2015

2 OF 2

GEORGE BALAZS

-881-641-436541 FFS

881-641-43662 FFS BACKUP

- KAPOHO
- TURKEY
- FP SUMMIT
- KAUAI TUNNELS
- SLP HATCHLING PIT TAGS

caliber®

COMPOSITION BOOK

6-10 APRIL 2015 - KAPOHO

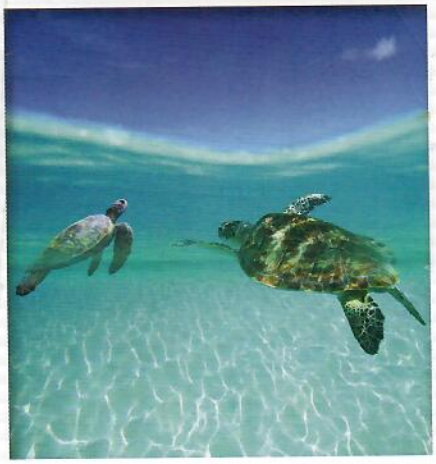
14-26 APRIL 2015 - TURKEY

11-14 JUNE 2015 SUMMIT

14-15 JULY 2015 KAUAI TUNNELS

HOŞGELDİNİZ

WELCOME



AMERICAS • EUROPE • MIDDLE EAST
AFRICA • ASIA • AUSTRALASIA

Wide Ruled | 100 Sheets | 9.75 in x 7.5 in (24.7 cm x 19 cm)

Title	Fall and Rise of the Hawaiian Honu: A 50-Year Witness to Cultural and Conservation Change
Track	II. Effective Conservation and Restoration
Secondary Track	I. Cultural Integration
Affiliations	(1) IUCN/SSC Marine Turtle Specialist Group, Oceania Region, Honolulu, Hawaii, USA
Authors	George Balazs (1) Presenting Linda Balazs (1)
Categories	Marine
2nd Category	Community

Abstract

Seven species of ocean turtles exist globally as descendants of ancient reptilian lineages that have adapted and survived for millions of years. Over the course of human history an array of relationships have developed with turtles, and especially marine turtles amongst coastal and island peoples such as in the Hawaiian Islands. Turtles are woven deeply into the cultural, traditional, and contemporary fabric of humanity with uses ranging from food to fortune telling, pets to funerary. In 2012 Hawaii's green turtles or honu (Chelonia mydas) were downlisted from Endangered to the category of Least Concern following a comprehensive assessment by the IUCN Marine Turtle Specialist Group (see < http://www.iucnredlist.org/details/16285718/0>). Over the past 50 years Hawaii's honu have exhibited new behaviors and adaptations along with an increasing population and expansion into new habitats. These favorable changes have ranged from increases in terrestrial basking to feeding on new types of vegetation, to name a few as witnessed first hand by the authors. Even more beneficial changes and acclimations can be expected in the future, including shifts in nesting to adapt to climate change, as sea turtles have successfully done with resiliency for millennia. In light of their rise to abundance, green turtles in the Hawaii constitute a unique experimental model to comprehensively understand the restoration dynamics of an increasing sea turtle population. Conservation practices in Hawaii can serve as a real-life learning ground for people in other regions striving to save and sustainably use their own charismatic and culturally important sea turtle resources.

AOC AUGUST 2015

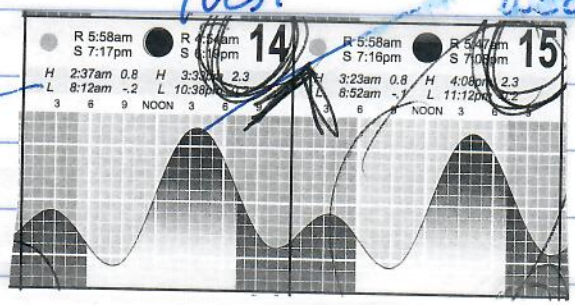
KAUAI 14-15 TUES. Wed. JULY 2015

TUNNELS, KAUAI

Tues. 2.3ft 332pm

wed. Low = 852AM

Low -.2ft 8AM



Low Tide in the Morning - High Tide mid-afternoon.

website → UNDERWATER2WEB@gmail.com

BOARDING PASS

PLATINUM

NAME OF PASSENGER
BALAZS/GEORGE HARVEY

FROM LIHUE KAUAI

TO HONOLULU

HAWAIIAN AIRLINES

CARRIER	FLIGHT	CLASS	DATE	TIME
	190	F	15JUL	522P

GATE	BOARDING TIME	SEAT	SMOKE
	442P	2B	NO

ZONE 1

PREMIUM

ELECTRONIC

P.O. BOX 428, KILAEA, HAWAII 96754

SNORKEL

Hoves Looking 7/14 =

7/15 =

need
✓ PRINT
OBJECTIVE
EMAIL

TUNNELS, KAUAI

7/14/2015 8Am to Lihue w/ Thierry Work &
TUESday Renee Breeden 845 AM Rental car SUV
Chevy to HANALEi - Dive shop (Yellow SUB)
got SCUBA TANKS - SAW LED compact DIVE
light $150. PRO TECH - TECH something 4 C's

TO Hanalei BIG save Market - met DON
Heacock ~ 1030Am - TO TERRY LILLEY
"TRAILER" next TO Hanalei River - kyaks
Rental etc. Mangroves along River. His
~ 2 hour BRIEFING ~~talk~~ & pictures by Terry. His windows shot out
HIS Brother is tope security for military
- Microwave militarized warfare.
- Never worked for anyone for very long
- owned Largest rep. 200 in USA (state?)
- Nat Geo. - Contacted every few days by white House.
- Took Clintons diving
- Can go anywhere in the world way paid free; Teaches little children
- "DARK" something web site about the Reefs. Microwaves
- Been on Kauai 36 years (?)

TRIP BASED ON 3 PHOTO OF TURTLES WITH FLIPPER DAMAGE BY Terry LICLEY - 1) Bonaa exposed Summer 2004;

2)

3)

NO RIGHT RESPONSE

NTN

outs 1 of

14 July 2015 Tuesday ~1:30pm depart HANALEI RIVER
T.L. Zodiac Center Steer ~15' est. length,
Saw Subadult male shortly thereafter. Motored
to off Tunnels - passed by nearby POINT strong
current saw 11 turtles in shallows; 3 tube of
Snorkled inshore ~2 hours fish food seen
Turbinaria present - Algal carpet - Turf.
I Saw 8 juveniles all about same
size - one grabbed & inspected - let go -
Nothing of interest - good body, All
have Coralline algae & fleshy algae as
NO FRIGHT RESPONSE shell (thin layer - in shallows lots of
saw) one captured to boat - biopsy
of hind flippers "white small spot" by TV.
Blood drawn. Weighed 2 - lbs
~5pm me to shore - 4 grey snorkelers
more - cleaning stations

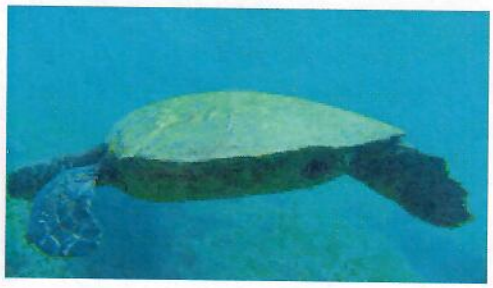
Dropped off in strong current of Sandy
Point - saw 3 subadults up close
NTN Robust - waiting in current for balls
of green algae (Turf or?) sweep along
on bottom to eat - saw ingestion.
No fright but as easy to approach.
outside of atoll Saw 3 up close. Reminded me of Midway -
Sodium collection free in deep holes


Sacred Springs
Polihale Heiau
Polihale State Park
Waimea
Waipo'o Falls
Pu'u Hinahina Lookout
Po'omau Stream
Koaie Stream
Waiaulua Stream
Waimea Canyon Lookout
Waiala Stream
Canyon State Park
Waimea Canyon
Waimea River
Barking Sands Pacific Missile Range Facility
MĀNA
Mānā Plain
KAUMUALI'I HIGHWAY
Kōke'e Road
Waimea Canyon Drive
Mokuone Stream
Makaweli River
POKI I
552
lifeguard
Kekaha Beach Park
Kekaha
Kekaha Beach
Kaua`i Veteran's Memorial Hospital
550
Captain Cook Monument
Kikiaola (Menehune) Ditch
NONOPAHU
Waimea
Waimea State Recreation Pier
Russian Fort Elizabeth State Historical Park
Lucy Wright Beach Park
Waimea Bay
Po'o Pt
50
KA AWANUI
Ho'amuanu Bay
Pākalā Beach
KAUMUALI'I HIGHWAY
KAUMAKANI
6
`Ele`ele
Hanapēpē
lifeguard
Salt Pond Beach Park
PORT ALLEN
4
Hanapēpē Bay
Port Allen Airport
Pū'olo Pt
Waiahuwa Bay
Weli Pt

14 JULY 2015 Tuesday
430-
~5 pm I walked Hanalei road toward Hanalei Bay ~ 3 miles ~ 1.5 hours. 2-lane narrow reminded of Paea 1964 - Lots of lush vegetation, close to ocean - high peaked mountains close by - Lots of For Sale Signs - "TVNC" numbers - top codes?
Hot! Bed & Breakfast (?)
Renee picked me up - then we spent 1.5 hours looking for TW - he fell asleep at dirt road park w/ "PRIVATE" sign at entrance. TO Tevy's Then to KAUAI Club Hotel - IN Princeville
170° night Party; Dinner at restaurant in town; Bed ~ 11 PM, up 6 AM -
15 JULY 15 Breakfast ~ 7 AM Restaurant.
Wednesday ~ 830 AM TO T. L. TW & him took 2 odia to Tunnels - Renee & I drove to Tunnels. HOT! walked beach to sand point strong current area, one subadult showed up ~ 10 AM but didn't stay. ~ 1030 AM 3 subadults seen but in "pocket" area sand bottom not in Current channel. Presumed they were feeding same way pilots on bottom (collecting?)
Renee / TW / Scott BACON T. L.
Snorkeling - looking for turtles w/ legions.
END ~ 12 Noon. Renee & Scott Drove

TunHonu7-10-
589K

7/10/15



TunHonu7-10-
435K

TunHonu7-10
387K

TunHonu7-10
533K

←

TunCoral7-1(
709K

TunCoral7-1
586K

10 attachments

7/10/15

TunHonu7-10-15
646K

TunHonu7-10-15b
513K

TunHonu7-10-15c.jpg
250K

Glad you are coming over Tuesday with the USGS to check out the turtles at Tunnels and hopefully get some blood samples!

I have been diving there every other day documenting the damaged turtles. Yesterday at 6:00 PM I counted 9 turtles in very shallow water feeding within one hour. All were females. So far the sex ratio at Tunnels has bee 95% females!

Out of the 9 turtles 7 were young juveniles. All 7 had an excessive amount of algae on their shells and skin. Three had torn flippers and chipped shells.

One adult was missing a single flipper.

In the last 2 years I have not seen or heard of even one large tiger shark hunting at Tunnels and I have done over 80 dives there. I also have never seen a monk seal bite, or even harass a turtle at Tunnels. All of the dolphin have left the area and several of the younger reef sharks have died. The big female Galapagos shark has also left the area.

About 90% of the corals are dead or gone from the inside reef where these turtles congregate.

I really think this is an engineering problem, not a biological problem as the entire ecosystem here seem like i suffering from constant physical damage as if someone is beating up the marine life with a big hammer.

Since we know the military is using Tunnels as an electronic and sonic war zone seems like this may be doin the damage but I hope that the study will prove this one way or another. Do you know if the USGS has sonar monitoring equipment we could use at Tunnels? Seems like this would be good to do along with blood test on turtles.

I will go out several more evenings to document the turtles before you get here on Tuesday!!

Do you know if I am going to actively help you physically manage the turtles or just locate them for you and y team? Not sure how your permits work. Also do you mind if I video the study as we did for our past coral studi we did here on Kauai.

By the way not one of the turtles I have seen at Tunnels has tumors. I have seen over 300 turtles there. I hav also not seen even one turtle on the south side with shell and flipper damage like we see at Tunnels but many them have tumors. Just some strange facts that do not make much since.

7/15/2015 Wednesday Need SAM LEE
DON MOSES

Back to T.L. Lunch at "Sushi Gil"
BACKNOTE: Phoned DON at Sandy Point r
Tunnels gets hit 60'+ waves every few years. Most of reef coralline algae.
Turtles hand-passed for food.
Called Mimi OLRY - Monk Seal
V23 2-3 times a week Seals
at Tunnels - Sign holder - ~7 signs
each; T.L. video too close to Monk Seal -
OLE visited him;
NATI Geo. vet series - Video of
cutting line off turtles OLE visited -
unknown if citation given.
My view Good resting beach along Tunnels
5M above sealevel.

7/16/15 Another Mimi OLRY telecon -
JUSIN/VIBECKE & Doug Perrin
Call from EMMA FFS AT 450. Re: 2007 Monk Seal/JUV
Turtle interaction.
~3pm Packed gear & drove to Airport.
522 pm Flight to Honolulu. Home
~7pm

X TO X
~400M
INSHORE JUV.
FEEDING -
OFFSHORE
CLEANING
STATION

WALK
TO
DIRT ROAD
PARKING

TO SANDY
POINT STRONG
CURRENT AREA
SOBADULTS
FEEDING ON BALLS
OF ALGAE
(COLLECTED)

O = HAENA Beach Park

7/16/15 NOTES

KA HONU Video

HANAUMA BAY

- shells "plastered" w/ Coralline Algae
- SKIN Coated w/ red Algae
- ~ 20 years diving w/ them
- ~ New Growth at seams shown
- "Can swim upside down"

Turtle Behavior

- Many bang in edge of shell
- Lot of dead coral shown
- ~ BASKING scene short
- ~ Turtles keep reef clean of algae
- ~ "Worn coral smooth" - 2 Big ones (Hanauma Bay) (some place else)
- 2 turtles - Big chip in shell of one.

Cleaning Station

- 4 at are U - Mid water - butt IN AIR, (RFF for White Spot)
- "Fish have sharp teeth - Bit my ARM pit TORE out chunk of SKIN"
- KNOW of 20 cleaning station
- 99% can hang out w/ TURTLES AT STATIONS

Honu Feeding

- MOST Algae 5-30' water
- Great Body Condition,
- "Get Tumbled on reef & Coral
- Wrasses follow them"
- Feeding at night at TUNNELS

need see
sale of
KA HONU Underwater2web.com

"Off Grassy spot (Sand) on Maui
Beneficial to reef - clean algae off
reef. Reef dying Kauai - so there
is more algae for turtles.

Honu (hawksbill)
3000 hr diving (scuba/snorkel)
only seen a dozen. No hawk seen
at cleaning station.
Shark Bit surfer by accident

Honu Health
Fish hook removal
Can Attempt Removal "Good Samaritan Clause"

Blind "Turtle contracted Cyano bacteria disease"

Honu and Humans
"off ESA will be
Afraid of people - won't see them.
important for tourism."

"Tunnels Reef"

Honu Reproduction
Hanalei River
Breed out in ocean or
Breed in River

even small ones can be sexed.

END

"Picked Clean"

Weed

- Send to T. Lilley (Algal ball foraging / Tunnel ARRAY
- Send to Scott BACON 3 photos ff, fffer damage
- MTSG listing of pilcherpaper
- T. Lilley web site VIEW year rotation
- ALGAE Sample TO Dennis Russell MICRODICTYON / JAPONICUM
- DON Heacock lunch Sam Lee / Don Mosas
- X - Doug Perrine (weed) - YouTube + EMAIL
- ~ Print & tape EMAIL
- Tunnels Reef pictures TO KY
- X - Rick Gregg - coralline ALgae (steve Dollar)
- Midway Turtle - TRIXIE - photos

≡ Midway January 22, 2004

PRE-L

1
2
3
4
5
6
7

Excellent x fe
body

PRELIMINARY SUMMARY of PROMINENT FINDINGS (NOT PRIORITIZED)

1 — TUNNELS Reef and adjacent Habitats VISITED HAVE AN ABUNDANCE OF Readily viewable green turtles.

2 — THIS AREA is extensively used for human recreation for snorkeling - including and dive tour scuba and snorkeling. The Turtles DO NOT VIEW people as predators.

3 — The turtles are comfortable in the proximal presence of swimmers.

4 — Juveniles forage on Pterocladella lushly growing in holes/crevices - elsewhere ~~this~~ algae is sparce.

5 — Juveniles need to work hard to graze on the Pterocladella.

6 — The Juveniles seen were in good Robust body condition - with one exception (Score 1 mild emaciation)

7 — Nearby there is a shallow 1 meter Sand-bottom area close to with strong current east to west (Marked danger by lifeguard Flag) Subadults forage here in a unique foraging STRATEGY manner - balls of green alga are swept along and the turtles eat them as they pass by requiring Reduced ENERGY to obtain prey upon. NOVEL First seen - Reminded me of Midway codium

In excellent body condition

3rd Anniversary

- Pilches

WEB - WWW.KAUAICORAL.COM
EMAIL - SCOTTBACON@KAUAICORAL.COM
PHONE - 808-482-0683

Scott BACON -
wife is Hawaiian - family name Goo
They ate turtles in the past when legal
would like to do so again.
Be dive sites to have a tour permit
are TUNNELS & POIPU. Head of
Scott saw seal at Poipu put juvenile
turtle in its mouth. Turtle was alive
but not highly active (people thought it was
playing with the turtle).

Russell Ed Misaki, Molokai

They had saw flippers more

VIDEO

How to (dress)
Clean a Turtle

8 – Reef is primarily coralline algae w/ low "carpet" of fleshy algae. Areas of substantial TURBINARIA seen. Dead clumps of true coral commonly present.

9 – DON HEACOCK says TUNNELS reef hit by 60 footers surf every few years – slams the corals

10 – NO sign of FP on any turtle seen (None said in KA HONU video);

11 – NO turtle seen with any lesion like ones shown by T.L. consisting of 3 photoed turtles.

12 – MONK seals use the TUNNELS Beach 2-3 times a week. T.L. had one hug his camera (?)

13 – Turtle with Bones of Flippers showing WAS IN 2014 SUMMER of TURTLES.

14 – THE 2-DAY STUDY WAS FOCUSED Military The Veracity of Microwave production IMPACT TO REEF ECOSYSTEM WAS NOT POSSIBLE NOR APPROPRIATE TO Address.

15 – NICE NESTING habit exists AT TUNNELS Beach w/ SAND ELEVATION TO ~ 5 meters vegetated IN LAND.

16 – ALL turtles seen had appearance and behavior of health. ALL were IN A NORMAL Hawaii condition of having resided Neritic for > a few months HENCE had CORALLINE & fleshy ALGAE ON BODY & MINOR

16 CONTINUED NICKS and contusions to HARD PARTS. NEW RECRUITS FROM pelagic habitat undoubtedly "convert" rapidly from clean individuals to the neritic body condition

17 — SOLAR RADIATION was intense. Water temperature closer to shore over the reef was warm - estimated 27°C, while farther out such as where ZODIAC anchored estimated to be ~ 26°C

From: honu world [mailto:itsahonuworldinhawaii@hotmail.com]
Sent: Sunday, July 12, 2015 8:27 PM
To: Thierry Work
Subject: Kauai plan to achieve the goal?

Thierry I did some packing today and that caused lots of *thinking* during my decision-making of what to take. Thinking that involved mainly questions. Important ones.

1) Before we have a fieldwork plan of attack, we/I need to know the goal. I presume the goal is to test the hypothesis "There are injured sick and/or abnormal turtles at the study site- and that these turtles are externally and behaviorally identifiable."

2) If the above is correct then the goal is to observe and capture such turtles for close inspection, weigh/measure, and biopsy and bleed.

3) At this point maybe it's best to say what is Not the goal of the trip. That is, it is not to undertake an ocean-capture study of any and all turtles we encounter- such as we do in a day of work at Kawainui or Hanauma Bay.

4) Why not do on Kauai as we do at Kawainui etc.? Answer: Insufficient Personnel and Gear. We don't have anywhere near enough of either to do this safe, sane and professional. Rounding up inexperienced people on site to do the job(s) holds high potential of disaster for the three of us as feds. The risk wouldn't be worth it- for example this guy Terry may have invited the news media and other people that 'think' as he does. No one likes the feds- not even Don Heacock- and I don't blame him/them for this view. Like it or not, we are the feds.

5) The solution as I see it is to 'surgically' catch turtles that have some/any appearance of a problem. The solution also, as I see it, is to catch in the shallows- shore based- using a scoop net and tangle net- if at all feasible (and I suspect it will be at high tide). All other turtles- scuba snorkel etc- would be counted/tabulated but not captured as 'no sign of problems'.

6) There are also some significant fundamental logistical practical questions on my mind:

-We arrive Tuesday morning. We can't check in to the hotel until 2pm or so (unless Renee arranged otherwise?) We go to the study site with all our gear in the car. How close to the study site can we park the car? Clearly we can't leave all our gear in the car- unattended- lest we end up having theft of everything.

-Wednesday the hotel check-out will be at 12 noon, but we'll be at the study site. So we check out 7am or thereabout? And take all our luggage with us- same problem of security in the rental car. We work until the afternoon then no place to shower, change clothes, pack gear, etc. before going on our flight.

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7) How to solve #6 above? Answer: Stay two nights.

8) I've really not gone on any field work with you where you were the lead, the planner/executor/organizer of it all. So this will be a learning experience for me. Please be patient with me. Mahalo, see you at 1245pm lunch tomorrow. gb

Date: Thu, 16 Jul 2015 22:26:27 -1000
Subject: From George Re: Many thanks to everyone for their participation
From: george.balazs@noaa.gov
To: thierry_work@usgs.gov
CC: koadonheacock@yahoo.com; underwater2web@gmail.com; scottbacon@kauaicoral.com; breeden@usgs.gov; itsahonuworldinhawaii@hotmail.com

My (George Balazs) counts on July 14th counts, with decent visual exams of each turtle for lesions and anything else noteworthy, consisted of 8 juveniles inshore at Tunnels (including the one sampled on the boat), and 3 sub-adults in the strong current of the sandy channel. Except for the mild emaciation and small white spot on the juvenile brought on the boat, all turtles seen by me were easily within the spectrum of normality for Hawaiian green turtles. Furthermore, except for the one turtle brought on board, all appeared to be in very good body condition. The one brought on board was mildly emaciated.

Of the 8 turtles seen inshore, I can't be positive that double sightings weren't made- that's a possibility. For the 3 sub-adults in the strong current, I'm sure all were different turtles.

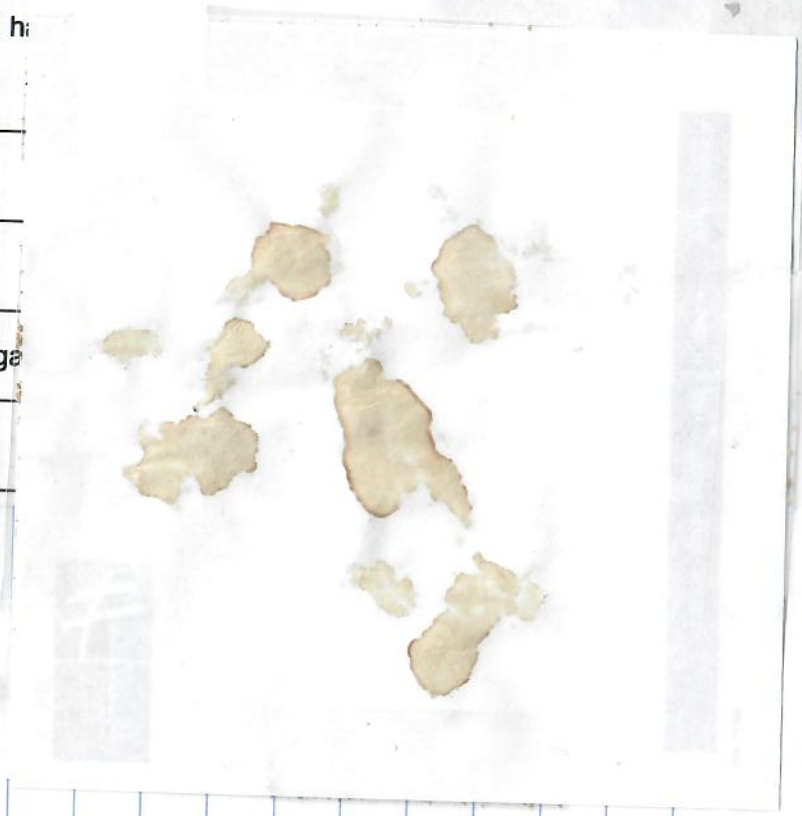
I have just spent time on the web looking at images and videos of turtles at Tunnels. I examined by this route about 15 turtles, likely all different turtles. Nothing out of the ordinary was seen.

I also purchased Terry's DVD Ka Honu and watched it this afternoon, all of the many turtles in this excellent videography were in the normal range (except for the few shown at Poipu that had FP, and the ones with a fishing hook/line). Best Regards, George

Just a quick email to thank everyone for their efforts in the last 2 days, and for Terry Lilley kindly offering the use of his boat and guidance on the reef. We will be processing the samples over the next few weeks and I will copy the final report to everyone.

For the record, here are the counts Renee and I h

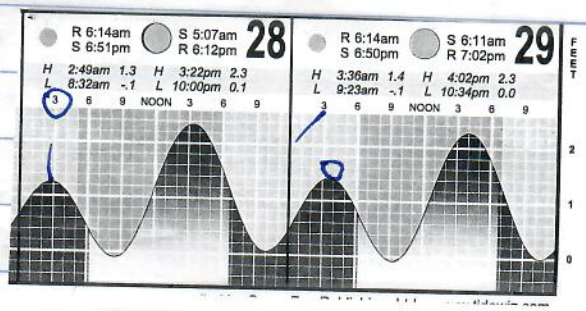
1.	Tunnels near shore
2.	Current (where turtles hang out to eat alg
3.	Cleaning station



KAWA'ALOA

AUGUST 2015

Date	last nest
1986	9/18
1987	
1988	8/29
1989	
1990	
1991	9/1
1992	7/24
1993	9/2
1994	
1995	8/4
1996	7/18
1997	9/2
1998	
1999	8/29
2000	
2001	8/20
2002	
2003	8/22
2004	9/25
2005	9/7
2006	9/20
2007	8/30
2008	9/13
2009	9/10
2010	9/17
2011	9/4
2012	8/24
2013	8/26
2014	8/24



29 JULY 2015 PIER 38 EXTERNAL REVIEW

Wednesday 830AM

Dave Helwig - CHAIR

"Lot of informatin to cover"

ANNE Garrett -

Foraging / invasive algae

Ce connectn TO BAs

* Gencwoff et al, statement

"INTRO" Todd 1978 - ??

1981 MTRP

2003 became Science Center

2005 - 2 programs

2011 FP

2013 combined into one

2015 Todd Leader "new program"

" " 827K ANNUAL

D--

SB TALK AT IRC - public helping turtles

supports products - ie publications

Poc. workshop - need group photo

LAILA need TRAINING video Butcher + stuffing

LANAI - strand coverage

"promote private sector RehAB"

How many? GO BACK after Release

TODD Western Pacific 7/29/2015 Wednesday

"MANDATED"

Book of Howell — FRANK LV JAPAN HAWAII

A. SAMOA How about SAMOANS?
MARIANAS
GUAM
CNMI

105pm SHKM - "DATA MANAGEMENT PROGRAM"
DB III 1992; MS Access 2013; ORACLE 2018-Current

GB - Grasp, remember, understand hence explain the overall Picture.

Rick ____?

Todd Summary 250pm 571 PAGES

Doug Demaster *

"Rebranding of program to show to show multitude of research throughout PIR."

3:18pm PUBLIC ASUKA - Comments

SAT Send statement TO ROBIN

7/30/2015 Thursday BYCATCH

need PP

FP overview opening; ALVIN opening POUNDNET JAPAN; JOHN WANG Excellent Presentation; "GILLNETS BAJA & INDONESIA

Seki - #"HAWAII Sea Turtle Live

TOSADA - #1M Sea turtle LL observer (costs 6M)

"Rapid Assessment"

"Very well-established relation w/ Fishers

"ANIMALS Accomodate" (Acclimate) SCIENCE BY CRISIS

SPECIES IN SPOTLIGHT" Recovery CRITERIA BALAZS LAST WORD

N=35

KIANA OFFSPRING

GS LP HATCHLING GS LHF

7/14/2015

KIANA TOTAL =

4C49565114

4C497C682B

4C49591648

4C4976426A

4C497E5077

4C4A285844

4C4A047C11

4C4B132427

4C4B1A591F

4C4A03250C

4C4946034B

4C497D741D

4C4A6B7409

4C4B111609

4C49731162

4C4B150176

4C4A6C1C4A

4C4B18355E

4C49787D60

4C49525D44

4C49777C6B

4C497E3534

4C4A620E3C

4C4A495B31

4C4B0D4B46

4C4A562D5F

4C4B1B7F26

4C4A026E30

4C4A770B71

4C4A045743

4C49771E25

4C4978476F

4C497D4C26

4C49745F0C

4C4A095B50

8/31/14 SLP HATCHLINGS N=32


442C4A6D62


4C3B53267E


470C77204A


4C3B500B71


470A762D0A


4C3B4F5140


47097F634B


442C741444


470D253C66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N=34 10/27/2014

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SLP HATCHLINGS


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BALTIMORE PIT POSTEE - 866
(TOTAL 2010, 2011 & 2012)

2013 = 562

2014 = 320 + 70 = 390
THIS BOOK
FOUND IN 2015 BY JEFF

2010, 2011, 2012, 2013 & 2014 = 1818
TO date

SEPTEMBER 30, 2012
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HONOLULU, HAWAII 96825
TEL. 808-395-6409

GEORGE H. BALAZS
IUCN MARINE TURTLE SPECIALISTS GROUP
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Hong Kong Cellular 852-54862320
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R.I.N. NOAA-NMFS-2012-0154
OFFICE OF PROTECTED RESOURCES
NATIONAL MARINE FISHERIES SERVICE
1315 EAST-WEST HIGHWAY
SILVER SPRING, MD 20910

I ATTEST TO THE FOLLOWING DIRECT PERSONAL OBSERVATIONS, SUBMITTED HERE AS TESTIMONY BASED ON A SIGNIFICANT SPAN OF TIME – NEARLY 48 YEARS – 1965-2012 LIVING IN HAWAII AND DEVOTING ATTENTION, AS AN ASTUTE OBSERVER IN, ON, AND BY THE OCEAN. DURING THE MID-1960's TO THE MID-1980's IT WAS UNCOMMON TO EVER SEE GREEN TURTLES WHEN SNORKELING, SCUBA DIVING, BOATING, OR WALKING ALONG THE SHORELINE. STARTING IN THE LATE 1980's AND EARLY 1990's SIGHTINGS OF TURTLES INCREASED PROMINENTLY – INCLUDING THE OCCURRENCE OF TERRESTRIAL BASKING. BY THE MID-1990s THROUGH

PROMINENTLY - INCLUDING THE OCCURRENCE OF TERRESTRIAL BASKING. BY THE MID-1990s THROUGH TO THE PRESENT, WITH INCREASING FREQUENCY, IT HAS BECOME COMMON TO SEE TURTLES. MY OBSERVATIONS ARE APPLICABLE TO THE HAWAIIAN ISLANDS OF OAHU WHERE I LIVE, AS WELL AS MAUI, KAUAI, LANAI, MOLOKAI, AND THE BIG ISLAND OF HAWAII (INCLUDING EAST HAWAII AND THE KOHALA/KONA COAST). BY GREEN TURTLES BEING "COMMON" I MEAN WIDESPREAD, GENERAL, ORDINARY, OF FREQUENT OCCURRENCE, AND USUAL.

GEORGE H. BALAZS

George H. Balazs

Protecting Maun

NOAA's proposal to expand a designated marine sanctuary is unnecessary

By Judy Sobin

Judy Sobin is a Hawaii Kai resident, real estate agent and stand-up paddler and boater.

This past Saturday, my family and I participated in a sign-waving demonstration to inform our community about NOAA's Office of National Marine Sanctuaries (ONMS) proposal to make Maunalua Bay a designated marine sanctuary. I and many others found out about this proposal only two days before the demonstration. I learned that the proposal would impact the entire shore between Makapuu and Waikiki; there could be restrictions on recreational activity throughout these areas.

Our family members are surfers, fishermen, boaters and environmentalists. We are intimately connected to and respectful of Maunalua Bay and Oahu's entire south shore. While establishing a marine sanctuary seems benign on its face, perhaps even a good way to preserve our ocean resources, the restrictions this plan would place on our quiet enjoyment of our ocean resources would be much too onerous and entirely unnecessary.

How could this vast change even be a proposal with so little information to the community?

I am a Hawaii Kai resident, Kamiloiki Elementary School Community Council chairwoman, a real estate agent, a mother and grandmother, a stand-up paddler and boater — and had absolutely no clue about this proposal until last week.

Here's what I found on the ONMS website:

The sanctuary nomination process is intended to focus on nominations generated "collaboratively by communities and coalitions of interested parties." The nomination must be posted in full on the ONMS website. But, I have found no posting of any nomination to assign any area in our islands as a marine sanctuary.

If there has been a nomination of a Hawaii sanctuary, the process in this community has been the opposite of collaborative. Instead, the frustrations of a relative few who have been unwilling and unable to engage the larger community in their vision for Maunalua Bay are abusing the process and manipulating NOAA to fit their own ends.

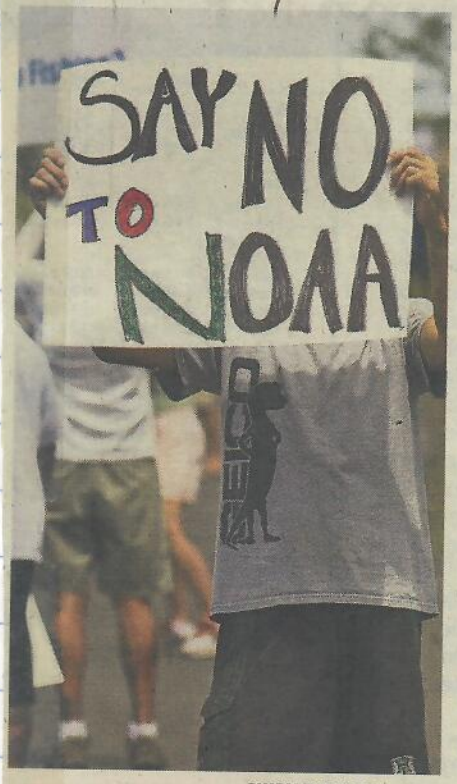
The ONMS website lists six steps for the nomination process:

>> The community nominates after developing broad-based support. If there has actually been a nomination in Hawaii for any site including Maunalua Bay, it has not been developed with broad-based support.

>> A formal request is made to NOAA and is posted on the ONMS website. "All nominations will be made publicly available on

ailua Bay

6/18/2015 HSA



CINDY ELLEN RUSSELL
/ CRUSSELL@STARADVERTISER.COM

Hawaii Kai residents stood along Kalanianaole Highway to protest a proposal to create a special sanctuary designation for part of Maunalua Bay.

the ONMS website." There is no nomination that has anything to do with Hawaii on the website.

>> NOAA reviews the nomination for sufficiency against the criteria and management considerations established by NOAA.

>> Nominations NOAA determines to be sufficient will then be reviewed against national significance criteria.

>> Management considerations cited in the rule are then reviewed.

>> If each of these steps is successful, the site is added to NOAA's inventory, allowing it to designate the area as a marine sanctuary.

I believe that our East Honolulu community — like most communities in Hawaii — has very little knowledge about this marine sanctuary nominating process. Where did this June 19 deadline for public comment come from? How can we get answers? How can we trust an agency that does not follow its own administrative rules?

Maunalua Bay is our treasure and our playground, and we take good care of it. We are respectful. We take only the fish we eat, we care for the reef and we get along with each other. We already have rules and regulations that maintain the sanctity of our bay and we follow them. Our state Department of Land and Natural Resources enforces these rules, and we recognize and respect their authority. For many of these officers, protecting their ocean is more than a job; it is their passion.

We already have a sanctuary at Maunalua Bay. This further designation is unnecessary and unwanted. The nomination should be rejected as it does not have broad-based support and would hurt the very community it is attempting to help.

會議流程

6月15日(星期一)		
間	題目	講者/主持人
9:00	現場註冊，報到及領取會議資料	
9:25	開幕式	程一驊 教授
9:30	合照	程一驊 教授
10:10	臺灣海龜保育現況	農委會林務局保育組 管立豪組長
10:25	茶敘	
11:05	Sea Turtle research in Taiwan	程一驊 教授
11:45	To be determined	Dr. Nick Pilcher
13:00	午餐	
13:40	Historical review of Japanese nesting beach research of loggerhead turtles by volunteer	Dr. Kamezaki Naoki
14:20	惡東綠海龜增殖放流及衛星追蹤	古河祥 局長
15:00	Satellite-derived effects of artificial lighting on sea turtle nesting patterns in Florida, USA	Dr. John Weishampel
15:15	茶敘	
15:55	To be determined	Dr. Yoshimasa Matsuzawa
16:35	The Study of Sea Turtles Through Bio-Logging Technologies: Lessons Learned And How Turtles Can Profit	Dr Sandra Hochscheld
17:15	Bio-Logging studies of loggerhead and green turtles migrating to a temperate habitat of the western North Pacific Ocean	Dr. Katsufumi Sato
5~	第一天會議結束	

6月16日(星期二)		
間	題目	講者/主持人
9:40	Variations in migratory behavior and life history within Japanese sea turtle nesting populations\	Dr. Hideo Hatase
10:20	Florida, USA Sea Turtle Research at Loggerhead Marinelife Center in Juno Beach, Florida, USA	Mr. Adrienne McCracken

10:35	茶敘	
11:15	Sea Turtle Rehabilitation at Loggerhead Marinelife Center in Juno Beach.	* Ms. Nicole Montgomery
11:55	Sea turtle stranding network in Taiwan	曾鈺琮 先生
12:00	閉幕式	程一駿 教授
午	會議結束、午餐(餐盒)	

NMONTGOMERY@MARINELIFE.org

故本研究團隊與美國國家海洋暨大氣總署(NationalOceanic and Atmospheric Administration,NOAA)Goerge Balazs 合作,利用衛星追蹤技術與跨國合作方式,以聚酯樹脂將衛星追蹤器黏附於龜殼上, 並以玻璃纖維布加固(圖6)。聚酯樹脂在固化時產生的熱遠低於其他 樹脂黏合劑,所以不會對海龜造成傷害。

Therefore, we cooperate with George Balazs (NOAA) to using the satellite tracking technique and international cooperation method to trace the turtle. We will use polyester resin and glass fibre material to attach the satellite tag on the turtle shell....(describe the method, emphasis on "no harmful to the turtle")

from Robert LO Liuchiu Proposal 2015

6/17/2015

Laniakea has ties to ancients

The traffic barriers at Laniakea are coming down.

But let's not be reckless in forcing a realignment of Kamehameha Highway that will adversely affect the significant archaeological and cultural features mauka of the highway.

These features include three documented heiau within the area of potential effect, along with numerous platforms, terraces, walls, burials, enclosures and modified outcrops.

Our ancestors created this cultural landscape as a physical expression of their ceremonial practice, settlement patterns and long-distance voyaging and navigational knowledge.

Circuit Judge Gary Chang upheld public access to our beaches under Hawaii law, but let us not forget that kanaka maoli cultural resources and customary practices are also rightfully protected under numerous federal and state laws.

Laniakea remains a tangible reminder that kanaka maoli knowledge, practice and values are an integral component of the North Shore community. We protect what we value.

Let's navigate forward with courage and conviction to protect this rich legacy for current and future generations.

Malia Evans
Waialua

Keep Monsanto running scared

Monsanto in Hawaii is running scared ("Monsanto moves to remold image," Star-Advertiser, June 12).

It's in damage-control mode here and elsewhere in the world. With total assets of $22 billion, it can afford an attempt to remold its image. Is the issue really GMO? No. It's pesticides and herbicides, Monsanto's bread and butter.

Remember Heptachlor? We were told that the insecticide was safe, if used properly. It wasn't.

Heptachlor has a long life span, like Monsanto's highly soluble glyphosate (Roundup).

GMO crops were created to be resistant to Roundup. There lies the problem: possible overspraying, soil and water table contamination, residue in the air and in our food.

At what expense to people's health does the claim of job creation and favorable economics prevail?

Please read up on Monsanto and draw your own conclusions.

Jon Norris
Kapahulu

Medical test reveals exposure to viruses

The new procedure can track all contact with tiny pathogens

By Denise Grady
New York Times

Using less than a drop of blood, a new test can reveal nearly every virus a person has ever been exposed to, scientists reported Thursday.

The test, which is still experimental, can be performed for as little as $25 and could become an important research tool for tracking patterns of disease in various populations, helping scientists compare the old and the young, or people in different parts of the world.

It could also be used to try to find out whether viruses, or the body's immune response to them, contribute to chronic diseases and cancer, the researchers said.

"I'm sure there'll be lots of applications we haven't even dreamed of," said Stephen J. Elledge, the senior author of the report, published in the journal Science, and a professor of genetics at Harvard Medical School and Brigham and Women's Hospital.

"That's what happens when you invent technology — you can't imagine what people will do with it," Elledge said. "They're so clever."

The test can detect past exposure to more than 1,000 strains of viruses from 206 species — pretty much the entire human "virome," meaning all the viruses known to infect people. The test works by detecting antibodies, highly specific proteins the immune system has made in response to viruses.

Tried out in 569 people in the United States, South Africa, Thailand and Peru, the blood test found that most had been exposed to about 10 species of virus — mostly the usual suspects, like those causing colds, flu, gastrointestinal illness and other common ailments.

But a few subjects had evidence of exposure to as many as 25 species, something Elledge said the researchers had yet to explain.

There were some differences in patterns of exposure from continent to continent. In general, people outside the United States had higher rates of virus exposure. The reason is not known, but the researchers said it might be due to "differences in population density, cultural practices, sanitation or genetic susceptibility."

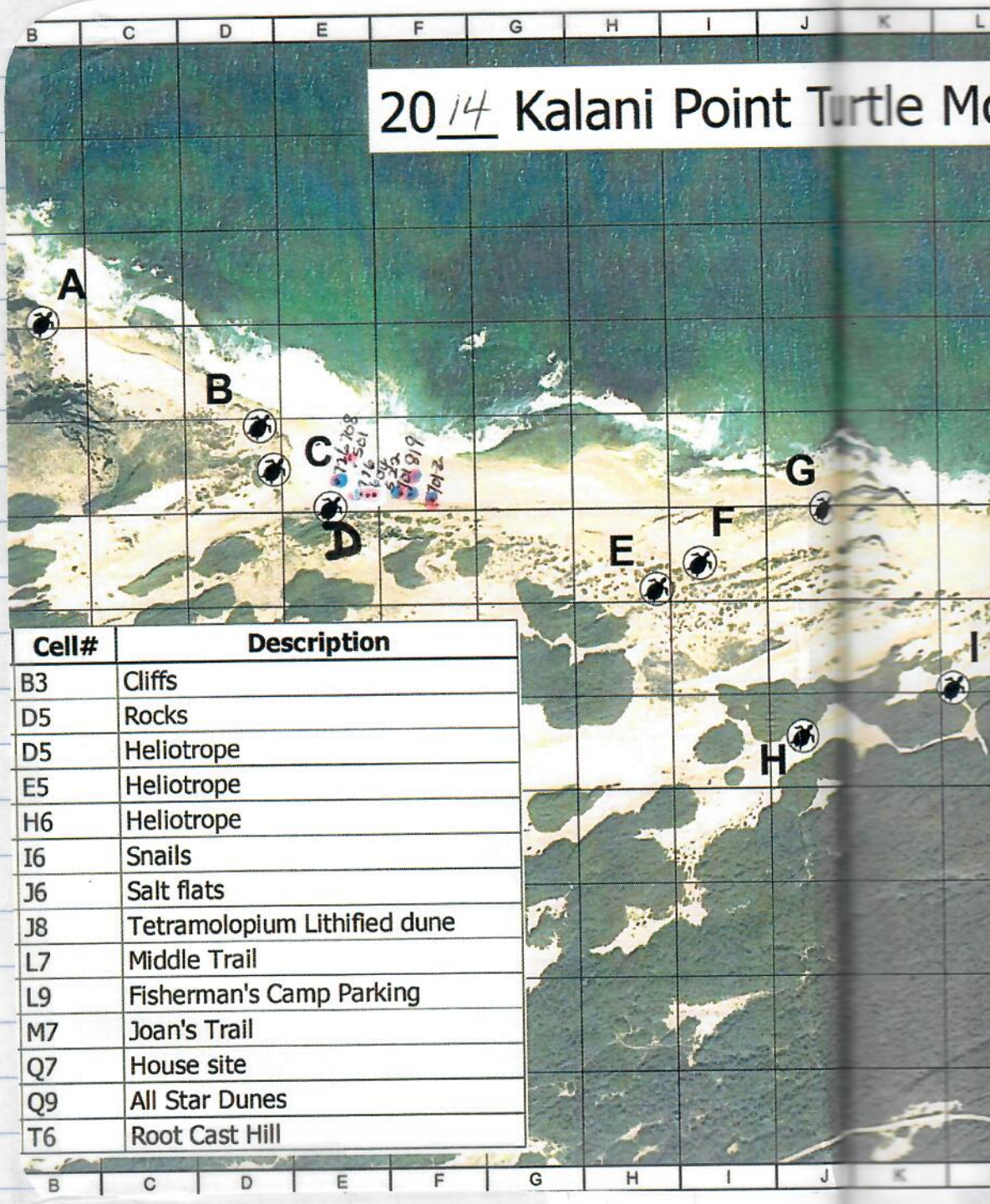
Scientists not associated with the work said it has vast potential.

"This will be a treasure trove for communicable disease epidemiology," said Dr. William Schaffner, an infectious-disease expert at Vanderbilt University. "It will be like the introduction of the electron microscope. It will allow us to have more resolution at a micro level."

One possibility, Schaffner said, would be to deploy the test in large populations to find out the ages at which children are exposed to various illnesses in order to help determine the best timing for vaccinations.

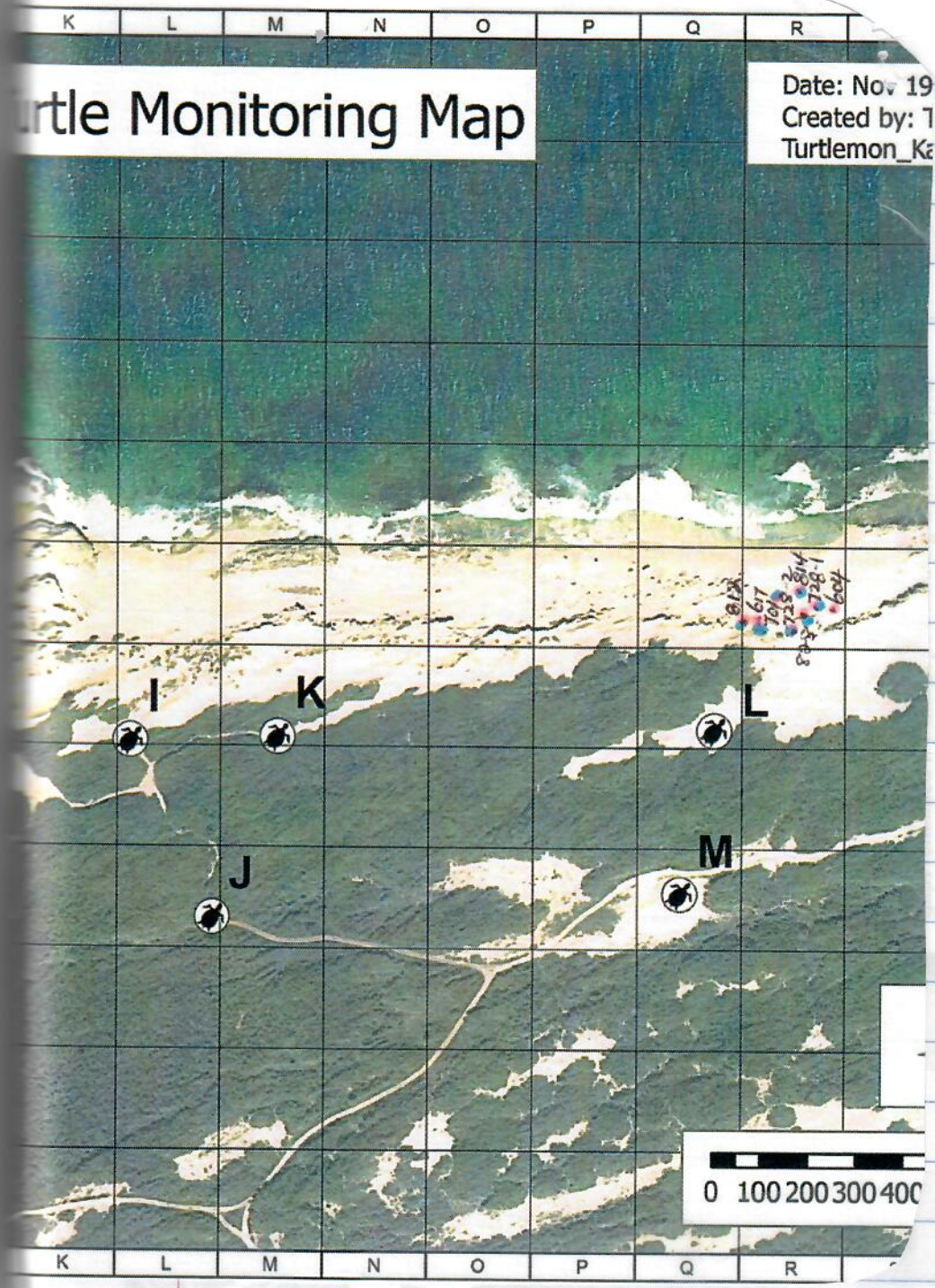
Another idea, he said, would be to test collections of frozen blood samples — government laboratories and some universities store them from previous studies — to learn about historical patterns of disease.

excavation



Cell#	Description
B3	Cliffs
D5	Rocks
D5	Heliotrope
E5	Heliotrope
H6	Heliotrope
I6	Snails
J6	Salt flats
J8	Tetramolopium Lithified dune
L7	Middle Trail
L9	Fisherman's Camp Parking
M7	Joan's Trail
Q7	House site
Q9	All Star Dunes
T6	Root Cast Hill

Notch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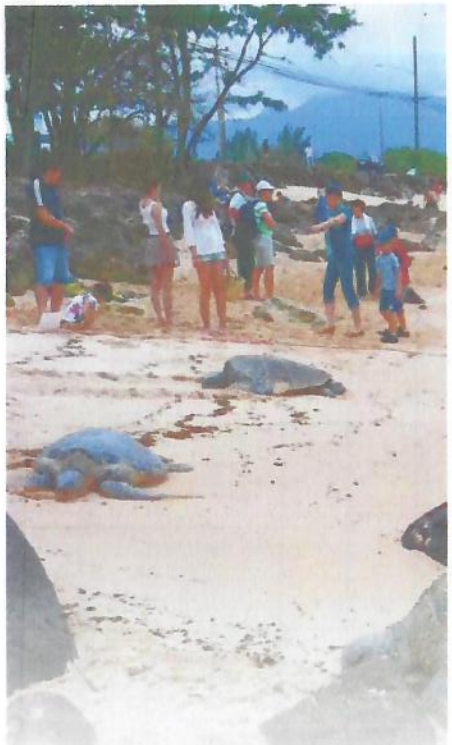
Pacific Islands Fishery News
SPRING 2015
ISSN 2151-2337 (ONLINE)
Newsletter of the Western Pacific Regional Fishery Management Council

HAWAI'I HUMPBACKS RECOVERED, GREEN TURTLE RECOVERY QUESTIONED



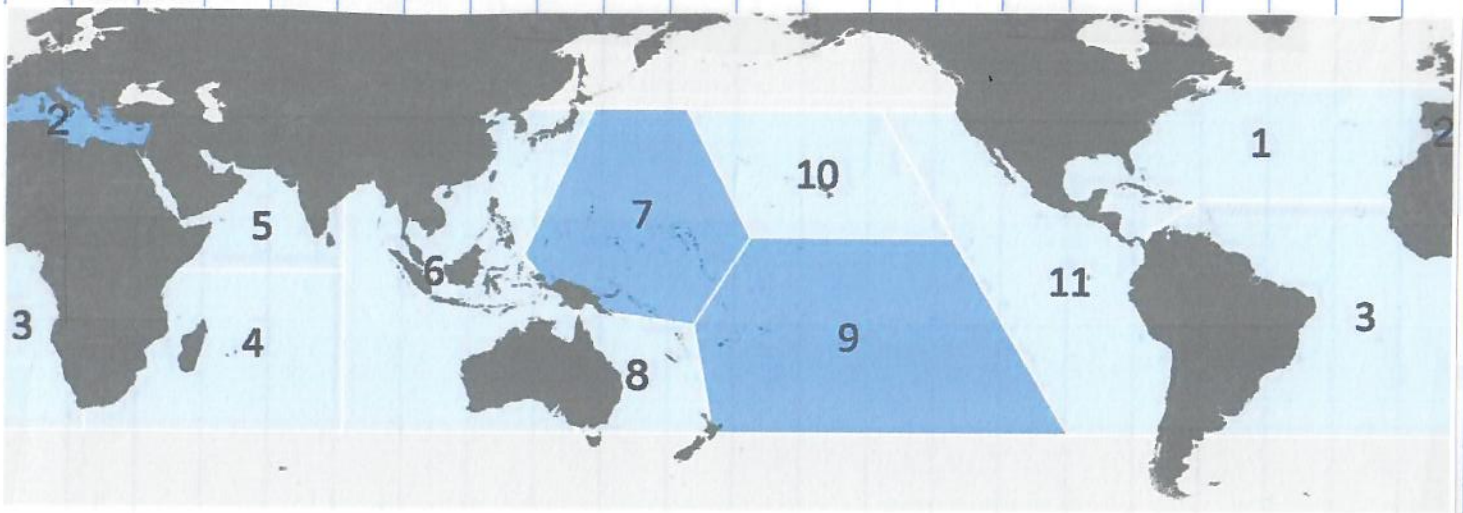
Hawai'i green sea turtles (Chelonia mydas) *on O'ahu.*

The National Marine Fisheries Service (NMFS) on April 21 and March 23, 2015, published proposed rules and 12-month findings that addressed petitions to categorize the North Pacific humpback whale and Hawai'i green sea turtle as distinct population segments (DPSs) and remove them from the Endangered Species Act (ESA) listings. The petitions were submitted in April 2013 by the Hawaii Fishermen's Alliance for Conservation and Tradition (HFACT) and in February 2012 by the Association of Hawaiian Civic Clubs, respectively. While NMFS' humpback whale finding warranted a subsequent Alaska petition to categorize the Hawai'i humpback whale breeding population as a DPS and delist it, NMFS' denial to delist the entire North Pacific population or the Hawai'i green sea turtle population demonstrates an alarming trend in NMFS' approach to species that have had ESA protection. The approach is overly risk-averse and shows a lack of intent to return management of living marine resources to state, territorial and other responsible management authorities.

When the HFACT petition was submitted to NMFS, the best available science concluded that the population structure of the North Pacific humpback whale was highly complex and that various uncertainties and data gaps remained for this population. Eight months later in December 2013, a group of 19 authors, including five who served on the 11-person Humpback Whale Biological Review Team (BRT), published a paper suggesting that the North Pacific population could be viewed as not a single DPS but as four DPSs. In February 2014, nearly a year after HFACT's petition (to which NMFS had not yet published a 12-month finding), the State of Alaska submitted a petition to delineate the Central North Pacific stock of the humpback whale (which includes the humpbacks that breed in

The approach is overly risk-averse and shows a lack of intent to return management of living marine resources to state, territorial and other responsible management authorities.

CONTINUED ON PAGE 2



Map illustrates the global reclassification of the green sea turtle population into 11 Distinct Population Segments. Threatened (light blue) and endangered (dark blue) green turtle distinct population segments (DPSs): 1. North Atlantic, 2. Mediterranean, 3. South Atlantic, 4. Southwest Indian, 5. North Indian, 6. East Indian-West Pacific, 7. Central West Pacific, 8. Southwest Pacific, 9. Central South Pacific, 10. Central North Pacific, and 11. East Pacific.

Hawai'i Humpbacks Recovered, Green Turtle Recovery Questioned

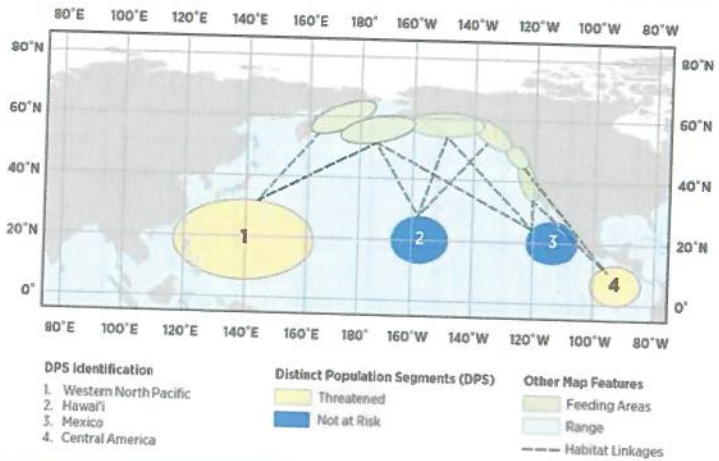
Continued from page 1

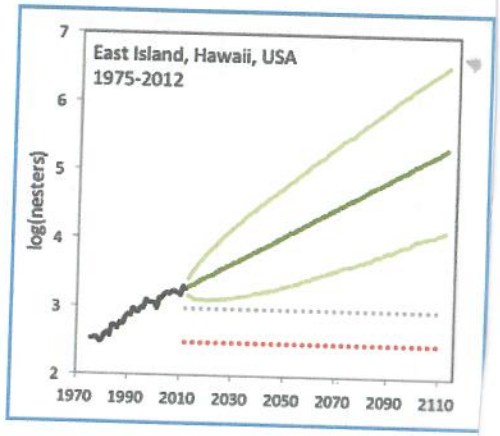
Hawai'i) as a DPS and remove that DPS from the ESA endangered species list.

In its recently released proposed rule and 12-month findings for the two humpback whale petitions, NMFS denied the HFACT petition to delist the entire North Pacific population and pursued the Alaska petition to categorize the Hawai'i humpback whales as the Central North Pacific DPS. NMFS identified 14 DPSs globally, including four DPSs for the North Pacific population (see map). All four of these DPSs migrate to winter feeding grounds in the North Pacific where some of the populations co-mingle the BRT considered in determining the extinction risk for a species/DPS is its population size. The division resulted in the continued listing of two fringe populations, which together represent less than 10 percent of the North Pacific population.

Similar to the humpback whale petitions, the delisting petition for the green sea turtle triggered a global status review of the species. Green sea turtles were listed under the ESA as threatened in 1978, except for the Florida and Mexican Pacific Coast breeding populations, which were listed as endangered. As a result of the status review, NMFS and the US Fish and Wildlife Service (FWS) identified 11 DPSs worldwide and proposed listing eight as threatened and three as endangered. The Florida and Mexican Pacific Coast populations would move from the endangered to threatened

Humpback Whale Distict Population Segments (DPS) in the North Pacific





The Population Viability Analysis using the long-term nesting data at East Island in French Frigate Shoals shows that the nesting population of green sea turtle is unlikely to drop below two critical thresholds, 50 percent decline from the current abundance (gray dotted line) and less than 300 nesting females (red dotted line). The light green solid lines indicates the 95 percent confidence interval of the projection, based on 10,000 simulations. Source: Green Turtle Status Review

at East Island in French Frigate Shoals, where nearly half of all nesting in the Hawaiian Islands occurs and the nesting population trend has continuously increased for nearly 40 years. Results of the PVA showed that the population was unlikely to experience any substantial decline over the next 100 years.

before returning to their respective breeding grounds in the Western North Pacific, Hawai'i, Mexico and Central America. NMFS also proposed delisting the Hawaii and Mexico DPSs in the North Pacific and all seven DPSs in the southern hemisphere (including the Oceania DPS to which American Samoan belongs). NMFS proposed retaining the threatened list for the Central America DPS and the Western North Pacific DPS, which might be found in the waters around the Mariana Archipelago.

NMFS acknowledged in the proposed rule that "the petitioned North Pacific population could also satisfy the discreteness and significance criteria of the DPS Policy." However, NMFS explained that it exercised discretion as "an expert agency charged with administering the ESA" in dividing the North Pacific population into four DPSs, as the approach "represented a more risk averse approach." One of the criteria

status, while the Central Western Pacific DPS (which includes Guam and CNMI green turtles) and Central South Pacific DPS (which includes American Samoa green turtles) would move from a threatened to an endangered status along with the Mediterranean DPS. None of the DPSs were proposed for delisting. NMFS and FWS recommend denying the delisting petition for the Hawai'i population (i.e., Central North Pacific DPS) due to its small and narrowly distributed nesting population and threats of climate change and sea level rise.

The decision to maintain the threatened listing for the Hawai'i green turtles comes despite the finding in the Green Turtle Status Review report that the population has a zero percent probability of falling below critical thresholds (see accompanying chart). For the Hawai'i population, the Status Review team conducted a Population Viability Analysis (PVA) using the long-term nesting data

Despite the recovering trend, NMFS and FWS found that the concentrated nesting in the low-lying atoll in the Northwestern Hawaiian Islands and the current level of nesting abundance, which was considered low at approximately 4,000 nesting females, make the Central North Pacific DPS vulnerable to sea level rise and at risk of extinction within the foreseeable future.

"To suggest that the *honu* (Hawaiian green sea turtle) could be at risk of extinction because of sea level rise is highly speculative and not based on any modeling or rigorous analysis," notes Kitty Simonds, executive director of the Western Pacific Regional Fishery Management Council. "Sea turtle experts have said that green turtles will find another nesting beach if one disappears. Whale-Skate Island in French Frigate Shoals submerged entirely in the 1990s, and we did not see a decline in nesting females in years following. On the contrary, we continue to see exponential increase in the face of many 'threats' identified by NMFS."

Range-wide information for the Central West Pacific and Central South Pacific

DPSs are limited compared to the well-studied Hawai'i population. Green turtle nesting areas are scattered across the Pacific Islands, and, while abundances at most rookeries are small, the total estimated nesting females add up to approximately 6,500 in the Central West Pacific DPS and approximately 2,800 nesting females in the Central South Pacific DPS. However, NMFS and FWS considered these abundances low, especially given the small size of each rookery.

In addition to the low abundance, NMFS and FWS identified a number of increasing threats that put the DPSs for green turtles in Guam, CNMI and American Samoa in danger of extinction. For the Central West Pacific DPS including Guam and CNMI, threats include rapid human population growth in many areas of the insular Pacific resulting in coastal development and construction, destructive fishing methods, fishery bycatch, legal and illegal harvest of green turtles and eggs, and climate change impacts. In the Central South Pacific DPS including American Samoa, threats include chronic and persistent illegal harvest, sea level rise and loss of habitat resulting from climate change.

In comparing the humpback and green turtle proposed rules, it seems as if a species' ESA status determination hinges on the protection afforded to that species should it become delisted. Delisted humpback whales would still be afforded full protection in the United States under the Marine Mammal Protection Act and continue to be subject to the whaling moratorium under the International Whaling Commission. However, in the absence of an alternative federal law that would provide protections to green sea turtles similar to the ESA, NMFS appears to be reluctant in considering delisting the Hawai'i green sea turtle even though it is protected and managed under existing State of Hawai'i laws.

The green turtle population has seen dramatic recovery in many places around the world. The global abundance for nesting females alone is estimated at around 550,000 animals, which would easily translate into tens of millions of green turtles of all life stages worldwide. In the decision to keep all green turtle DPSs under the ESA protection, NMFS noted that the removal of ESA protections could pose a threat to certain populations. In other words, NMFS appears to be operating under the assumption that species cannot maintain sustainable populations unless they are fully protected under the ESA or other federal mandate and that returning management to states and other applicable agencies would result in poor management after delisting.

To read the humpback whale findings and proposed rule, go to https://federalregister.gov/a/2015-09010. Comments must be submitted to NMFS by July 20, 2015.

To read the green sea turtle proposed rule and status review, go to www.nmfs.noaa.gov/pr/species/turtles/green.htm. The proposed rule is open for public comment for 90 days until June 22, 2015.

Chronic disease impacts on the population dynamics of a marine megaherbivore

Milani Chaloupka

Ecological Modelling Services P/L

PO Box 6150, University of Queensland, St Lucia, Queensland, 4067, Australia

April 2015

Prepared fort he

Western Pacific Regional Fisheries Management Council

Honolulu, Hawaii, USA

Summary

Most studies of wildlife disease ecology focus on infectious diseases for terrestrial species with few studies on marine species or chronic diseases. Marine megafauna such as whales, sharks and marine turtles are particularly suitable for the study of chronic disease affects on wildlife population dynamics because they are long-lived and hence the disease can be fully expressed. So a 29-yr monitoring and surveillance program was used to explore the impact of a major cancerous disease (fibropapillomatosis) on the population dynamics of a green sea turtle population resident in coastal waters near Molokai (Hawaii), which is considered the main global enzootic hotspot for this disease. A sizeclass-structured multistate capture-mark–recapture modelling approach was used to derive epidemiologic parameters based on capture-mark-recapture histories for 1904 uniquely

tagged immature turtles sampled since 1982. Disease status of each turtle was assessed at each encounter using a 4-level tumour severity score but recoded as disease presence or absence to simplify analysis. Significant pathogen-induced mortality was found with the annual apparent survival probability lower for FP-diseased immature turtles (0.78, 95% CI: 0.68-0.85) than for disease-free immatures (0.88, 95% CI: 0.81-0.93), irrespective of sizeclass. The recapture probabilities were also independent of sizeclass but time-varying and disease-state-dependent, suggesting sampling bias or behavioral differences for the diseased turtles. Annual abundance estimates derived from disease-state-dependent recapture probabilities suggests a stable long-term population size trend of ca. 1860 immature green sea turtles. So despite exposure to a virulent disease this population of turtles was shown no sign of any decline over the past 3 decades. The estimated FP disease prevalence curve shows a rapidly increasing prevalence rate following the disease outbreak in the early-1980s followed then by a significant and gradual decline from the mid-1990s as the disease ran its course. At the peak of the epidemic in the mid-1990s it was estimated that prevalence was at least 46%. The annual disease infection rate or force-of-infection was sizeclass-dependent with larger turtles having a higher probability of infection (0.26, 95% CI: 0.15-0.42) than smaller turtles (0.18, 95% CI: 0.11-0.29). The annual disease recovery rate was independent of time and very similar for both sizeclasses (small: 0.16, 95% CI: 0.07-0.34, large: 0.15, 95% CI: 0.07-0.29). Recapture probabilities were low and so some model parameters or model-derived outputs like population size and prevalence were estimated with low precision. Nonetheless, this is the first comprehensive study of the impact of a chronic and virulent disease on the long-term population dynamics of a large long-lived marine species.

ISLAND VOICES

UH turned Mauna Kea into a poorly managed industrial park

5/21/2015 HS-A

By Abigail Kinoiki Kekaulike Kawananakoa

The University of Hawaii was entrusted with Mauna Kea in 1968, being given a 65-year lease from the Hawaii Department of Land and Natural Resources.

In 1998, the state auditor submitted a meticulous analysis of the University of Hawaii's abysmal performance over the prior 20 years. In 2005, a follow-up analysis was done which was no less troubling. The most recent audit was last year, showing some improvement but continued failures. Taken together, these three independent reports document a continued breach of the UH's fundamental trust responsibility for over 45 years.

There is wide agreement regarding the importance of protecting Hawaii's unique cultural and environmental resources. Discussion and debate on the balance between preservation and development require an informed and objective analysis such as that provided by the state auditor.

Abigail Kinoiki Kekaulike Kawananakoa is a philanthropist, Campbell Estate heiress and descendent of Queen Kapiolani.

From the start, the UH saw Mauna Kea as a vehicle to gain academic prestige and that has never changed. The effort to characterize this as science against culture — or worse, the past versus the future — completely misses the fundamental flaw.

The UH was never equipped to manage Mauna Kea. It measured success by the evanescent standards of academics: papers published, credit given and international accolades conferred by being connected to some degree to work performed by others because it came out of Mauna Kea.

The true economic value of observatory sites was never pursued and never realized. The protection of the environment has been secondary. Cultural and historical protections have been viewed as nuisances. The summit became a scientific industrial park of which the UH was a poor manager.

We now have the biggest of all the telescopes ready for construction. The Thirty Meter Telescope has reaped the bitter harvest of all that came before and Hawaii is very much in the world's attention because of this controversy. Our leaders seem paralyzed, while TMT opponents have demonstrated both conviction and tenacity in their protests. It seems that events are going to careen inevitably into destructive conflict, which will further polarize our communities and diminish Hawaii's credibility in many ways.

It is not too late to set things right. It seems that these unresolved issues from our past are the place to start. To ignore these transgressions is untenable.

The UH pursued international acclaim at the expense of its relationship with the community, which created it and supports it. DLNR allowed it. All of us who did not object long ago share in these failures.

For the good of our home, our leaders and their institutions must take the difficult but unavoidable step of acknowledging the failures with genuine contrition and implementing credible changes in the control and operations of Mauna Kea. We must definitively resolve the past issues that haunt the present discussion.

Progress will come when the UH is replaced by an independent entity that can properly balance the competing interests. Until then, I support the peaceful protesters impeding further construction on Mauna Kea.

We are Hawaii.

Hawaii is Mauna Kea.

Onipaa.

SCIENCE

Cancer cells in seawater spread leukemia in clams

By James Gorman
New York Times

Infectious cancer cells drifting in the ocean might sound like a dystopian fantasy. But scientists say that is exactly what is happening — in clams.

For at least 40 years, outbreaks of the clam equivalent of leukemia have been hammering populations of soft-shell clams (Mya arenaria), also called steamers and littlenecks, along the East Coast from Maine to the Chesapeake, causing declines in harvest and loss of jobs.

But the cause of the disease and how it spread were unknown until U.S. and Canadian researchers studied the genes of the cancer cells.

"We realized that maybe this was a clone of cells that had spread," said Stephen P. Goff at Columbia University. Except for minor differences, all the samples had the same DNA. That meant they all came from one original case of cancer in one clam.

Goff and his colleagues, Michael J. Metzger at Columbia and Carol Reinish and James Sherry at Environment Canada, who published their findings in the journal Cell, reported that the cells must survive long enough in seawater to reach other clams and infect them.

This is only the third such cancer known in nature. A devastating facial tumor in Tasmanian devils spreads by biting, and a tumor in dogs spreads by sexual contact.

Elizabeth Murchison of the University of Cambridge, who studies these transmissible cancers, said in an email that she was not surprised that a third transmissible cancer had been discovered. But, she added, "I would not have guessed that it would be clams!"

Carcinogenicity of tetrachlorvinphos, parathion, malathion, diazinon, and glyphosate

In March, 2015, 17 experts from 11 countries met at the International Agency for Research on Cancer (IARC; Lyon, France) to assess the carcinogenicity of the organophosphate pesticides tetrachlorvinphos, parathion, malathion, diazinon, and glyphosate (table). These assessments will be published as volume 112 of the IARC Monographs.[1]

The insecticides tetrachlorvinphos and parathion were classified as "possibly carcinogenic to humans" (Group 2B). The evidence from human studies was scarce and considered inadequate. Tetrachlorvinphos induced hepatocellular tumours (benign or malignant) in mice, renal tubule tumours (benign or malignant) in male mice,[2] and spleen haemangioma in male rats. Tetrachlorvinphos is a reactive oxon with affinity for esterases. In experimental animals, tetrachlorvinphos is systemically distributed, metabolised, and eliminated in urine. Although bacterial to the bioactive metabolite, paraoxon, is similar across species. Although bacterial mutagenesis tests were negative, parathion induced DNA and chromosomal damage in human cells in vitro. Parathion markedly increased rat mammary gland terminal end bud density.[4] Parathion use has been severely restricted since the 1980s.

The insecticides malathion and diazinon were classified as "probably carcinogenic to humans" (Group 2A). Malathion is used in agriculture, public health, and residential insect control. It continues to be produced in substantial volumes throughout the world. There is limited evidence in humans for the carcinogenicity of malathion. Case-control analyses of occupational exposures reported positive associations with non-Hodgkin lymphoma in the USA,[5] Canada,[6] and Sweden,[7] although no increased risk of non-Hodgkin lymphoma was observed in the large Agricultural Health Study cohort (AHS). Occupational use was aggressive cancers after adjustment for other pesticides.[9] In mice, malathion increased hepatocellular adenoma or carcinoma (combined).[10] In rats, it increased thyroid carcinoma in males, hepatocellular adenoma or carcinoma (combined) in females, and mammary gland adenocarcinoma after subcutaneous injection in females.[4] Malathion is rapidly absorbed and distributed. Metabolism to the bioactive metabolite, malaoxon, is similar across species. Malaoxon strongly inhibits esterases; atropine reduced carcinogenesis-related effects in one study.[4] Malathion induced DNA and chromosomal damage in humans, corroborated by studies in animals and in vitro. Bacterial mutagenesis tests were negative. Compelling evidence supported disruption of hormone pathways. Hormonal effects probably mediate rodent thyroid and mammary gland proliferation.

Diazinon has been applied in agriculture and for control of home

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For more on the **IARC Monographs** see http://monographs.iarc.fr

Upcoming meetings

June 2–9, 2015, Volume 113: Some organochlorine insecticides and some chlorphenoxy herbicides

Oct 6–13, 2015, Volume 114: Red meat and processed meat

Monograph Working Group Members

A Blair (USA)—Meeting Chair; L Fritschi (Australia); J McLaughlin; C M Sergi (Canada); G M Calaf (Chile); F Le Curieux (Finland); I Baldi (France);

G D Jahnke; C W Jameson; M T Martin; M K Ross; I Rusyn; L Zeise (USA)

Invited Specialists
C Portier (Switzerland)

Representatives
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Observers
M K Boye Jensen, for Cheminova (Denmark); B Fervers, for the Léon Bérard Centre (France); E Giroux, for University Jean-Moulin Lyon 3 (France); T Sorahan, for Monsanto Company (USA); C Strupp, for the European Crop Protection Association (Belgium); P Sutton, for the University of California, San Francisco (USA)

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For the **Preamble to the IARC Monographs** see http://monographs.iarc.fr/ENG/Preamble/index.php

For **declarations of interests** see http://monographs.iarc.fr/ENG/Meetings/vol112-participants.pdf

indications of exposure–response trends, were reported by two large multicentre case-control studies of occupational exposures.[5,6] The AHS reported positive associations with specific subtypes, which persisted after adjustment for other pesticides, but no overall increased risk of non-Hodgkin lymphoma.[11] Support for an increased risk of leukaemia in the AHS was strengthened by a monotonic increase in risk with cumulative diazinon exposure after adjustment for other pesticides. Multiple updates from the AHS consistently showed an increased risk of lung cancer with an exposure–response association that was not explained by confounding by other pesticides, smoking, or other established lung cancer risk factors.[12] Nonetheless, this finding was not replicated in other populations. In rodents, diazinon increased hepatocellular carcinoma in mice and leukaemia or lymphoma (combined) in rats, but only in males receiving the low dose in each study. Diazinon induced DNA or chromosomal damage in rodents and in human and mammalian cells in vitro. Some additional support for human relevance was provided by a positive study of a small number of volunteers exposed to a diazinon formulation.[13]

Glyphosate is a broad-spectrum herbicide, currently with the highest production volumes of all herbicides. It is used in more than 750 different products for agriculture, forestry, urban, and home applications. Its use has increased sharply with the development of genetically modified glyphosate-resistant crop varieties. Glyphosate has been detected in air during spraying, in water, and in food. There was limited evidence in humans for the carcinogenicity of glyphosate. Case-control studies of occupational exposure in the USA,[14] Canada,[6] and Sweden[7] reported increased risks for non-Hodgkin lymphoma that persisted after adjustment for other pesticides. The AHS cohort did not show a significantly increased risk of non-Hodgkin lymphoma. In male CD-1 mice, glyphosate induced a positive trend in the incidence of a rare tumour, renal tubule carcinoma. A second study reported a positive trend for haemangiosarcoma in male mice.[15] Glyphosate increased pancreatic islet-cell adenoma in male rats in two studies. A glyphosate formulation promoted skin tumours in an initiation-promotion study in mice.

Glyphosate has been detected in the blood and urine of agricultural workers, indicating absorption. Soil microbes degrade glyphosate to aminomethylphosphoric acid (AMPA). Blood AMPA detection after poisonings suggests intestinal microbial metabolism in humans. Glyphosate and glyphosate formulations induced DNA and chromosomal damage in mammals, and in human and animal cells in vitro. One study reported increases in blood markers of chromosomal damage (micronuclei) in residents of several communities after spraying of glyphosate formulations.[16] Bacterial mutagenesis tests were negative. Glyphosate, glyphosate formulations, and AMPA induced oxidative stress in rodents and in vitro. The Working Group classified glyphosate as "probably carcinogenic to humans" (Group 2A).

We declare no competing interests.

Kathryn Z Guyton, Dana Loomis, Yann Grosse, Fatiha El Ghissassi, Lamia Benbrahim-Tallaa, Neela Guha, Chiara Scoccianti, Heidi Mattock, Kurt Straif, on behalf of the International Agency for Research on Cancer Monograph Working Group, IARC, Lyon, France

International Agency for Research on Cancer, Lyon, France

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X Supplies to Jeff Pawloski SLP

6/20/2015 Saturday

NOT READ 25 - Biomark GPT 12 Part B1012.C.03V2

Read 60 - 20+20+20 FAT WRAPPER injectors PLS

Read 20 - dd injector

105 TOTAL

(2) 3M Animal care product 3M Vetbond
0.1 fl oz No. 14695 B

81-saline orange top vials

50-6 mm ACU-Punch CE0413
Sterile ACUDERM INC.

PLOS ONE | DOI:10.1371/journal.pone.0120796 March 24, 2015

RESEARCH ARTICLE

Development of a Summarized Health Index (SHI) for Use in Predicting Survival in Sea Turtles

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Abstract

Veterinary care plays an influential role in sea turtle rehabilitation, especially in endangered species. Physiological characteristics, hematological and plasma biochemistry profiles, are useful references for clinical management in animals, especially when animals are during the convalescence period. In this study, these factors associated with sea turtle surviving were analyzed. The blood samples were collected when sea turtles remained alive, and then animals were followed up for surviving status. The results indicated that significantly negative correlation was found between buoyancy disorders (BD) and sea turtle surviving ($p < 0.05$). Furthermore, non-surviving sea turtles had significantly higher levels of aspartate aminotranspherase (AST), creatinine kinase (CK), creatinine and uric acid (UA) than surviving sea turtles (all $p < 0.05$). After further analysis by multiple logistic regression model, only factors of BD, creatinine and UA were included in the equation for calculating summarized health index (SHI) for each individual. Through evaluation by receiver operating characteristic (ROC) curve, the result indicated that the area under curve was 0.920 ± 0.037, and a cut-off SHI value of 2.5244 showed 80.0% sensitivity and 86.7% specificity in predicting survival. Therefore, the developed SHI could be a useful index to evaluate health status of sea turtles and to improve veterinary care at rehabilitation facilities.

Supporting Information

S1 File. S1_Dataset.xls was used for the analysis of this study.
(XLS)

S2 File. IACUC ethics approval documents.
(PDF)

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Author Contributions

Conceived and designed the experiments: THL CCC. Performed the experiments: THL IJC SCL. Analyzed the data: THL CCC. Contributed reagents/materials/analysis tools: THL IJC SCL. Wrote the paper: THL CCC.

HANA HOU 4/15

幸いハワイでは、アオウミガメは
州とアメリカ連邦政府の両方の法律よって
保護されている。その甲斐があって現在
あちこちのビーチでその姿を見られる
ようになった。

「オアフ島」

仲間だから、2メートル離れよう

のんびりとアオウミガメが日光浴する姿をハワイのあちこちで見られるようになったのは、今から20年ほど前のこと。1960年代に絶滅が危惧されて以来、手厚く保護されて個体数が増えたからだといわれる。

オアフ島ノースショアのラニアケアビーチにも、1999年からチラホラと目撃されはじめた。どうやらこの小さな入江に繁茂している海藻がお気に入りらしい。

ところが、予期しない問題が起きた。次第に人びとの目に留まるようになると、大勢の見物人が押しかけるようになっていったのだ。

そこでアメリカ海洋大気庁の研究員たちが中心となって2004年に立ち上げたのが、ショー・タートル・アロハという保護活動だった。

今ではNPOマラマナホヌと改称し、オアフ島内に100人近くのボランティアを擁する団体となった。彼らは、ラニアケアビーチにやってくるアオウミガメの行動を毎日交代で記録し、アメリカ海洋大気庁に報告している。

このビーチには現在、20頭ほどの常連カメが姿をあらわすという。どのカメにも英語とハワイ語の名前がついている。たとえばオスのフルータスは、ハワイ語でナルカイ（波瀾万丈の人生を乗り越えたもの）という。嵐の晩にはじめてこの浜に姿をあらわしたからだそうで、古参の1頭だ。

「アオウミガメは体表の鱗紋で個体を識別できます。それを正しく読み取って記録を取るのがボランティアの大事な仕事です」と、理事のジム・ケネディーさんは語る。アオウミガメは3、4年に1度の割合で繁殖をするから、今年はどのオスとメスがカップルとなるか予測し、保護活動に役立てている。

彼らの産卵場は、北西ハワイ諸島のフレンチフリゲート礁だ。成長したカメたちは、約800キロを泳いでカウアイ島やオアフ島へやってくる。

もうひとつ、ボランティアの重要な役目は、甲羅干しするカメの半径およそ2メートルにロープを張り、見物人との接触を避けることだ。つい好奇心でなでたりしたくなるが、野生生物にとってはストレスとなる。同NPOでは6カ国語で注意をうながしている。

「といっても、私たちは取り締まりをしているわけじゃありません」と、ジムさん。この愛すべき海の仲間のことをだれもが知りたくなるのは、ごく自然だ。その知識をわかちあうのが本来の使命なのだという。

いっぽうで、一本道のノースショアでのカメ渋滞や違法駐車が問題となり、オアフ島を二分する論争を巻き起こしている。押しかける見物客に賛否はあるけれど、人と野生生物がどう付き合っていったらよいのか、一石を投じたことはまちがいなさそうだ。

道添 進＝文
エリース・バトラー＝写真

Extensive federal regulations

5/16/2015 Honolulu Star-Adv

By Clyde Wayne Crews Jr. and Ryan Young

Last year, Americans paid nearly $1.4 trillion in federal individual income taxes — plus sales taxes, fuel taxes, property taxes, excise taxes, you name it.

Yet, there's another tax that doesn't show up on any receipt: the cost of federal regulation.

Just as businesses pass on costs from taxes to consumers, they also pass along their regulatory compliance costs. That means the American public pays for regulation with higher prices at the supermarket, less money in our paychecks, and overall lower economic growth and prosperity.

Complying with federal regulations and interventions cost the economy some $1.88 trillion in 2014, according to the Competitive Enterprise Institute's new "Ten Thousand Commandments" report. That cost amounts to more than half of the $3.5 trillion federal budget.

If federal regulations were their own country, it would be the world's 10th largest economy, ranking behind India and ahead of Russia.

Unfortunately, this enormous cost of federal regulations is likely underestimated. The problem is, even when using the best available private and government data, information about the costs and benefits of regulations is only provided for a fraction of these rules. For example, out of more than 3,500 final regulations last year, the Office of Management and Budget conducted full cost-benefit analyses for only seven of them — less than two-tenths of 1 percent.

And although members of Congress like to blame agencies for these costs, lawmakers share part of the blame. Despite the Constitution granting "all legislative powers" to members of Congress, they routinely delegate an enormous amount of lawmaking to executive branch agencies.

While Congress passed 224 laws last year, agencies issued 16 times more new regulations — 3,554 new rules in total. This huge disparity between laws passed and regulations issued by unelected agency officials can be described as an "unconstitutionality index," which averaged 26 regulations issued for every law passed over the last decade.

America's regulatory state continues to grow, and it's time for Congress to roll back

impose significant cost on U.S.

RTSER

our nation's "hidden tax" of regulation. One solution would be for Congress to vote, in an expedited manner, to approve every major agency rule — those with an estimated annual cost of $100 million or more — before they become binding for the rest of us.

The Regulations from the Executive In Need of Scrutiny Act is a bill that already exists and would do just that. The act has passed the House in each of the last two Congresses but still needs to be passed by the Senate.

Another solution would be to add automatic sunsets for new regulations after a period time, for example, five years. Just like a carton of milk, regulations tend to go bad after a while, especially due to rapid and constant technological advancements. Automatic expiration provides a painless way to get rid of obsolete or ineffective rules, and still allow Congress to easily renew successful regulations with a vote.

Of course, sunsets would only address new regulations. The existing stock of old rules also needs housecleaning. The Regulatory Improvement Act would establish an independent Regulatory Improvement Commission to comb through the Code of Federal Regulations, which compiles all federal rules and is now 175,268 pages long.

The commission would then send Congress a package of harmful, redundant or outdated regulations to repeal with a timely up-or-down vote, without amendment. The commission's first go-around could focus on a specific policy area, like technology policy. It could then reconvene each year to address other areas, like agriculture or transportation.

Overzealous federal regulation not only makes the federal government bloated. It also carries opportunity costs in lost inventions, innovations and jobs. Reining in the hidden tax of regulation might not lower Americans' income tax bills, but it would provide an economy-boosting tax cut that could spark needed growth and wealth creation that benefits everyone.

Clyde Wayne Crews Jr. is vice president for policy at the Competitive Enterprise Institute. Ryan Young is a fellow there.

ON VACATION: *Columnist Thomas Sowell is off this week.*

RICHARD BORRECA
ON POLITICS

H5A 4/7/15

Constant beach loss will alter Hawaii as we know it

Because we live on a string of islands, it just makes sense to keep track of how fast the sea is rising.

This is a good news, bad news story.

The bad news is, yes, the sea levels around Hawaii are rising. More water means less beach.

The good news is that the state and the University of Hawaii are both watching the water levels and making some precise predictions about what it means.

"We found that increased sea level rise (SLR) causes an average 16–20 feet of additional shoreline retreat by 2050, and an average of nearly 60 feet of additional retreat by 2100," said Tiffany Anderson, the lead author of a new report from UH-Manoa's School of Ocean and Earth Science and Technology.

The new wrinkle in the report is that the state's Department of Land and Natural Resources helped put together the funding for the report.

"In a nutshell: the study was funded by a combination of state and federal research dollars. So I would say we are getting strong support," reported Chip Fletcher, associate dean at SOEST and co-author on the new report.

Using historic photographs and up-to-the-minute measurement techniques, the UH researchers were able to map out the estimated sea level rise across Hawaii's beaches (http://goo.gl/PaXvcn).

Using that information, the state's DLNR reports that beaches are shrinking.

"On Oahu, 10.7 miles of beach has been narrowed by shoreline hardening and 6.4 miles has been lost. This is 24 percent of the 71.6 miles of the original sandy shoreline on Oahu," according to the DLNR webpage.

The state and UH came up with precise maps of every beach with details of how much erosion will take away (http://goo.gl/Cj8etc).

It is serious enough that the beach loss at Lanikai is already estimated to have caused 4,000 feet of beach to disappear.

The UH report from the UH Hawaii Sea Level Center explains that the sea level rise will continue, and the results are not good.

"In Hawaii, sea level rise resulting from global warming is a particular concern. High seasonal waves, hurricanes, and tsunami will penetrate further inland as the water level increases. The coastal groundwater table, which rises and falls with the daily tides, will crop out above ground level creating new wetlands, changing surface drainage, and producing widespread flooding especially when high tide is coincident with heavy rainfall. Coastal erosion will increase," the report warns.

The UH research shows that between 2040 and 2050, the Hawaii sea level will rise 1 foot. By 2050 and 2070, a 2-foot rise is expected.

By then, the UH researchers say, Waikiki will have declined and tourism will have to move to either the west or windward side of Oahu.

Between 2070 and 2090, the seas will have risen 3 feet.

"Most coastal segments where homes still exist in their early 21st century footprints will be protected by seawalls but the wave splash and salt air (are) likely to make many of these locations run-down and relatively undesirable neighborhoods; additionally, the persistence of standing water in most coastal plain neighborhoods also make these undesirable places to invest," says the UH report.

So as it turns out, even the good news is bad news.

Richard Borreca writes on politics on Sundays, Tuesday and Fridays. Reach him at **rborreca@staradvertiser.com**.

Ancient climate change altered ocean diversity

By Geoffrey Mohan
Los Angeles Times

Naturally occurring climate change lowered oxygen levels in the deep ocean, decimating a broad spectrum of seafloor life that took some 1,000 years to recover, according to a study that offers a potential window into the effects of modern warming.

Earth's recovery from the last glacial period was slower and more brutal than previously thought, according to the study, published last week in the journal Proceedings of the National Academy of Sciences.

Researchers deciphered that plot line from a 30-foot core of sea sediments drilled from the Santa Barbara Basin off the coast of California containing more than 5,000 fossils spanning nearly 13,000 years.

about 130 years, the researchers found.

"We found incredible sensitivity across all of these taxonomic groups, across organisms that you would recognize, that you could hold in your hand, organisms that build and create ecosystems that are really fundamental to the way ecosystems function," Moffitt said. "They were just dramatically wiped out by the abrupt loss of oxygen."

That highly diverse community soon was replaced with a relatively narrow suite of bizarre and extreme organisms similar to those found near deep-ocean vents and methane seeps in modern oceans, Moffitt said.

Evidence of that transition was confined to such a narrow band of sediments that the turnover could have been "nearly instantaneous," the study found.

"The recovery does not happen on a century scale; it's a commitment to a millennial-scale recovery," said study author Sarah Moffitt, a marine ecologist at the University of California at Davis' Bodega Marine Laboratory. "If we see dramatic oxygen loss in the deep sea in my lifetime, we will not see a recovery of that for many hundreds of years, if not thousands or more."

Studies already have chronicled declines in dissolved oxygen in some areas of Earth's oceans. Such hypoxic conditions can expand when ocean temperatures rise and cycles that carry oxygen to deeper areas are interrupted.

As North American glaciers retreated during a warming period 14,700 years ago, an oxygen-sensitive community of seafloor invertebrates that included sea stars, urchins, clams and snails nearly vanished from the fossil record within

Then, beginning about 13,500 years ago, the seafloor community began a slow recovery with the rise of grazers that fed on bacterial mats. Recovery eventually was driven by a fluctuation back toward glaciation during the Younger Dryas period, a cooling sometimes called the Big Freeze.

"The biological community takes 1,000 years to truly recover to the same ecological level of functioning," Moffitt said. "And the community progresses through really interesting and bizarre states before it recovers the kind of biodiversity that was seen prior to the warming."

The climate changes chronicled in the study arose from natural cycles involving Earth's orbit of the sun, and the oxygen declines that ensued were more extreme than those that have occurred in modern times, the study noted.

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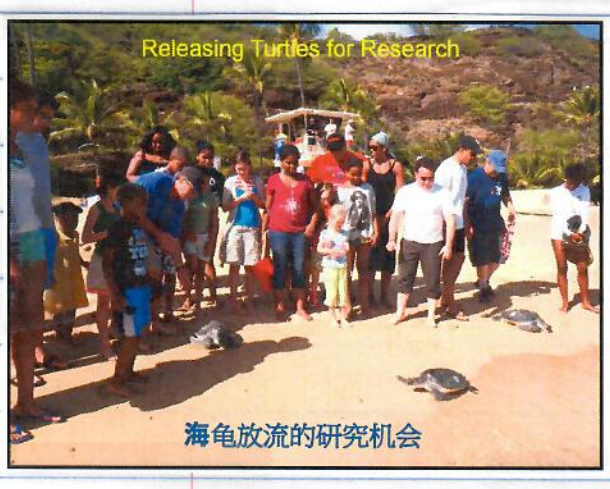
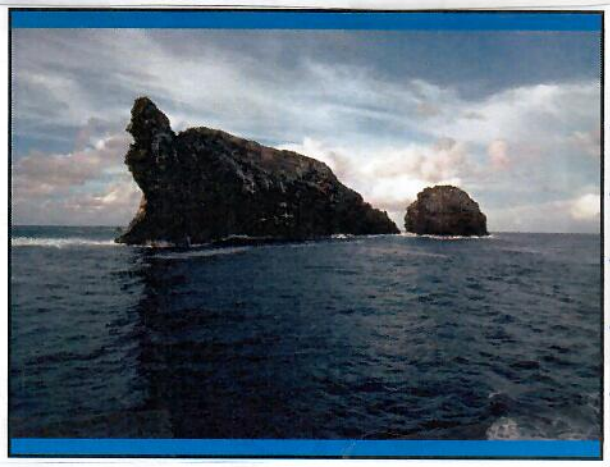
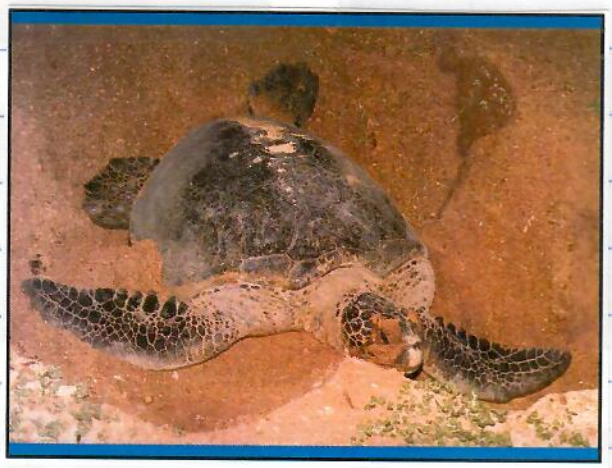
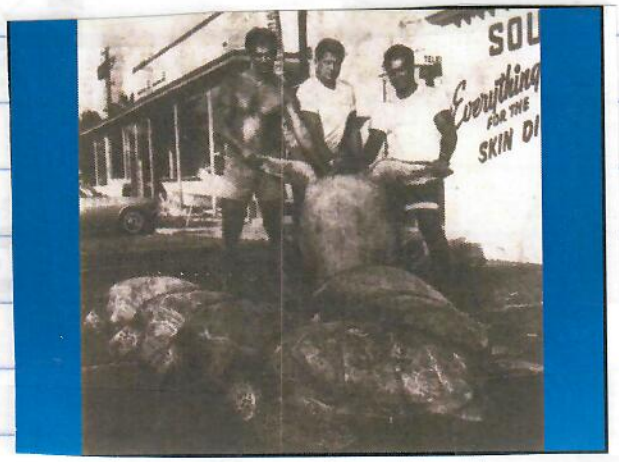

Releasing Turtles for Research
海龟放流的研究机会


Sea Life Park Hawaii
Partnership Research




Hawaiian Green Turtle, Chelonia mydas

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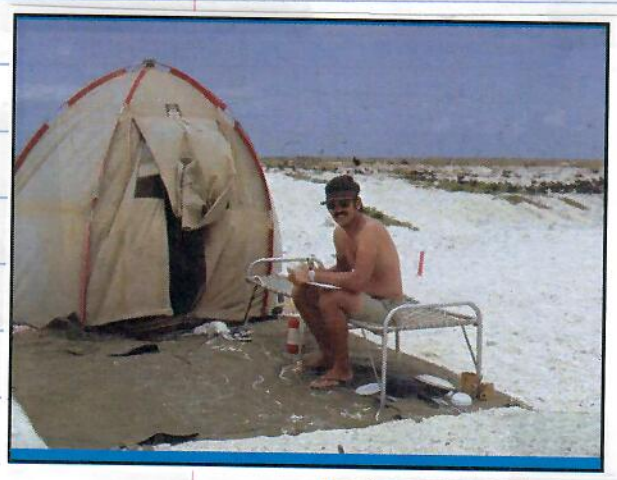

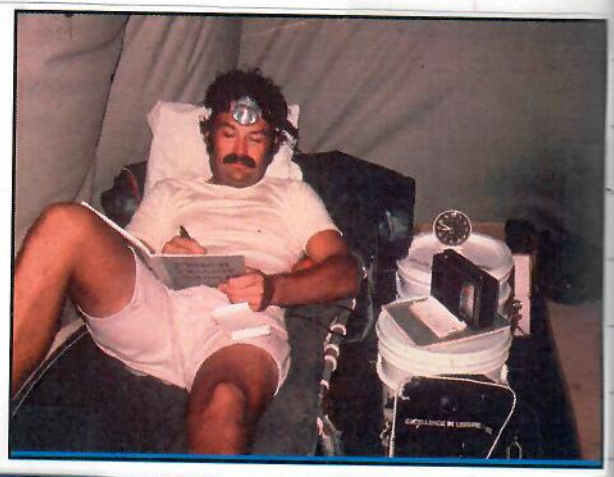

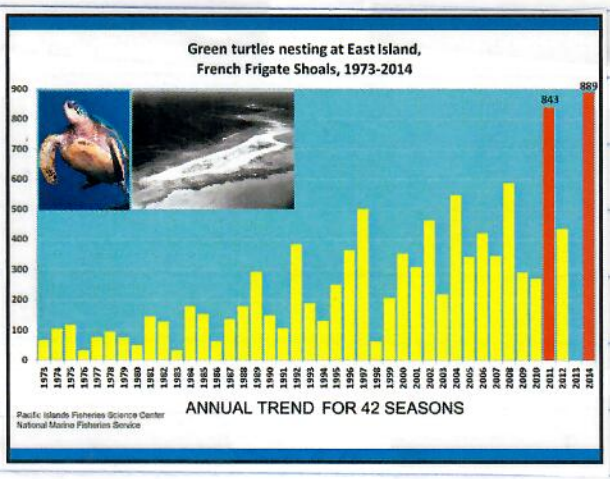
Green turtles nesting at East Island,
French Frigate Shoals, 1973-2014
900
800
700
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500
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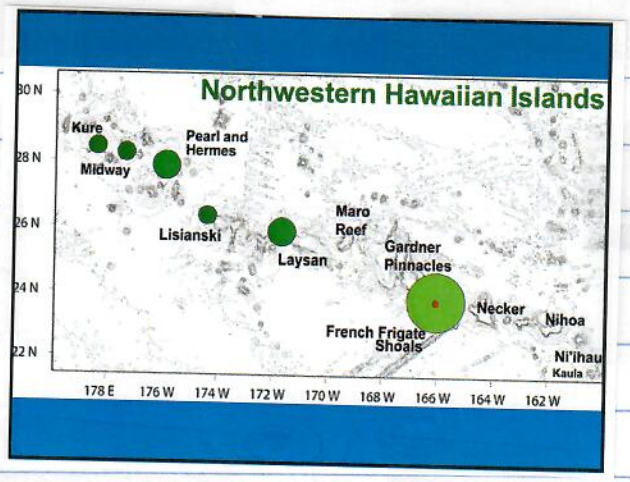
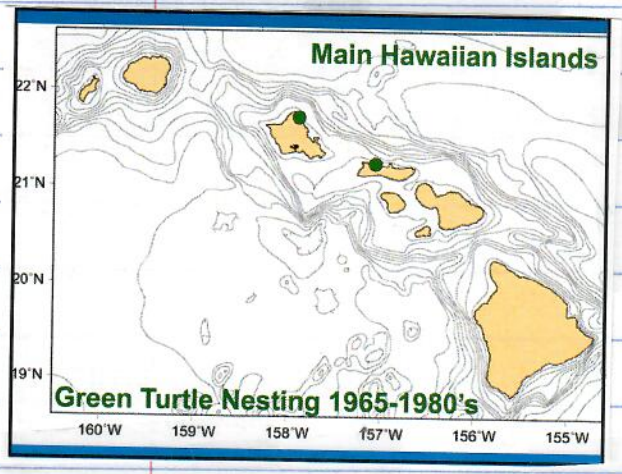
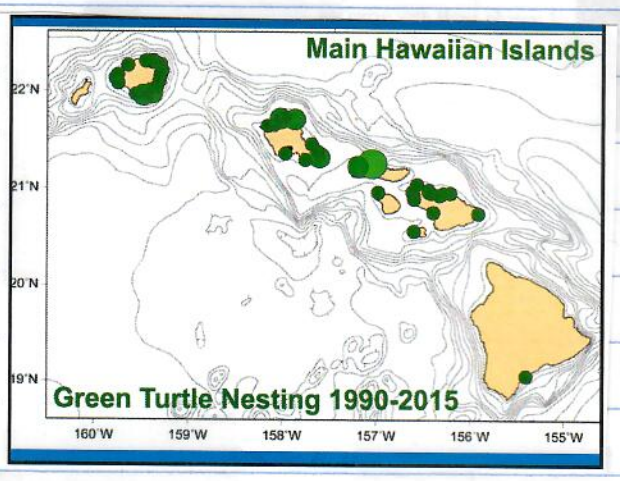
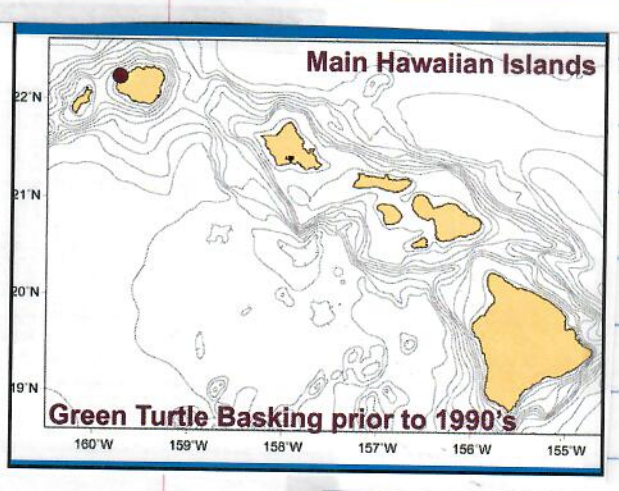
843
889
1973 1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014
ANNUAL TREND FOR 42 SEASONS
Pacific Islands Fisheries Science Center
National Marine Fisheries Service

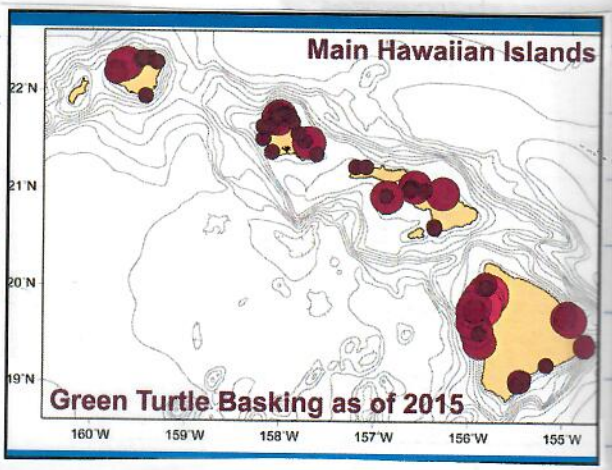

Northwestern Hawaiian Islands
30 N
28 N
26 N
24 N
22 N
Kure
Midway
Pearl and Hermes
Lisianski
Maro Reef
Laysan
Gardner Pinnacles
Necker
Nihoa
French Frigate Shoals
Ni'ihau
Kaula
178 E
176 W
174 W
172 W
170 W
168 W
166 W
164 W
162 W

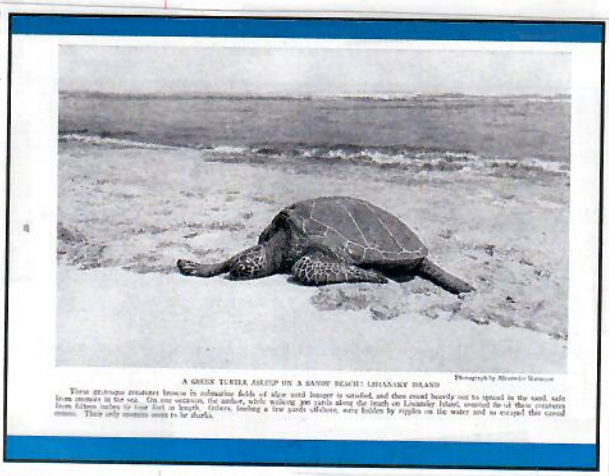

POLYNESIAN


Main Hawaiian Islands
22°N
21°N
20°N
19°N
Green Turtle Nesting 1965-1980's
160°W
159°W
158°W
157°W
156°W
155°W


Main Hawaiian Islands
22°N
21°N
20°N
19°N
Green Turtle Nesting 1990-2015
160°W
159°W
158°W
157°W
156°W
155°W



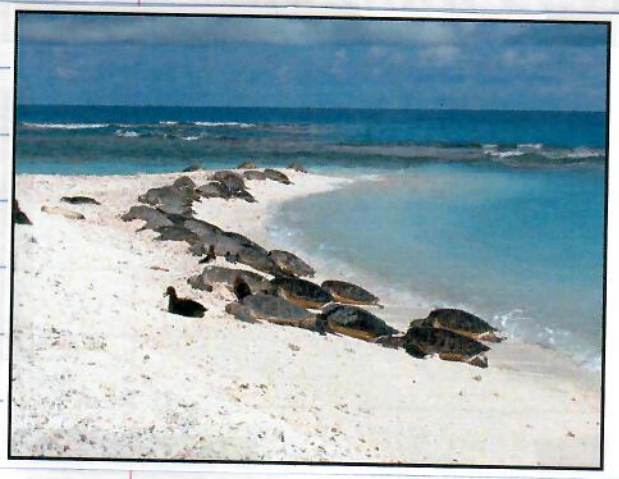


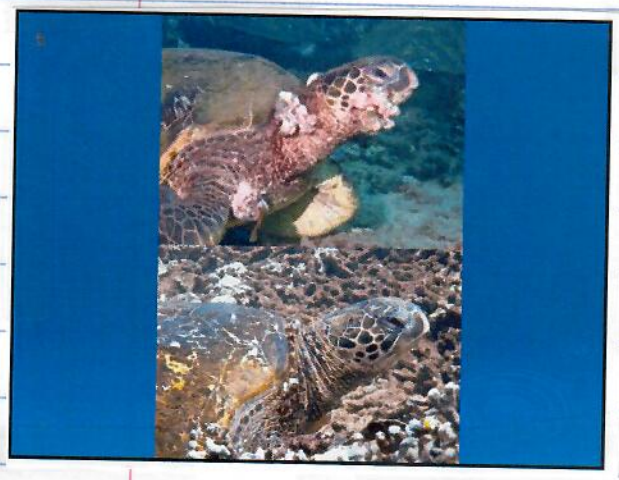


A GREEN TURTLE ASLEEP ON A SANDY BEACH: LISIANSKY ISLAND

Photograph by Alexander Wetmore

These grotesque creatures browse in submarine fields of alga until hunger is satisfied, and then crawl heavily out to spread in the sand, safe from enemies in the sea. On one occasion, the author, while walking ten yards offshore, saw hidden by ripples on the water and so escaped the casual ocean. Their only enemies seem to be sharks.





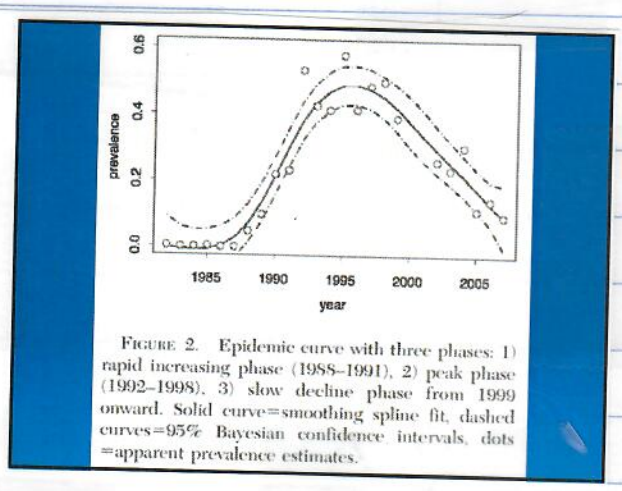
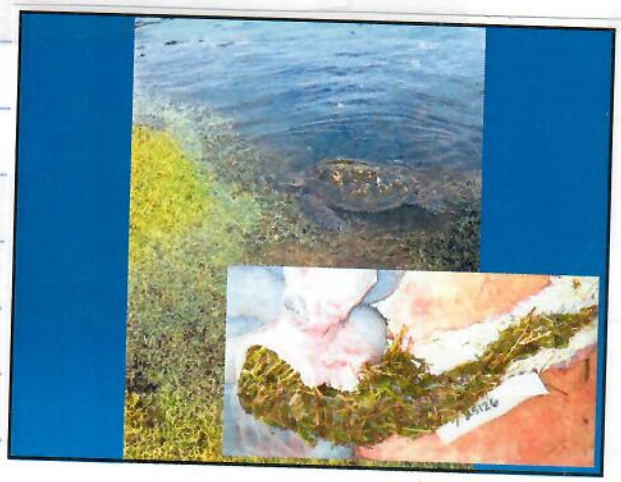
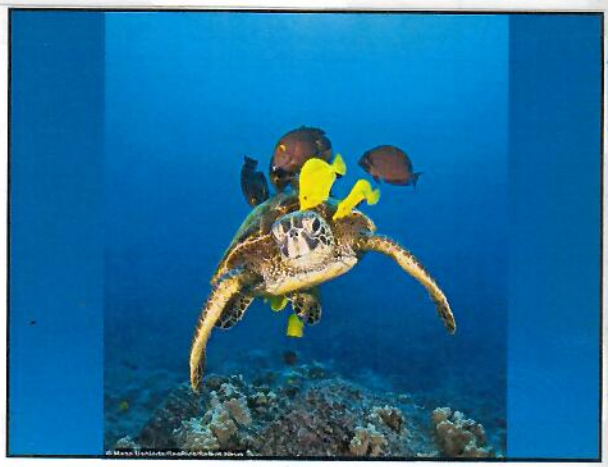
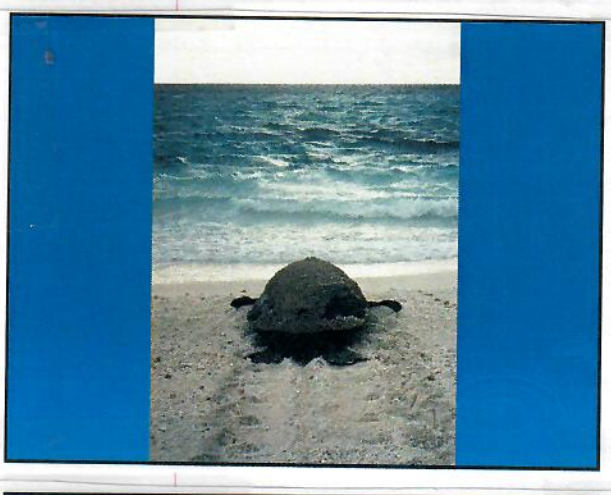


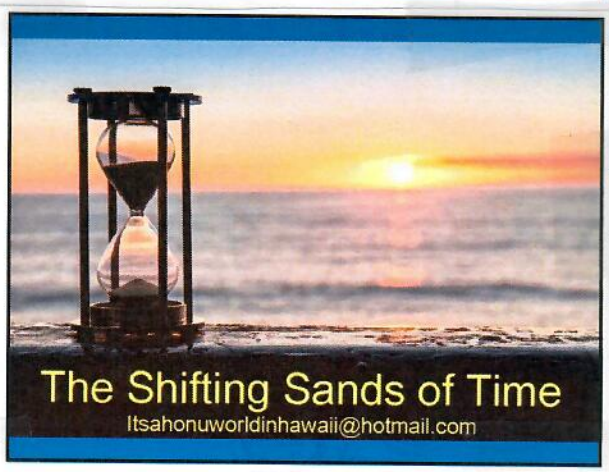
FIGURE 2. Epidemic curve with three phases: 1) rapid increasing phase (1988–1991), 2) peak phase (1992–1998), 3) slow decline phase from 1999 onward. Solid curve=smoothing spline fit, dashed curves=95% Bayesian confidence intervals, dots =apparent prevalence estimates.




Cleaning Behavior






The Shifting Sands of Time
Itsahonuworldinhawaii@hotmail.com

Surfers and bodyboarders headed to the surf break known as Queens at Waikiki Beach on Monday. The high surf is expected to gradually diminish by midweek.

HSA 6/2/15

1 killed and dozens rescued as high surf pounds islands

Star-Advertiser staff

A large south-southwest swell kept Oahu lifeguards busy for a second consecutive day and was blamed for a death on Hawaii island.

According to Ocean Safety officials, lifeguards made 57 rescues and 745 preventive actions as of 4 p.m. Monday as wave heights reached 12 feet along the south shore.

Off Hawaii island, a 26-year-old Kailua-Kona man died Monday after apparently being overcome by high surf in waters off the Natural Energy Laboratory of Hawaii beach park.

According to police, Richard Demby was found at about 5:45 p.m. in about 25 feet of water.

Oahu Ocean Safety officials had arranged for additional rescue watercraft to be on hand in anticipation of increased activity.

An Ocean Safety report affirmed that most of Monday's rescues were indeed conducted using rescue watercraft.

The division had earlier warned ocean users to be aware of the heightened danger and not to test their capabilities in the potentially treacherous conditions.

However, the lure of big surf in town proved powerful for hundreds of surfers, bodyboarders and other beachgoers on Monday.

Lifeguards reported incidences of broken boards and leashes and assisted surfers who found conditions too challenging for their abilities.

The swell, which arrived late Saturday and was initially forecast to diminish by Monday, is the result of a powerful low-pressure system in the South Pacific.

On Sunday, lifeguards conducted 17 rescues and nearly 600 preventive actions.

A high surf advisory remains in effect for the south shores of all islands until 6 p.m. Tuesday.

The public is advised to remain mindful of strong breaking waves, shorebreaks, and strong longshore and rip currents that could make swimming difficult and dangerous.

Surf along south shores is expected to drop to 6 to 10 feet and gradually diminish by midweek, when a smaller south swell is expected to arrive.

A long-period east swell generated by Hurricane Andres in the east Pacific is also expected by midweek and surf along east shores may build to advisory levels by the weekend.

In addition, a moderate northwest swell is possible beginning Friday night, which could continue through the weekend.

5/30/2015

Star Advertiser
today
MONDAY SECTION D 11/21/11

FEATURES EDITOR
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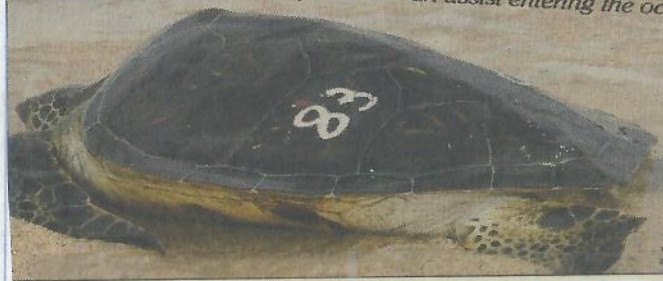
With a little help from their friends

Sea Life Park gives young sea turtles an assist entering the ocean for the first time



By Nina Wu

Upon hitting the Makapuu shoreline on a warm fall evening, dozens of Hawaiian baby green sea turtles instinctively scramble as fast as their little flippers will take them toward the ocean.

Once they hit the saltwater, their flippers become like wings, taking them on a flight through the ocean — and their first taste of freedom.

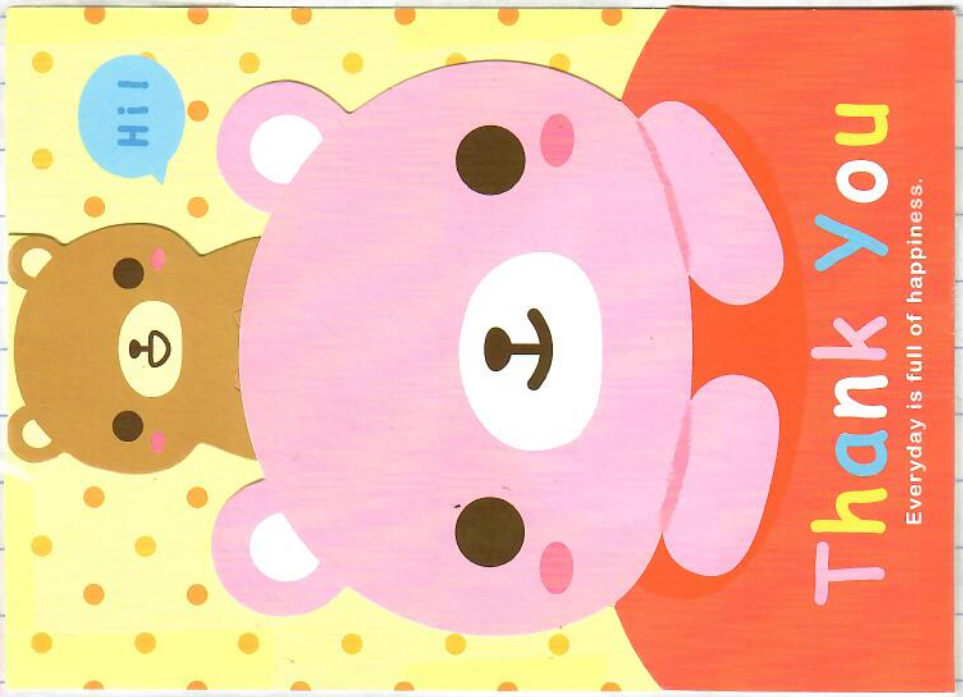
Every year, sea turtle hatchlings go through this nighttime ritual.

What makes this latest batch of turtles different from others is that they were bred in an artificial lagoon right across the street at Sea Life Park

5/28/15 HSA

Chinese dredging vessels are seen in the waters around Mischief Reef in the disputed Spratly Islands in the South China Sea. China intends to project naval power in the open ocean in coming years, and not just defend the country's coastal waters, according to a strategy paper released Tuesday.

U.S. NAVY PHOTO VIA NEW YORK TIMES



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