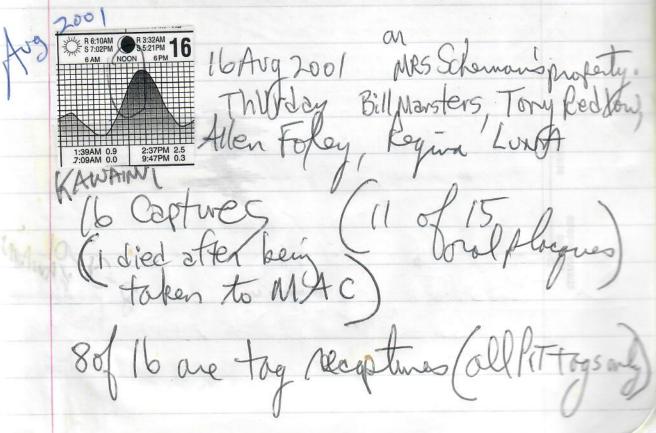
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6-20-0/ Kawai NVI Jages 85-86
Wednesday 4 captives,
SE, SKKM, JAN KAMIYA, Bob Braun
Thurn Work Amy & mother Any (Tw) to
Atulanto, Christine Ogura.





Date: Mon, 09 Apr 2001 07:38:12 -1000

From: Thierry Work <thierry work@usgs.gov>

To: "gbalazs@honlab.nmfs.hawaii.edu" <gbalazs@honlab.nmfs.hawaii.edu>

Bob Morris <makaiclinic@earthlink.net>, mark wolcott <mark\_wolcott@usgs.gov>

Subject: Latest on GST

[ Part 1, Text/PLAIN 42 lines. ] [ Unable to print this part. ]

To all:

The latest results from Kaneohe Bay (15429) and Kawainui (15437)

15429	TS	BACT	15437	TS	Bact
1	2	Neg	1	0	Neg
2	2	Pos	2	0	Neg
3	1	Neg	3	2	Pos
4	1	Neg	4	1	Neg
5	0	Neg	5	1	Neg
6	1	Neg	6	2	Neg
7	2	Neg	7	2	Pos
8	2	Neg	8	1	Neg.

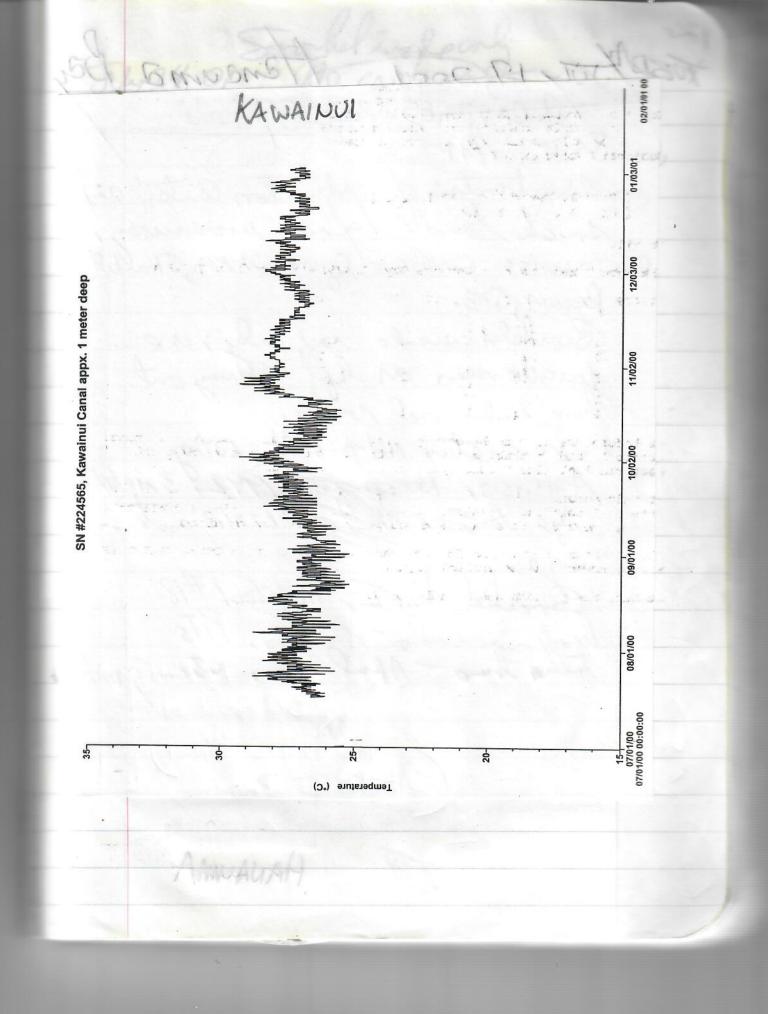
As before, we seem to be only getting blood culture positives on tumor scores 2 (and at that, not all of them). Bact informs me that the bacteria look like Vibrio sp., but I'm awaiting IDs.

At this point, we (Geo and I) need to make some efforts to ferret out some TS-3 turtles. Ideally, in the end, it would be nice (if all falls into place and with adequate n) to paint the following picture:

Prevalence of bacteremia follows the following pattern TSO<=TS1<TS2<TS3 with appropriate statistical significance.

So far, the pattern seems to be holding.

R 6:15AM OR 5:558 S 6:49PM OS 4:258 6AM NOON 5 2:49AM 1.0 3:10PM 8:05AM 0.3 10:04PM



TUBD/July 17, 2001 Handund to 81m 19m Page 87 Dota Construction of "education Center" and snock tous befow underway PARTICIPANTS: CHRISTINE Ogura SKKM, Sharll RegINA, GHB. Evorbeld inside reef only, are Juverile seen on left - Surmy out from under cool rocks. ove capture Moto-Right. Esting Amansia. Recorp from 1992. 3 metal togs look epselent. #1 TMR antern Brookel Live II, Mototool #18 bed in when - rosting. PITS follow them - April 2800, -3 cm growth AMMACIAN

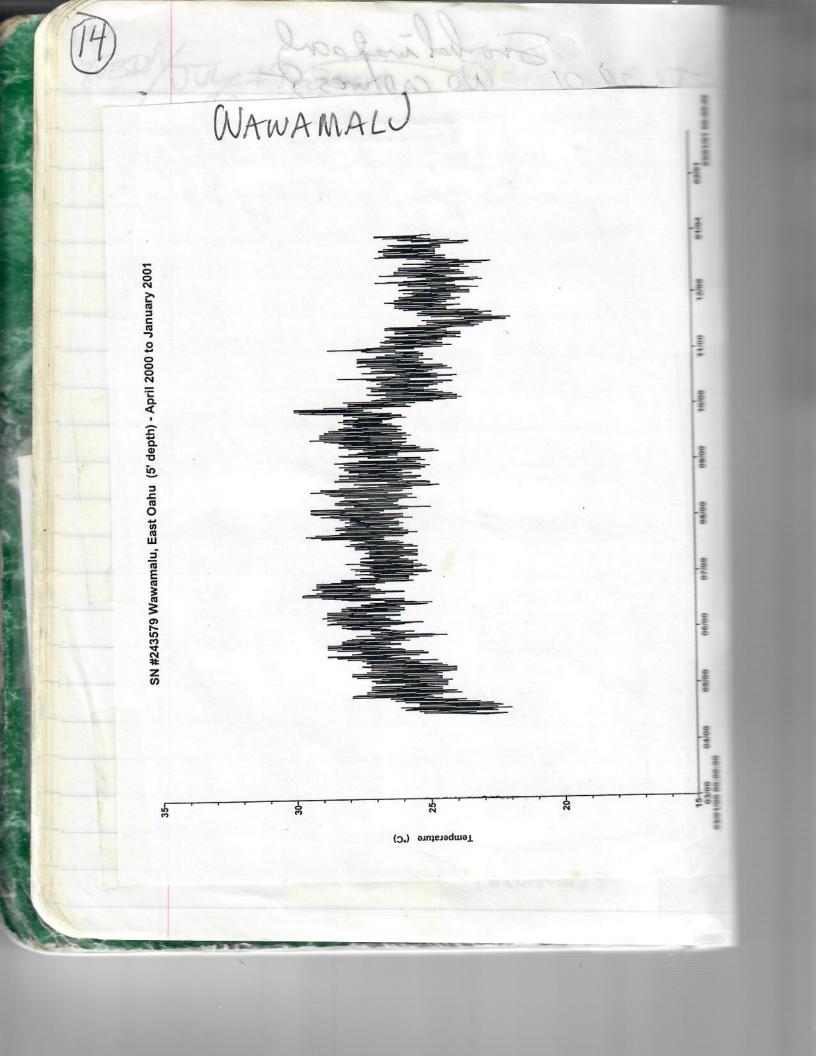
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Shawn, Christine Ogun, Reg. W.A., Torry Palemo,

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12-20-05 Tuesday visitors from CHICHIJIMA Friends Tsutomu Monde why tsutomu\_monde anotmail.com 1942 St. Louis Honolulu HJ 968/6. the Montes DWNS STORE CAND KYOKO Monde Hotels Tokyo-To Japan Japan 100-2101
Shone 04998-1-211-0 Higashimachi ChiChijima Ogasawara-mura Budil. rapakahake onb. dion. ne.jp SAKI Monde & M. akibarbie @ hotmail. com G: (81) 090.8808.8600 Fukagawa 2-2-12-303 KOTO-KU TOKYO, JAPAN

# 07-17-01 HANAUMA RECAPTURE

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Date	Encounter	Location:		TumorRank: NestingAct:	Act: Straight Carapace	Mont	Year	cm/mon	cm/yr
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7/17/01 Near Shore		Oahu, Hanauma	•	1	55.5	109.0	9.1	0.1	1.7

HANAVMA Noted twite evosh" weas on Roo Box jellyfish warnings should flush the sting area with white vinegar or seek aid in effect across island at a lifeguard station, as severe allergic reactions to box The Ocean Safety Division jellyfish stings can result in has issued an island-wide box death. jellyfish warning for today, tomorrow and Thursday. Commonly affected areas include Ala Moana Beach Park, Waikiki Beach, Hanauma Bay, Pokai Bay and Makaha Beach. Lifeguards may post warning signs on beaches if warranted. Those stung by box jellyfish

Date: Wed, 5 Jun 2002 15:26:40 -1000 From: Alton\_K\_Miyasaka@exec.state.hi.us

To: George H. Balazs <gbalazs@honlab.nmfs.hawaii.edu>

Subject: Re: Hanauma Bay dive 6/4/02.

Hi George. It was me on the boat yesterday. When I went in on the Witches Brew dive I saw one about two foot turtle but I wasn't looking for any so didn't make any special note of it. Like you said, we usually see five plus turtles when swimming around out there. I've asked the other guys if they saw any turtles. Will let you know when they call me back. Better luck next time. Alton

> "George H. Balazs" <gbalazs@honlab.nmfs.h</pre> awaii.edu>

06/05/02 07:22 AM

Alton Miyasaka To:

<alton k miyasaka@exec.state.hi.us>

CC:

Subject:

Hanauma Bay dive

6/4/02

Aloha Alton, I think you were on the boat yesterday working in Hanauma Bay. Or, maybe it was you, we crossed paths within 50 ft underwater.

How any turtles did you see? On scuba we saw....none. This was a shocker because the second reef is usually crawling with turtles. We last worked in the bay about 10 months ago. Best, George

Date: Thu, 06 Jun 2002 05:03:32 +0000

From: Anna Sigurdsson <anna\_sigurdsson@hotmail.com>

To: gbalazs@honlab.nmfs.hawaii.edu

Subject: Re: Very nice to see you today!

The following text is in the "iso-8859-1" character set. ] Your display is set for the "US-ASCII" character set.

[ Some characters may be displayed incorrectly. ]

Thank you so much for letting me come, I had a greta time, even four wished for some turtles.

I talked to my dive buddy, Tod, and he too is convinced the turtle was bigger than 50 centimeters, more in the range of 1 meter. We both thought it looked fat and healthy but I guess a tumor score 1 can be hard to see in the

We saw the turtle at a dive spot called the mini barge, located about 1 1/2 miles off Diamond Head, in Maunalua Bay, more acurately off the Kahala

I can't remember the date we went diving but I will check my dive log when I come back home tomorrow and then I'll email you the date.

Love Anna

Mahalo, Thanks for writing back, yes would appreciate hearing what your other folks saw. George

On Wed, 5 Jun 2002 Alton\_K\_Miyasaka@exec.state.hi.us wrote:

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> > > time. Alton

Date: Wed, 5 Jun 2002 16:38:29 -1000 From: Alton\_K\_Miyasaka@exec.state.hi.us

To: George H. Balazs <gbalazs@honlab.nmfs.hawaii.edu>

Subject: Re: Hanauma Bay dive 6/4/02

They just called me back. They didn't notice any turtles on their surveys but on the way back to Sand Island they said they saw about five turtles.

Date: Sat, 15 Jun 2002 10:40:24 -1000

From: Alan Hong <ahong@lava.net>

To: George H. Balazs <gbalazs@honlab.nmfs.hawaii.edu>

Cc: rappa@hawaii.edu

Subject: Turtles (or lack of) at Hanauma Bay

[ Part 1, Text/PLAIN (charset: ISO-8859-1 "Latin 1 (Western Europe) " [ 23 lines. ] [ Unable to print this part. ]

[ The following text is in the "iso-8859-1" character set. ] [ Your display is set for the "US-ASCII" character set. [ Some characters may be displayed incorrectly. ]

Aloha George,

Got my repaired computer back from HP, so I'm up an running again.

There have been occasions when I've seen no turtles while snorkelling, but that is very, very rare. I'll start checking with others, and try to go out myself.

Peter Rappa and I went out a little more than a month ago and saw seven turtles in their usual spot.

Will keep you posted.

On a similar note, items are being delivered for our educational exhibit. We will have stuffed sea turtles (I think they're on loan from NMFS or Fish & Wildlife to Sea Grant) in the exhibit. However, the exhibit contractor couldn't find a sea turtle skeleton, so he's using one from a box turtle. Would you know of a source for a sea turtle skeleton. which is much more appropriate for H-Bay?

Date: Thu, 06 Jun 2002 22:30:31 -1000

From: Laura Fontanilla <olive@hawaii.rr.com>

To: George H. Balazs <gbalazs@honlab.nmfs.hawaii.edu>

Subject: Re: Turtles at Hanauma

George,

Decided on a dive this afternoon. You are right about the lack of turtles. We saw 2 at reef #2. But, the most exciting was the Hawksbill turtle that was also there (3 all together). My pictures are at the lab for processing...will pick up tomorrow. I was having problems with my strobe so I hope they come out. That was really strange for it to be so scarce....think the are running from the predator?

Aside from that we ran into a 4 foot barracuda and 4 juvenile squid along the line at the channel.

When are you planning to go out there again?

FOTAL Great to have the form. I'll distribute them. I saw the hawksbill 9:00 in it's usual place today and a turtle with very enlarged tail (?) tumor infection? Took a picture but it was very deen IMP reduce mas but it was very deep Date: Thu, 11 Jul 2002 17:22:20 EDT From: Suzhamhi@aol.com To: gbalazs@honlab.nmfs.hawaii.edu Great to have the form. Subject: (no subject) Dear George, Suzanne Aloha,

DATA Pages 100 9 New, 1 Recovery)
NUGGET 9
= 1 cm Sc. BRIDGETS "FAREWELL LUNCHE October 2005 (Hanauma Bay Thip was at ARRIVE Hansuma 715An Cofi, (ERIN, Shown, Cheryl KAINE), Bob Morris. Alan Hong & Robin Bond. JAck-worker drove cart - Hameas many past mi to HANAIMA, When walking down hill we stolled 6+ tuilled on the left our and down I Saw and photogla 5gu, D. Started snorhel on the left Nogget. I cought of ampulee , to the worked up tuilles - many photo worked up tuilles scard Snorbel --1-2 fm. 2 more Defaited - 3 PM.

Date: Thu, 15 Apr 2004 14:59:40 -1000
From: John S. Johnson <jsj@amagata.com>
To: George H. Balazs <gbalazs@honlab.nmfs.hawaii.edu>
Subject: RE: Basking in Makaha [ The following text is in the "utf-8" character set. ] [ Your display is set for the "US-ASCII" character set. ] [ Some characters may be displayed incorrectly. ] Actually, turtles are one of my favorite subjects for photography and Nugget had such a way of introducing herself to me on a dive that I couldn't help but fall for her. There is another nicknamed Boomerang by some at the bay. She is also person-tolerant and a wonderful subject (I assume the "she" because of the short tail with respect to carapace size, but I don't know). I am not aware of Miss Piggy off Kona, but wouldn't mind a visit. For the last several months I have spent considerable time at Makaha at Turtle Rock admiring the cleaning station. Saw nine there recently, including a HUGE male the size of a tabletop. I have seen two turtles carrying extensive lengths of monofilament line lately out there. I won't admit to anything illegal, but there is no danger of limb

As for Nugget, the last time I saw her was <u>yesterday</u>. Saw her near her usual resting place in an area by the backdoor side. Of my last 8 trips to this place in the later hours of the day I have found her 5 times (over a period of 3 amputation anymore. months). Sometimes napping, sometimes scavenging for limu. Boomerang also uses the same ledges to bed down in, I've noticed. Anyhoo, I am attaching a pic from yesterday. I have a couple pictures of her on the Underwater Photographic Society of Hawaii page below as well:

http://www.upsh.org/Scripts/Gallery.php?memberid=1&galleryid=38&name=John+Johnso

Mahalo, John

> ----Original Message----From: George H. Balazs [mailto:gbalazs@honlab.nmfs.hawaii.edu] Sent: Fri 4/16/2004 6:10 AM To: John S. Johnson Cc: Subject: RE: Basking in Makaha

Good God man, you know ALL the turtles don't you? When's the last time you saw Nugget and in what part of the Bay?

About my "temporary tattoos" the problem is they are too temporary! After just a few months they have grown out-- the sign of heathy turtles.

Do you also know a turtle named Miss Piggy of Kona coast diving fame? Aloha, starting tomorrow I'll be off email for 8 days. On Thu, 15 Apr 2004, John S. Johnson wrote:

> I have seen your handiwork on the shells of a few turtles up at Laniakea

> recently. Yes--Aki's Cove is the place I was referring to. Anyway,

> Nugget sends her regards...

(24)

Date: Mon, 24 Oct 2005 10:45:19 -1000

From: "Hong, Alan" <ahongl@honolulu.gov>
To: George H. Balazs <palazs@honlab.nmfs.hawaii.edu>
Cc: rcbond@hawaii.rr.com, "McDaniel, Martha D." <mmcdaniel@honolulu.gov>
Subject: RE: Hanauma- Turrie Tuesday?

Aloha George,

Thus far this month, a monk seal(s) has been in the bay on Oct. 1, 10, 11, 20, 21, & 23. The seal(s) almost always Kaul out on the ledge bordering the Backdoor Channel.

Facing toward the mouth of the bay, the Backdoor Channel is on the far left. The Keyhole is the next sandy area (shaped like a teardrop).

Alan

----Original Message---From: George H. Balazs [mailto:gbalazs@honlab.nmfs.hawaii.edu]
Sent: Monday, October 24, 2005 10:12 AM
To: Hong, Alan
Co: rcbond@hawaii.rr.com
Subject: RE: Hanauma- Turtle Tuesday?

when was the last time a seal was seen? Is keyhole to the tight left looking down, or? Thanks Alan!

On Mon, 24 Oct 2005, Hong, Alan wrote:

> Aloha George,

> In the two minutes it took me to checked the water at 9:00 this morning, I saw two turtles in the Backdoor Channel/Keyhole area.

> I think tomorrow is a GO. The water is not rough, but since it's high tide, somewhat murky.

Alar

> ----Original Message---> From: George H. Balazs [mailto:gbalazs@honlab.nmfs.hawaii.edu]
> Sent: Saturday, October 22, 2005 6:44 AM
> To: Hong, Alan; Hong, Alan
> Subject: Hanauma- Turtle Tuesday?

> Are we still ON for Tuesday morning Alan? We would all arrive about > 715am. Five or six cars, about 11 people all my staff or affililates. > Please advise. Aloha, George

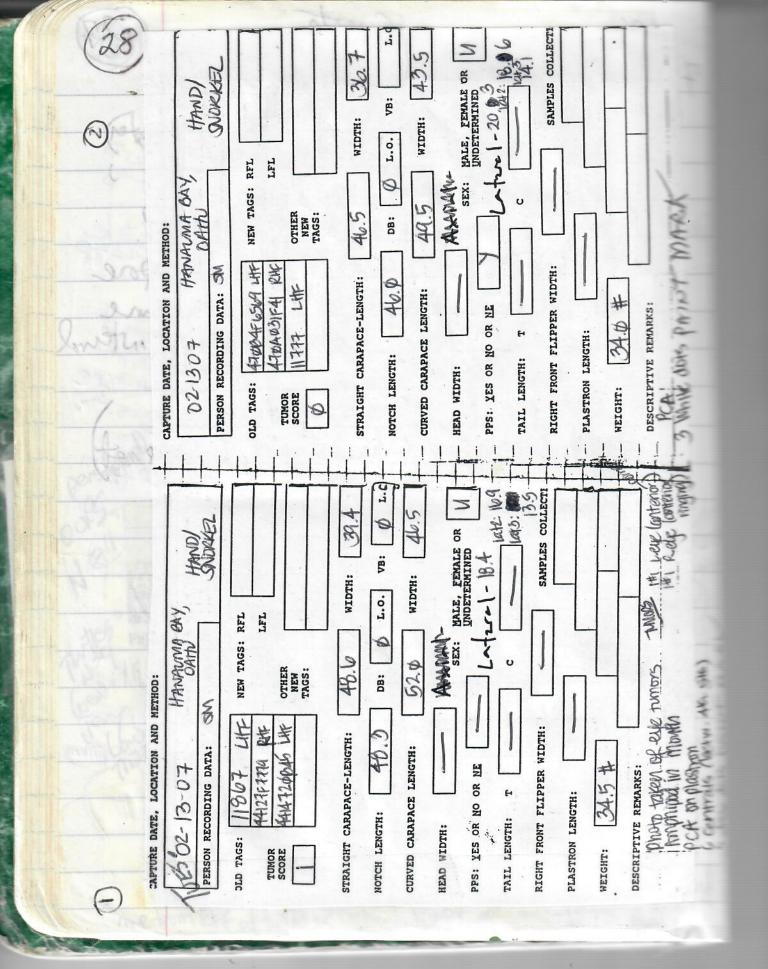
George H. Balazs, Leader
Marine Turtle Research Program
NOAA, National Marine Fisheries Service
Pacific Islands Fisheries Science Center
2570 Dole Street
Honolulu, Hawaii 96822-2396 USA
Tel:(808) 983-5733
Fax:(808) 983-2902
gbalazs@honlab.nmfs.hawaii.edu

John Johnson Johnson John Sanetreathahoto.com

t P. 27 - 15-05 M + ANT Melony Word+Dobilloners + Migura+Bridgets
Word+Dobilloners + Migura+Bridgets
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& Brother DECEMBER 20,05 Note high was 1.6ft IlAm an M. GIWA, Shaws, 815 am 10-25-05 trip 8 Blood fonTP Mangel, Josnina, Stantame, Daughter Allison, JOHN JOHNSON MANON 加多 Manami YAMAgochi Chichidima 11 captures (15) Russell Price 4 New, 7 Recording (INCLUDES ALAN HONG JACK O ROBIN BOND

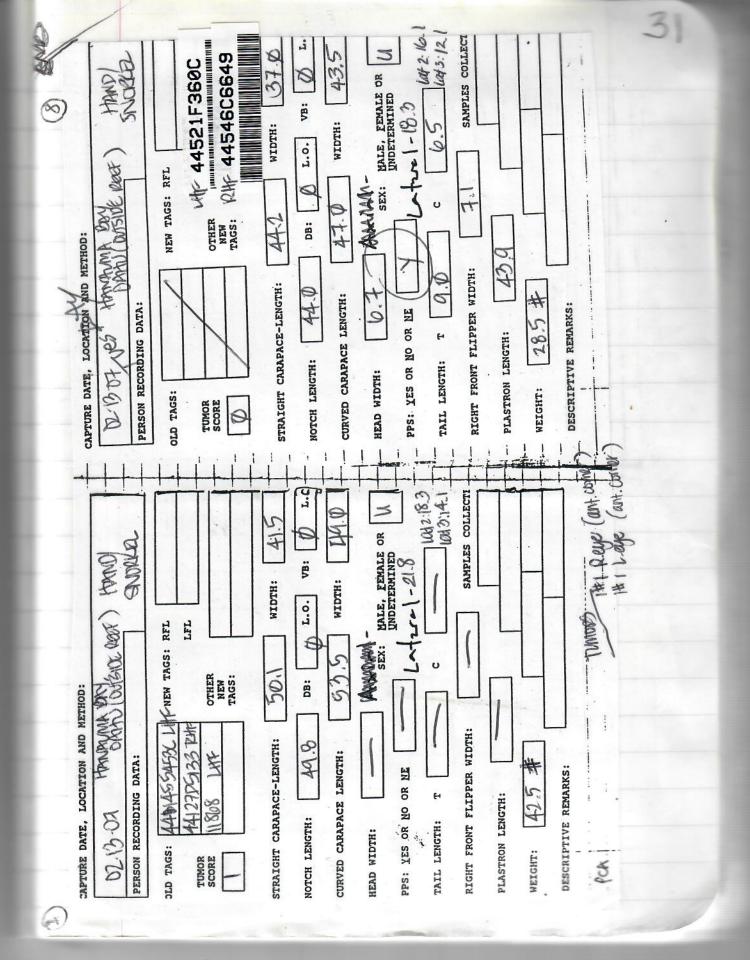
11 gaptives (4 New JOHN HONG, Polten Bond, 3 From NY SHAWN, DUSTY, IRene NURZIA, Joanne lettigrow, Donne Oshwo, Bull thuit/solety office, 9mm 28 18606 Shrove Tuesday Malasada Day siebert words! Me, 5KKM, ERIN, DUSTY, MARO nie (Polovinose intern), IPene Narija, Jeanne Suzaine Hommen fiftshop person half day es mode outsided. O went outside very Colin Strange Told about waged " resting head on shoulder Al 9-11 then her writing to governoof Augapeting SHARE Alog with Ny Fore happens. A 150, she sees at howlasted me from RFF of title we captured. Plus is welling Tumoral TO A2.

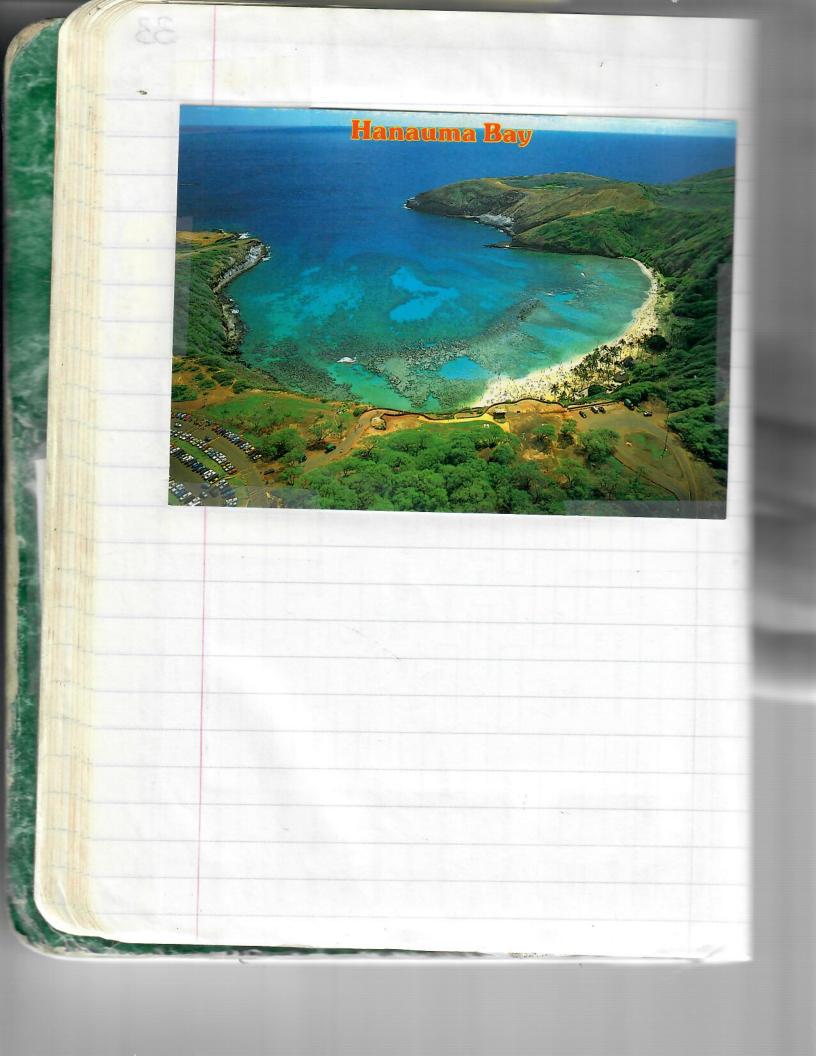
**BOX JELLYFISH RETURN TO BEACHES** A box jellyfish advisory has been issued ... for tomorrow and Thursday with possible arrivals today. The affected areas will be Waikiki Beach, Hanauma Bay, Pokai Bay, Makaha Surfing Beach and Waimea Bay. There also have been occasional sightings on the north and west shores of Oahu. For public information about ocean conditions, advisories and warnings, a pre-recorded report can be accessed 24 hours a day at 922-3888, ext. 51.



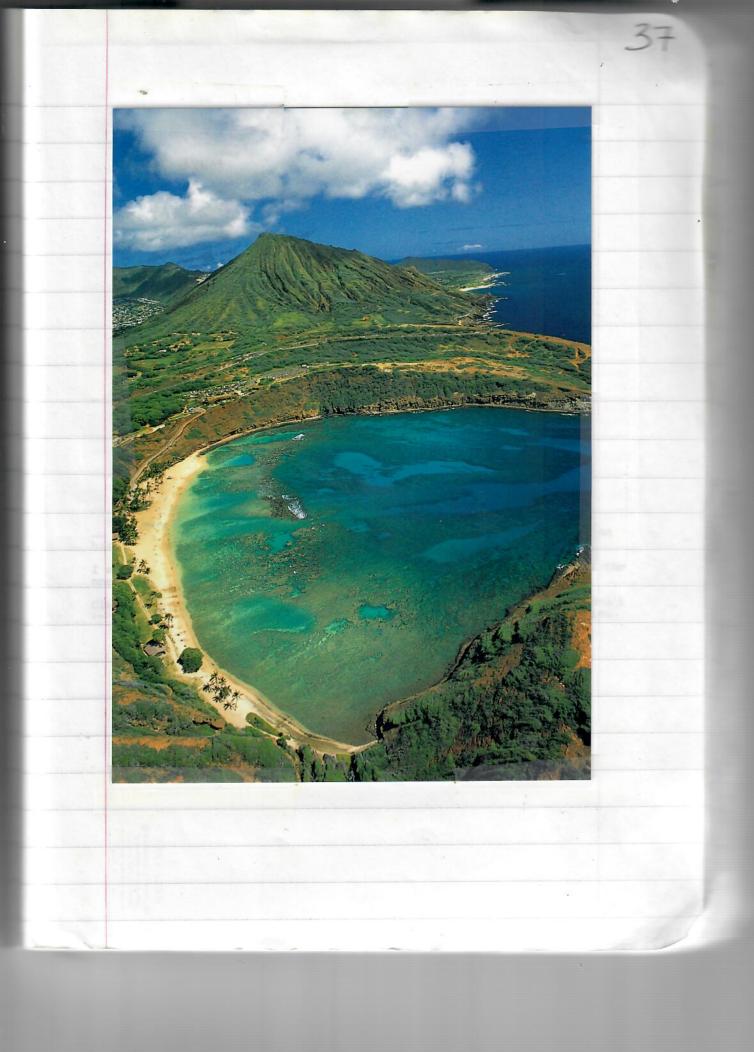
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Date: Sat, 5 Jan 2002 18:38:04 -1000 From: Alan Hong <ahong@lava.net> To: George H. Balazs <gbalazs@honlab.nmfs.hawaii.edu>, Jeffrey Yasushi Kuwabara <kuwabara@hawaii.edu>,
Cc: Kimberly Artita <kimby@soest.hawaii.edu>,
Shandell Eames <seames@honlab.nmfs.hawaii.edu>, olive@hawaii.rr.com Subject: Re: Sick Turtle at Hanauma(fwd) [ Part 1, Text/PLAIN (charset: ISO-8859-1 "Latin 1 (Western Europe)") [ Unable to print this part. ] [ The following text is in the "iso-8859-1" character set. ]
[ Your display is set for the "US-ASCII" character set. ] [ Some characters may be displayed incorrectly. ] Aloha George,

By the description, this sounds like the turtle we call "Nugget" that you tagged in Hanauma Bay on May 20, 1992. Lisa King and I were there that

I came upon Nugget most recently on 12/31/01, at about 3:00 in the afternoon. He (she?) went through his usual routine, swimming into our group, slapping us with his flipper, pushing his face into our masks,

When I went out to the same area on 1/3/02, I saw seven turtles, but Nugget wasn't among them. This is not unusual, since we've come upon him

Would be very interesting to check Nugget's growth the next time you do Aloha,

Alan

Date: Fri, 04 Jan 2002 07:32:56 -1000 (HST)
From: Jeffrey Yasushi Kuwabara <kuwabara@hawaii.edu>
To: George H. Balazs <gbalazs@honlab.nmfs.hawaii.edu>
Cc: olive@hawaii.rr.com
Subject: sick turtle (fwd)

George,

Happy new York Date: Fri, 04 Jan 2002 07:32:56 -1000 (HST) Happy new year. Just received this message and thought you might be interested. I know that there is nothing we can do. It may just be a case of nature at work. At any rate, if you have a more complete or different response, please contact Laura. mahalo, jeff \*\*\*\*\*\*\*\*\*\* Jeffrey Y. Kuwabara Marine Park Program Specialist Hanauma Bay Education Program phone: (808) 397-5840 fax: (808) 395-0468 e-mail: kuwabara@hawaii.edu \*\*\*\*\*\*\*\*\* ----- Forwarded message -----Date: Sun, 30 Dec 2001 16:39:20 -1000 From: Laura Fontanilla <olive@hawaii.rr.com> To: Jeff Kuwabara <kuwabara@hawaii.edu> Subject: sick turtle Jeff, We were diving on Sunday 12/30 and found this very sick turtle (no evidence of cancer), we reported it to kimi. He was very lethargic and he remained in this position but kept falling on his side. I saw three tags on him, one was unreadable. One on his front read H513, the one on his back leg was H514. Clayton will be there again on Monday 12/31. He might look for you. We don't know if anything can be done to help this guy but he sure looked very sick.

Date: Sat, 05 Jan 2002 07:47:00 -1000

From: Laura Fontanilla <olive@hawaii.rr.com>

To: George H. Balazs <gbalazs@honlab.nmfs.hawaii.edu>

Subject: Re: Sick Turtle at Hanauma (fwd)

> Is it possible the turtle was simply Very Soundly sleeping?

Nope, we were positive of that. There were other behaviors that made it evident that something was not right.

> Where is Turtle Town within the Bay?

Past witches brew, nearly to the mouth of the bay. THe depth was ~40-50 . If you follow the cable out it will take you directly there. I would be happy

Did you see the picture I had attached to the email to Jeff? I'll attach it to this one. When we first entered the water (scuba) he approached us and tried to bite the camera so I thought he was a friendly turtle but he did not part from us (I usually make note of all the marked ones). We went on our way to photograph some of the sleeping ones but I was intrigued by the way this one was "resting"....as you can tell by the photo, that's the way I later found him. He would "fall" on it's side and stay there (like he was drunk). Had no energy to prop itself back up. That's when I thought it wasn't a case of a friendly turtle.

If I can help in any way please call me at 754-3513 (cell). Clayton or I would be happy to show you where it is if you need to take further action.

>Do you work at Hanauma- have we met?

We don't work there. We dive (scuba and skin) there very very often. We also do some underwater photography. I'm sure after this we will meet sometime.

Date: Mon, 07 Jan 2002 22:03:27 -1000
From: Laura Fontanilla <olive@hawaii.rr.com>
To: George H. Balazs <gbalazs@honlab.nmfs.hawaii.egu>
Subject: tags Geroge, Any firm confrimation that I have picture of Nugget? Tag on left is H513, back left is H514. I did get on your page. Great!! What a spectacular event to be a part of. How can I keep abreast on your works? Laura

Historical Information for Turtle Tag 357A7148

		Growth-Rates	cm/mon cm/yr	1	0.0	1.
	Overall	Growt	cm/mon	1	0.0	ı
	O	Interval	Year	ı	0.1	1.0
		Inter	Month	ı	1.0	12.0
		-Rates	cm/yr	1	0.0	1
	Encounter	Growth-Rates	cm/mon	1	0.0	ľ
	Since Last Encounter	val	Year	1	0.1	8.0
V.		Interval	Month	ı	1.0	10.0
1			Weight	26.0	26.0	18.0
Tag Position RHF LHF			NestingAct:			,
Tag Type PIT PIT			TumorRank: NestingAct:	1	2	8
<u>Date</u> 4/14/00 4/14/00			Location:	4/14/00 Near Shore Oahu, Kawainui Canal	Oahu, Kawainui Canal	Oahu, Kawainui Canal, Kailua Bay
	- Shanner	Type of	Encounter	Near Shore	6/7/00 Near Shore	4/23/01 Near Shore
Tag Number 357A7148 362B485A			Date	4/14/00	00/1/9	4/23/01

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Historical Ir

			-Rates	omyr	1.0	1	
		rall	Growth-Rates	I I	0.1	0.0	
		Overall	val		1.0	1.0	Contract of the Contract of th
			Interval	1	1.0	12.0	
			Rates	. 1	1.0	ı	
140		Encounter	Growth-Rates	1	0.1	0.0	
alay solv		Since Last Encounter	val	1	0.1	0.8	
anni on in			Interval		1.0	10.0	
The source in the land of the land of the land			TumorRank: NestingAct: Straight Carapace	44.7	44.8	44.5	
	Tag Position RHF LHF		NestingAct:				
	Tag Type PIT PIT		TumorBank:	-	61		
	Date Ta 4/14/00 4/14/00		Location:	Oahu, Kawainui Canal	Oahu, Kawainui Canal	Oahu, Kawainui Canal, Kailua Bay	
			Type of Encounter	4/14/00 Near Shore	6/7/00 Near Shore	4/23/01 Near Shore	1000
	Tag Information:  Tag Number 357A7148 362B485A		Date	4/14/00	1 00/2/9	4/23/01	

			Growth-Rates	1	3.6
		erall	cm/		0.3
		Overall	Interval Month Year	1	7
			Inte	1	13.0
			Growth-Rates /mon cm/yr		3.6
37535		Encounter	Growth-Rates cm/mon cm/yr	1	0.3
e Tag 3578		Since Last Encounter			17
tion for Turtle			Interval Month Year	1	13.0
Historical Information for Turtle Tag 35787535			Weight	26.0	30.0
Histo	Tag Position LHF RHF		NestingAct		
	Tag Type PIT PIT		TumorRank: NestingAct:	2	-
	Date 3/17/00 3/17/00		Location:	Oahu, Kawainui Canal, Kailua Bay	Oahu, Kawainui Canal, Kailua Bay
:uc			Type of Encounter	3/17/00 Near Shore	4/23/01 Near Shore
Tag Information:	Tag Number 35787535 36282844		Date	3/17/00	4/23/01

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Tag
for Turtle
Information
Historical

Tag Number	lber 35	<u>Date</u>	Tag Type PIT	Tag Position	u								
36282B44	44	3/17/00	PIT	RHF									
							Since Last	Since Last Encounter			õ	Overall	
	Tyme of					Interval	val	Growth-Rates	-Rates	Interval	ral	Growth	Growth-Rates
Date	Encounter	Location:	TumorRank	NestingAct	TumorRank: NestingAct: Straight Carapace Month Year	Month	Year	cm/mon cm/yr	cm/yr	Month Year	Year	cm/mon	cm/yr
3/17/00	3/17/00 Near Shore	Oahu, Kawainui Canal, Kailua Bay	RI		47.0	ı	1	ı	1	ı	.1	1	1 .
4/23/01	4/23/01 Near Shore	Oahu, Kawainui Canal, Kailua Bay	-		47.0	13.0	7	0.0	0.0	13.0	17	0.0	0.0

# 04-23-01 KANAINU! KECAPIUKKO

Tan Mimbor				and a state of the lag 3101		I urrie lag	3101					
	Date 6/6/79 6/6/79 4/14/00	Tag Type 1681 1681 PIT	Tag Position RFL LFL RHF LHF	U						*		
Type of			1.00.0			Since Le	Since Last Encounter			Č	Overall	
6/6/79 Near Shore	Location: Oahu, Bellows AFB, Waimanalo Bay #1		NestingAct:	TumorRank: NestingAct: Straight Carapace.	Month	Interval	Growth cm/mon	Growth-Rates fmon cm/yr	Month	Interval	. Ē	Growth-Rates /mon cm/yr
4/14/00 Near Shore	Oahu, Kawainui Canal	N		84.5	250.0	20.8	0	5				ı
4/23/01 Near Shore	Oahu, Kawainui Canal, Kailua Bay	N		64.3	12.0	1.0	0.0	3 ∣	250.0	20.8	1.0	1.0
	1895	- 8 8 8							0.00	89	0.1	0.1
Tag Information: Tag Number 3101 3102 35312C75 35685A11	Date 6/6/79 6/6/79 4/14/00 4/14/00	Tag Type 1681 1681 PIT		Historica Tag Position RFL LFL RHF	al Informati	Historical Information for Turtle Tag 3101	Tag 3101					

Growth-Rates

cm/mon

Year

Interval Month

cm/yr

cm/mon

Year

Weight 24.0

TumorRank: NestingAct:

Location:

Type of Encounter

Date

6/6/79 Near Shore Oahu, Bellows AFB, Waimanalo Bay #1

Interval Month Ye

Growth-Rates

Since Last Encounter

0.2

20.8

250.0

2.5

0.2

20.8

250.0

70.0

Oahu, Kawainui Canal, Kailua Bay

Oahu, Kawainui Canal

4/14/00 Near Shore 4/23/01 Near Shore

## 03-29-01 KAWAINUI RECAPTURE

g Information:	ion:			1	Historical Information for Turtle Tag 350B3711	on for Turtle	e Tag 350	B3711				
Tag Number 350B3711 362A6F40	11 ber	Date 3/17/00 3/17/00	Tag Type PIT PIT	Tag Position RHF	g.							
4	Type of						Since Last Encounter	Encounter			ð	Overall
dale	Encounter	Location:	TumorRank	NestingAct:	TumorRank: NestingAct; Straight Carapace	Month	Year	Growth-Rates	h-Rates	Interval		Growt
3/17/00	3/17/00 Near Shore	Oahu, Kawainui Canal, Kailua Bay	-		47.8	ı	ı		diry	Month	Year	cm/mon
3/27/01	3/27/01 Near Shore								ı	1	1	1
					46.0	12.0	1.0	0.1	0.7	12.0	1.0	0.1
3/29/01	3/29/01 Near Shore	Oahu, Kawainui Canal, Kailua Bay	-		48.5		1	1	1	12.0	ç	
				-							2	0.1

0.7

Historical Information for Turtle Tag 350B3711	lag Position RHF LHF	Since Last Encounter
	Tag Type PIT PIT	
	Date 3/17/00 3/17/00	4
Tag Information:	Tag Number 350B3711 362A6F40	

	Type of			-1-			Since Las	Since Last Encounter			Č	Morall	
Date	Encounter	Location:	TumorRank	TumorRank: NestingAct:	Weight	Month	Interval Year	Growth	Growth-Rates	Inte	ırval	Growth-Rates	-Rates
3/17/00 N	3/17/00 Near Shore (	Oahu, Kawainui			0.00			Distriction	cmyr	Month	Year	cm/mon	cm/yr
		Canal, Kailua Bay			31.0	1	1	ı	1	1			
3/27/01 N	3/27/01 Near Shore	Oahii Kawainiii										1	1
		Canal, Kailua Bay			31.0	12.0	1.0	0.0	0.0	12.0	. 10		
3/29/01 N.	3/29/01 Near Shore	Oahu, Kawainui	-		966						?	0.0	0.0
		Canal, Kailua Bay					1	ı	ı	12.0	1.0	1	-

0	AUMA	•	HAND/
PERSON RECORDING DATA: OK			SCUBA
OLD RFL FAGS: LFL	NEW TAG	: RFL	FI7
TUMOR SCORE	OTHER NEW TAGS:	1 - [H	F16 F F18
STRAIGHT CARAPACE-LENGTH:	42.5	WIDTH:	34.4
NOTCH LENGTH: 42.4			
CURVED CARAPACE LENGTH: 4	5.5	WIDTH:	40.5
HEAD WIDTH: 6.9	sex: M	LE, FEMAI	E OP
FAIL LENGTH: T 7.0		.5	
IGHT FRONT FLIPPER WIDTH:	7.4		PLES COLLECT
LASTRON LENGTH: 34. 2		(1) Aig	aesample in ities betw. tum
EIGHT: 21.0 #			140 4 22 2
ESCRIPTIVE REMARKS:  WIND 15 L. EVE 1#1   #2 RHF 1#  WIND 1#2 R. EVE 2#1  Wind 2#1, #2 NECK 1#2  Mouth Chu  This 1#1 LUF 1#2	Pea on Engraved - Bora eck - With Epo	patch on plastron/of File on y painted w	arapace 3rd latural left hile . vigo

\* Gram right up to Bitto See P.I SEA TURTLE TAGGING FORM CAPTURE DATE, LOCATION AND METHOD: AMNAUMA HAND/ 11-25-92 BAY SCUBA PERSON RECORDING DATA: 6K OLD RFL H512 NEW TAGE: RFL TAGE: LFL 4513 LFL TUMOR H514 LHF OTHER SCORE NEW TAGS: STRAIGHT CARAPACE-LENGTH: 45.9 35.6 WIDTH: NOTCH LENGTH: 45.5 CURVED CARAPACE LENGTH: 49.0 WIDTH: 42.5 HEAD WIDTH: MALE, FEMALE OR UNDETERMINED TAIL LENGTH: C RIGHT FRONT FLIPPER WIDTH: SAMPLES COLLECTED: 36.8 PLASTRON LENGTH: 31.0 # WEIGHT:

New engraving H512 noneath

DESCRIPTIVE REMARKS: Did Engravings - Spray painted white

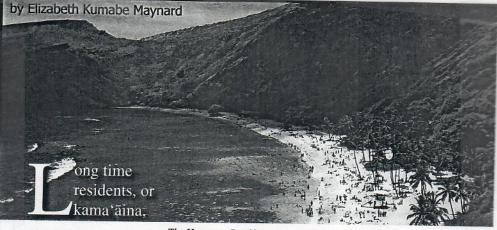
Lots PCA Mouth check with speculium

Engraved 3rd latural right H - (faint to the check with speculium)

New engraving Engraved on 3rd wavesdayiet H51

We (1	7.9	2.7	7.5	3 7 .8 3 .9 3 .9	7 . 7 . 8 . 5 . 5 . 5 . 4 . 5 . 4 . 5 . 5 . 5 . 5									
Curved	: 1				3.9	6.3	6.4	4.7	6.9	54.0	16.0	28.0	30.0	27.0
eng		-	1	1	1	1	1	1	1 1 1	59.0	40.0	46.5	49.5	46.0
Carapace Length (cm) Straight Curved	26.1	27.1	21.8	23.6	22.1	25.3	26.0	22.7	26.1	55.4	37.9	43.5	45.9	43.6
Date 09/09/81	09/09/81	09/09/81	18/60/60	09/09/81	09/09/81	09/09/81	18/60/60	18/60/60	09/09/81	05/20/92	05/20/92	05/20/92	05/20/92	05/20/92
Tag Nos.	5625	5627	5653	5661	5663	5673	5687	5697		н506, н507, н508	H509, H510, H511	H512, H513, H514	H515, H516, H517	H518, H519, H520

## Education at the Hanauma Bay Nature Preserve



The Hanauma Bay Nature Preserve, second in visitor destination popularity to Waikīkī, is the home of UH Sea Grant's Hanauma Bay Education Program.

visiting Hanauma Bay find a different place than they knew forty years ago. They may recall a more rugged beach accessed by wooden stairs or driving down to camp and fish on the beach. Some may recall catching large lobsters and fish before fishing restrictions were enacted in response to the Bay's dwindling marine life. The popularity of Hanauma Bay rose among resi dents, culminating in the closure of the lower beach access road in 1953 due to congestion. In 1967, the Bay was declared Hawai'i's first Marine Life Conservation District in an effort to preserve its marine life with limited early success.

Captured Method

Carapace Length (cm)

Straight

Nos.

Hand/Scuba

0

21

2

45.

42

11/25/92

F18

F17,

In the early 1980s, The Univer sity of Hawai'i Sea Grant College Program (UH Sea Grant) and the University of Hawai'i Marine Option Program hosted a full-day symposium for state resource agencies and the

local community focusing on the unregulated crowds of 10,000 plus daily Bay visitors and their associated impacts on the coral reef ecosystem. Impacts included the physical disturbance of corals and other animals through human trampling, overfishing and pollution in and around the Bay from human urine, pigeon droppings, and humans entering the water and shedding suntan oil. Rampant fish feeding added to the Bay's problems by altering the natural balance among fish species and food resources. Uneaten or surplus fish food contributed to poor water quality and attracted avian and rodent scavengers to the beach park.

A partnership among UH Sea Grant, the City and County of Honolulu, and the grassroots organization Friends of

Hanauma Bay was established in 1990 to address the above impacts. The immediate needs inspired UH Sea Grant to estab lish an education program with a part-time educator and dedicated community volunteers sharing their messages of reef "etiquette" and awareness through portable displays. This partnership has also been instrumental in assisting the administrating city government in understanding how their manage ment decisions impact Bay opera tions and, ultimately, the health of the reef ecosystem. The Hanauma Bay Education Program (HBEP) and its volunteers have grown to be a vital aspect of managing the Bay's visitors and ultimately its

The HBEP uses its Sea Grant network of expertise and research to increase public knowledge

Ka Pili Kai

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(50)

and understanding of Hawai'i's marine environment and issues related to its management and protection. The Hanauma Bay Education Center, now in its fourth year, educates one million Bay visitors annually on marine science and stewardship. One innovative management tool used at the Hanauma Bay Nature Preserve is a seven-minute mandatory visitor orientation video on the basics of reef ecology. This video has resulted in a documented decrease in reef standing and trampling by Bay users.

### **Education for all**

A popular feature of the Education Center is its state-of-the-art education alcove classroom. This classroom provides opportunities for schools and other educational groups nationwide. In 2004, nearly 13,000 individuals participated in on-site HBEP group programs. Of those participants, one-half are Hawai'i residents, predominantly local elementary, secondary, and college students. These programs aim to increase environmental literacy and stewardship capacity of Hawai'i's students. Curricula developed and distributed in these programs also supports and aids teachers in meeting state education content and performance standards.

The HBEP also offers unique outreach benefits to the community via access to the Sea Grant network and associated coral reef and coastal management research. Cutting-edge research programs are showcased in a free weekly evening lecture and film series that attracts residents and interested visitors to the Education Center. Series themes have included marine protected areas and species, coral reef ecology and conservation, aquaculture, humpback whales, and invasive species.

The seminars support the interaction of government agencies, researchers, and private organizations and the community. Often, these sessions provide the speakers with an opportunity to obtain public feedback and discussion. In the past year, 49 evening events were conducted, reaching 1600 community members. The National Oceanic and Atmospheric Administration (NOAA), Northwestern Hawaiian Islands Coral Reef Ecosystem Reserve and Hawaiian Islands Humpback Whale National Marine Sanctuary are strong HBEP partners.

Seasonal Saturday evening fairs at the Education Center are held in partnership with the City and County of Honolulu and NOAA's Hawaiian Islands Humpback Whale National Marine Sanctuary. Fairs are open to the public with night-time beach access. Various agencies and organizations are invited to present activities, presentations, displays, exhibits and craft activities for keiki (children). Fairs are theme focused and have included Marine Mammal

Evening, *Honu* (turtle) Evening, and Our Living Reef.

## **Experiencing the Bay**

The Hanauma Bay Nature Preserve is a truly unique worldwide treasure as well as opportunity. Second in popularity as a Hawai'i visitor destination only to Waikīkī, one-fourth of all O'ahu visitors seek out Hanauma Bay for its spectacular geography, crystal blue waters, and the opportunity to observe and interact with the now abundant marine life. The Bay's visitors are, indeed, delegates from the global community. Presenting science-based environmental information to these visitors offers tremendous potential for enhancing worldwide marine science awareness. The HBEP reaches people who may in no other way, or by any other means, be influenced to consider the impact of human activity on marine ecosystems, particularly coral reefs. The significance of this influence is vast, considering the multiplier effect of Hanauma Bay's globally constituted audience taking this message of marine preservation around the world.

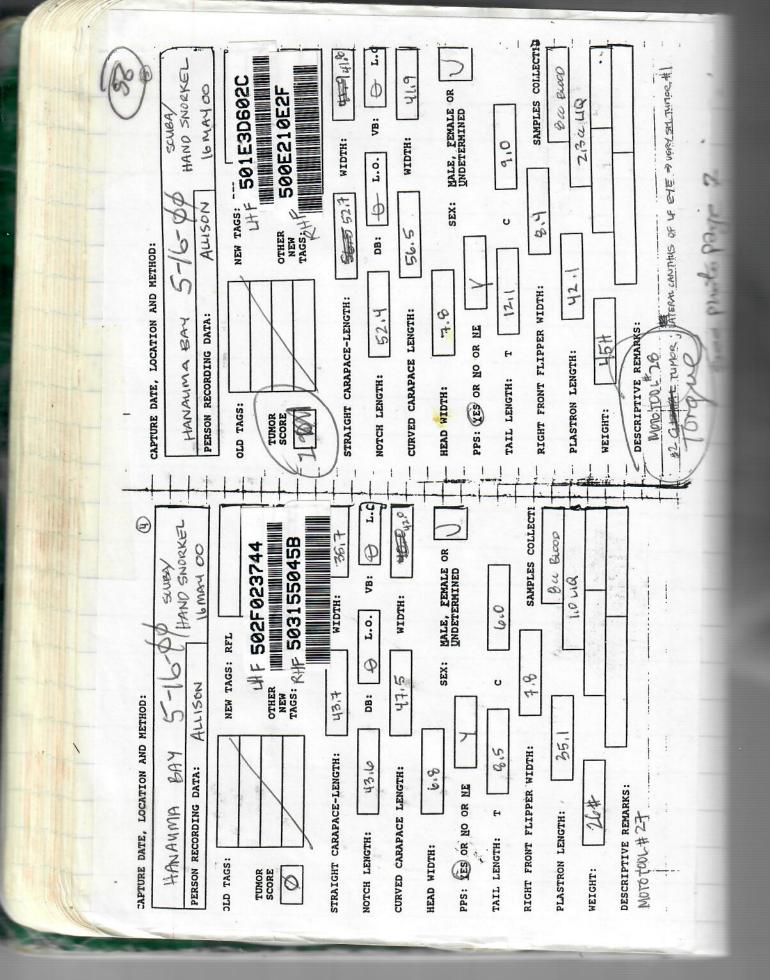
Elizabeth Kumabe Maynard is a regional environmental extension specialist for UH Sea Grant. She holds a master's of education degree in curriculum and instruction from the University of Hawai'i at Mānoa.

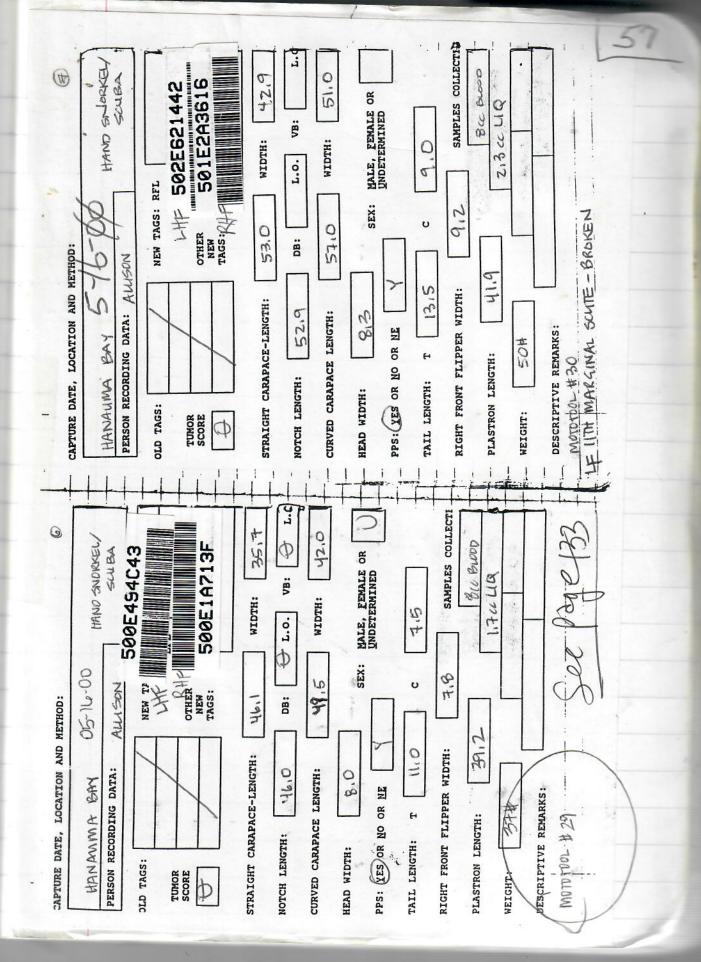
Ka Pili Kai

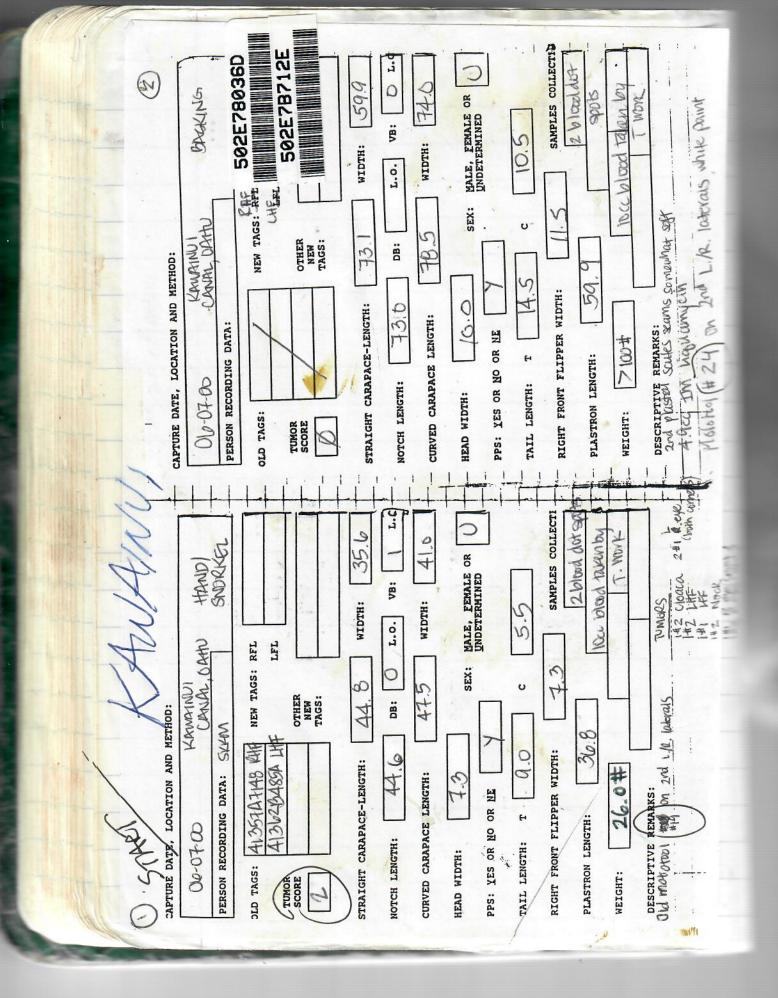
) метнор:	Burjesson 500E1BG361	OTHER SØZFØBGEGS TAGS:	UG, WIDTH: WEER 39,1  DB: L.O. VB: L.G  53,0 WIDTH: U770	SEX: MALE, EEMALE OR O	S SAMPLES COLLECTIVE	Laseal heft & Right
CAPTURE DATE, LOCATION AND METHOD:	Hanauma Bay PERSON RECORDING DATA: L.	TUMOR	STRAIGHT CARAPACE-LENGTH:  L.C  NOTCH LENGTH:  CURVED CARAPACE LENGTH:	9	TIL LENGTH: T () 5	Robust plastion  Robust plastion  PCf bin campine  PCf bin campine  We to to 10 2nd  White Cive 1:54 6
CAPTURE DATE, LOCATION AND METHOD:	PERSON RECORDING DATA:  DED TAGS:  NEW TAGS:	ω <u> </u>	RAPACE-LENGTH: (43)  H: (55,3) DB: (L.o.) VB: (60,0)  PACE LENGTH: (50,0)  WIDTH: (53,5)	HEAD WIDTH:  SEX: MALE, FEMALE OR  PPS: XES OR NO OR NE	RIGHT FRONT FLIPPER WIDTH: 6,8 SAMPLES COLLECTI	Robust Plashand BCA on caraginal BOLO RS.  MOTOPOLIS 2 Md lastend left and RS.  White line 1:54 cannot

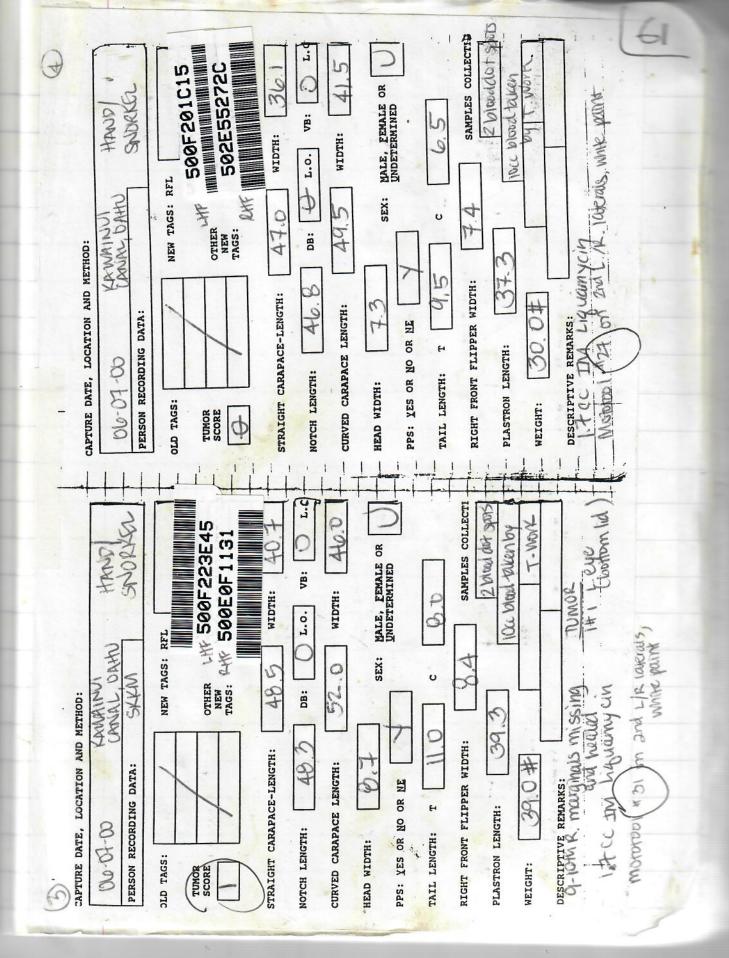
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TUNOR SCORE  TOTAL TAGS:  THORY  SCORE  THORY  SET OF THE STATE  T	STRAIGHT CARAPACE-LENGTH: SD, 2 WIDTH: GO, 1  NOTCH LENGTH: SD, 2 WIDTH: GO, 1  CURVED CARAPACE LENGTH: SS, 3  HEAD WIDTH: SS, WIDTH: GO, 1  HEAD WIDTH: GO, 1  TAIL LENGTH: T   2 O, 2  PLASTRON LENGTH: GO, 2  DESCRIPTIVE REPARKS:  MODEL CONTROL CONTROL  DESCRIPTIVE REPARKS:  MODEL CONTROL  DESCRIPTIVE REPARKS:

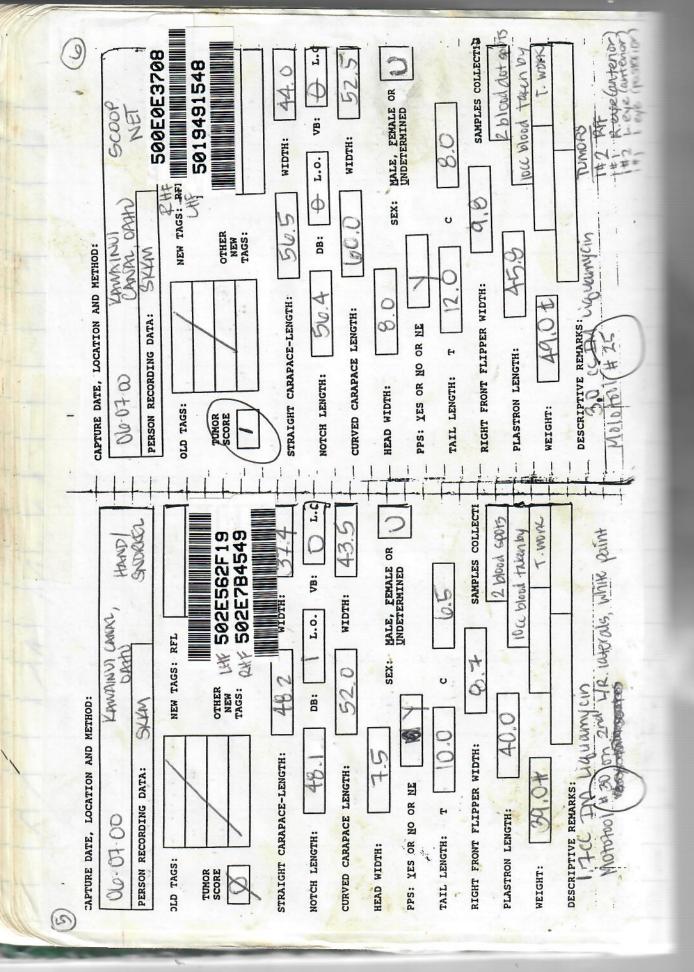
SAMPLES COLLECTIB 41363B6835 413603251F 3/10 Snorkel 53,0 -25-00 MALE, EEMALE OR UNDETERMINED right VB: WIDTH: WIDTH: Tario L.0. 0 NEW TAGS: RF Ľ The 12st central BBriessen SEX: 575 530 υ DB: OTHER NEW TAGS: 0 CAPTURE DATE, LOCATION AND METHOD マ匠ら 77.5 RIGHT FRONT FLIPPER WIDTH: STRAIGHT CARAPACE-LENGTH: NOTCH LENGTH: 52,6 Hanauna Day PERSON RECORDING DATA: PCA ON CATAPACE CURVED CARAPACE LENGTH: 0 5 PPS: YES OR NO OR NE PLASTRON LENGTH: DLASTON 1000 TAIL LENGTH: HEAD WIDTH: WEIGHT: OLD TAGS: TUMOR 0 POSTA SINGLE 4135280F4E 413575545A 413575545A 20-52-40 ロンイニ 5.96 3,44 tand Snorke MALE, FEMALE OR UNDETERMINED moto tool 22 2 and lateral left & night VB: WIDTH: WIDTH: L.0. NEW TAGS: RFI Beriesson SEX: 一 while line 1:5+ central U d OTHER NEW TAGS: DB: CAPTURE DATE, LOCATION AND METHOD: 00 ナナ In 757 RIGHT FRONT FLIPPER WIDTH: 37 STRAIGHT CARAPACE-LENGTH: Bay PCA ON COMPACE PERSON RECORDING DATA: 10 CURVED CARAPACE LENGTH: PPS: YES OR NO OR NE Dlaston robu WEIGHT: 22 ahauma PLASTRON LENGTH: NOTCH LENGTH: TAIL LENGTH: HEAD WIDTH: OLD TAGS: TUMOR 0

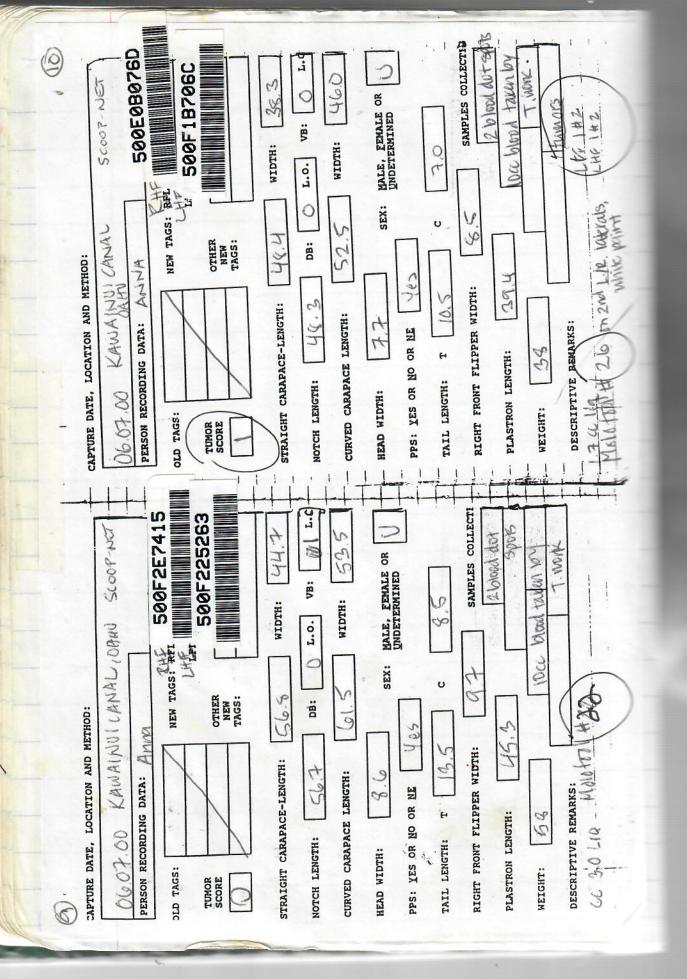


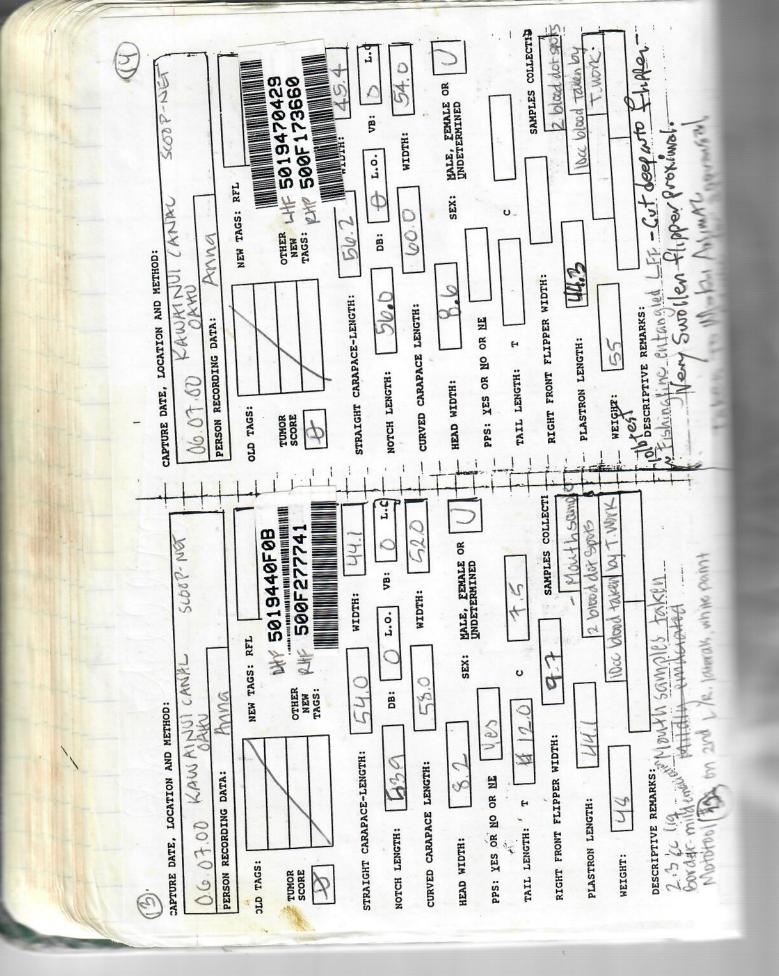


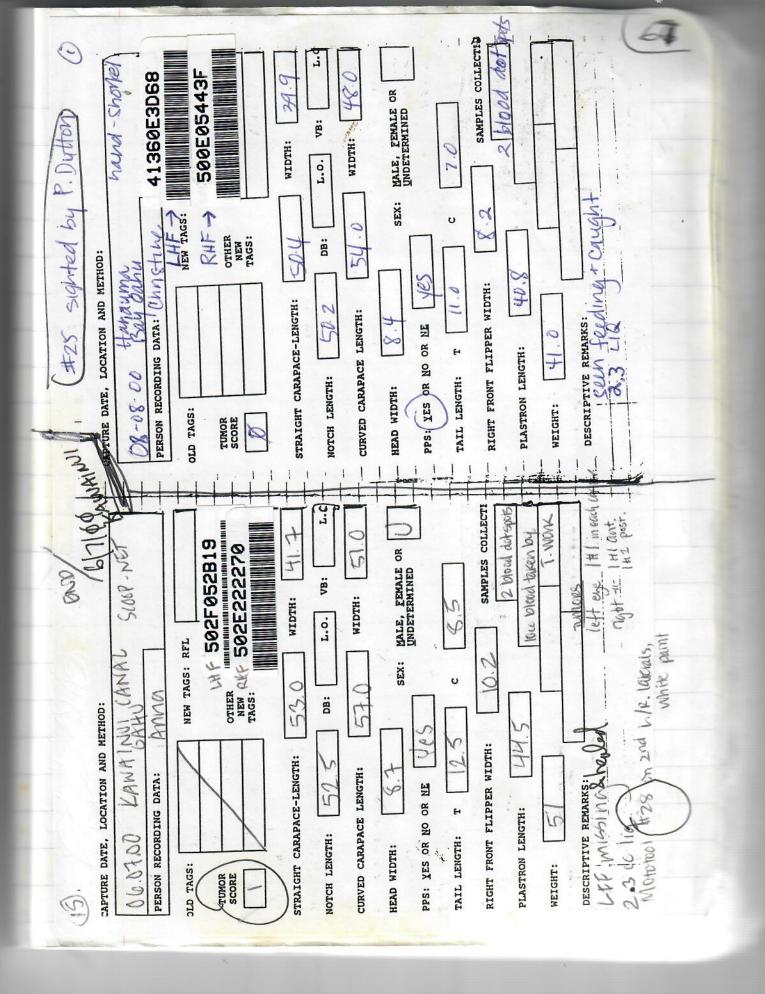












	1 12 1 1 1 1	STRAIGHT CARAPACE-LENGTH: 53.3 WIDTH: 40.6  NOTCH LENGTH: 52.3 DB: L.O. VB: L.O  CURVED CARAPACE LENGTH: 48.0	PPS: (XES OR NO OR NE   VES   WIDTH:   SEX: MALE, FEMALE OR   PPS: (XES OR NO OR NE   VES   C   S O   C   S O   C   C   C   C   C   C   C   C   C	PLASTRON LENGTH: 41.9 schin biopsy on LHF  WEIGHT: 44.0 not sawed  DESCRIPTIVE REMARKS:  OCKIN BIOPSY ON LHF  TO LENDS OF DICKTON  OCKING OF DICKT
# 28 # 28 # 28 # 28 # 28 # 28 # 28 # 28	DESON RECORDING DATA: UNTITLUCE DEPENDING DATA: UNTITLUCE DATA: UNTITLUC	STRAIGHT CARAPACE-LENGTH: 50.7 WIDTH: 40.4 NOTCH LENGTH: 50.6 DB: L.O. VB: L.C.	EMALE OR SAMPLES COLL	PLASTRON LENGTH: 413 2 10000 ACT SOUTH ANTERENT PLASTRON COLD PESCRIPTIVE REMARKS:  DESCRIPTIVE REMARKS:  ALBOM MOTOTON COLD MOTOTON M

CAPTURE DATE, LOCATION AND METHOD: APPLICA BY  3-27-01 Kawain in Canal Hand   Singles  PERSON RECORDING DATA: SME   SGL 423B2B445D	TUMOR SCORE NEW TAGS: RFF HIM WILLIAM SCORE NEW TAGS: RFF TEN TOWN TAGS: RFF TEN THE WILLIAM TAGS: RFF TEN THE WILLIAM TAGS: RFF TEN THE WILLIAM TAGS: RFF T	STRAIGHT CARAPACE-LENGTH: 61.3 WIDTH: 48.3 NOTCH LENGTH: 60.5 DB: 6 L.O. VB: 18 L.O. CURVED CARAPACE LENGTH: 65.5 WIDTH: 56.0	HEAD WIDTH: 8.4 SEX: MALE, FEMALE OR PPS: XES OR NO OR NE Y AKÍA/ < 22.0 LAFC/2(=23,2)  TAIL LENGTH: T /3.0 C 8.5	RIGHT FRONT FLIPPER WIDTH:  SAMPLES COLLECTED  SLOOD 10+5  WEIGHT: (60.0)	DESCRIPTIVE REMARKS: A Raise 1 2 graminent pads Vertral 3 Lat Right Raise 1 2 graminent pads Vertral 3 Lo Ce II O 200 lat. right Thick souths
DS-08-00 Helhaluma Bay Dahy Shorkof Person Recording Data: CEM	TUMOR SCORE  SCORE  TAGS: 4136296710 NEW TAGS: RFL  LFL  LFL  LFL  LFL  LFL  TAGS:  TAGS:	STRAIGHT CARAPACE-LENGTH: 64.0 WIDTH: 48.4 NOTCH LENGTH: 63.9 DB: L.O. VB: L.C.	HEAD WIDTH: [0 3 SEX: MALE, FEMALE OR PPS XES ON NE VES	RICHT FRONT FLIPPER WIDTH: (0.7 SAMPLES COLLECTION LENGTH: 50.8 2 Black Action 18 MEIGHT: 83	Company in Mouth  Mutotoo #21 (old)