

AUSTIN 1994

BALAZS (808) 286-2899

**BALAZS**  
COMPOSITION

**AUSTRALIA**

JUNE 98 - MORETON BAY - FP

JUNE 99 - BRISBANE PROGRAM REVIEW P.154

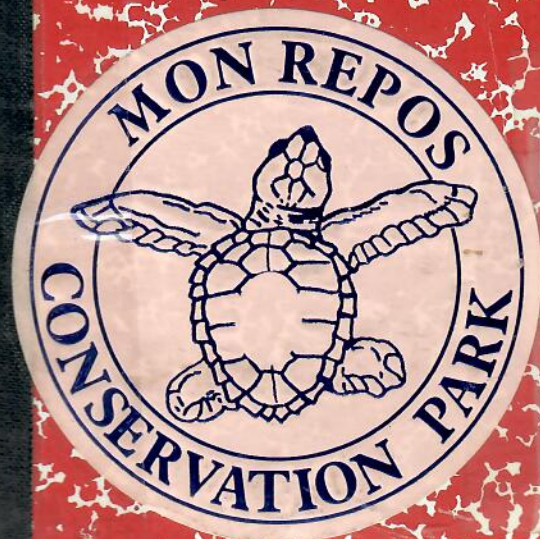

100 sheets • 200 pages • 100 hojas  
9 3/4 x 7 1/2 in / 24.7 x 19.0 cm  
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NMFS, HONOLULU LAB  
Marine Turtle Research  
2570 Dole Street  
Honolulu, HI 96822-2396

JANUARY 03 - HERON IS.

DECEMBER 03 - MON REPOS

**GEORGE H. BALAZS**  
ZOOLOGIST AND LEADER  
MARINE TURTLE RESEARCH  
and  
Regional Vice Chairman for the Pacific Islands  
IUCN Marine Turtle Specialist Group



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mead


3-11 JANUARY 03 HERON ISLAND  
page 18

SQUARE  
DEAL

5- DECEMBER 2003 MON REPOS  
SCHEDULE PAGE 40

HORAIRE/HORARIO

RAINE Island PICTURES - P. 134

	1	2	3	4	5	6	7	8
TIME HEURE HORA	TERRY SPRAKER 1998 HISTO REPORT = P. 120							
MONDAY LUNDI LUNES	SYLVIA SPRING MTSG SAT. TRACK = P. 133 1998							
TUESDAY MARDI MARTES	MORETON BAY FLIPPER TRACING 6/98 = P. 14							
WEDNESDAY MERCREDI MIERCOLES	MORETON BAY 6/98 ALGAE/SEAGRASS PRESSINGS AND IDE PAGE 6 HERON ISLAND HISTORICAL NESTING TREND = inside & back cover							
THURSDAY JEUDI JUEVES								
FRIDAY VENDREDI VIERNES								
SATURDAY SAMEDI SABADO								
SUNDAY DIMANCHE DOMINGO	BALAZS							



Honolulu = 24.94.86.69

17

FAX Limpus office

Limpus (Mon Repo STATION) = 61 7 3247 5966  
07-4159 2628

Limpus (cell) = 61 ~~04~~ <sup>work</sup> 322 27718  
3821001

Limpus (Home) = 61 07 32454056

RANGER Station = (Rod Mackenzie)

MILANI = home 61 07 38783229; mobile 617 0419180554

ALONSO Cell = 1-508-400-3034

Heron Island Resort = 61(2) 9277 5050

QPWS Heron Island 61 7 4972 5690  
4972 9055

(After Hours) 61 7 4972 6275

\*Country Plaza Hotel (Quality) 4972 4499 Gladstone

(Janine Ferguson (ME)  
(worked recently at BOCK ISLAND and previously AT BARBADOS >1998)  
+ Sandy Point - leatherheads)

HERON ISLAND



MARINE CENTRE

TO DIAL USA from Australia: 00 11 1 ( )

2002 Dec

120 Night 60% previously tagged

\* FROM AUSTRALIA  
MCI ACCESS: 1-800-881100



1



93.28.4142 = 1883007

188-308-1: 2000-2011

PACIFIC SOUTH





Map of Queensland, Australia, showing major cities, rivers, and geographical features. A red line highlights a route from Cairns to Mackay. The map includes labels for the Torres Strait, Gulf of Papua, Gulf of Pentaria, Coral Sea, and Great Barrier Reef. Major cities like Cairns, Townsville, and Mackay are marked, along with numerous smaller towns and communities.



Date: Wed, 10 Jun 1998 09:39:36 -1000 (HST)  
 From: Shawn Murakawa <smurakaw@honolab.nmfs.hawaii.edu>  
 To: "George H. Balazs" <gbalazs@honolab.nmfs.hawaii.edu>  
 Subject: Re: Dr. Landsberg

- 1) Collect around 30g algae (not too much salt water) in plastic bag
- 2) Pour water from bag into graduated cylinder
- 3) Add water to make 100ml
- 4) Take algae out and weigh 30g of algae
- 5) Pour 100ml water + 30g algae back into bag
- 6) Seal then shake bag 30 times
- 7) Decant 50ml of water into larger labeled plastic bottle then add 10ml of 10% buffered formalin, swirl
- 8) When ready, swirl bottle 15 times
- 9) Pipet 10-12ml (couple ml from top of vial) water/formalin mixture into scintillation vials
- 10) Put parafilm on top of scintillation vials before sealing

Rinse measuring containers between each sample with salt water and be sure to change pipets with each sample. If you have any questions please feel free to email her at home.

10 mL Concentrated (37%) Formalin  
 90 mL Saltwater

*To MAKE 10% FORMALIN*

OR

10 mL Concentrated (37%) Formalin  
 10 mL 10% Aqueous solution Calcium Chloride [ 10 g powder mixed with 100 mL water]  
 80 mL Distilled water



Multan Born

(4)

The Sugar Dragon

Victoria  
Gardow

1983

1985

1998

"

PIT Lifeship NDL Assembly

P/N TX1700L 5-pack "

Destron - Freezing Conf.



RESEARCH & RESCUE  
FOUNDATION

Trevor Long  
Liaison Officer

Sea World Drive Main Beach Gold Coast Queensland  
PO Box 190 Surfers Paradise Queensland Australia 4217  
Telephone (07) 5588 2222 Facsimile (07) 5588 2187

2007

Fedex ADDRESS:

Ranger in Charge  
Queensland Parks & Wildlife Service  
Heron Island via Gladstone  
Queensland 4680 Australia



5

SEA WORLD I AT ANCHOR PM

6/15/98 5 27° 19.384' →  
Monday E 153° 23.383' E

40 Total - 14 greens 26 loggerheads

6/16/98 SAME place as above - loggerheads  
TOTAL 48 33 greens 15 ~~loggerheads~~

Blackley Anchorage  
new anchorage

6/16 late PM  
6/17

27° 34.5975  
153° 24.574E

6/17 early PM moved to:

GLADESTONE (from Soto)

- Metro Hotel 617 4972 4711
- Flag Inn 4972-1000
- Quality Hotel 4972-4499
- BW Camelot 4979-1222

we didn't  
stay at  
any of  
these



Fisher's  
Gutter 6/16/98

Low tide coming up  
9:30 am

(6)

[FG1]

Halophis + vouchers

[FG2]

" (double stake) No vouchers

FG3

Acanthopoda + vouchers

FG4

"Grass?" + vouchers →



[FG5]

"Grass?" + vouchers →

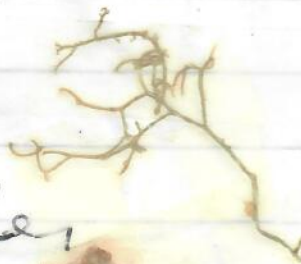


[FG6]

" No vouchers

FG7

Synidia + vouchers



FG8

? fine + seagrass? + vouchers



6/17/98 wed,

BA9

Halophis + vouchers

BA10

" (No vouchers)



BA11

AUGA(?) + vouchers →



BA12

~~fine~~ (No vouchers) →



BA13

fine + vouchers →





7

**Moreton Bay, Australia, Samples 16-17-18 June 1998, Collected by George Balazs**

Identifications of sea grass and algae species by Dennis J. Russell, 22 Dec 1998  
I am not familiar with the Australian species of sea grasses or algae and do not have a library for these species. The following is based on what literature I have available.

Moreton Bay, Australia, 16 June 1998

FG1

Halophila ovalis (sea grass)

FG3

Acanthophora spicifera

Covered with many fine hairs

FG4

Halodule beaudettei (sea grass)

FG5

Halodule beaudettei

FG7

Spyridia filamentosa

FG8

Full of very fine Ceramium sp.

On the leaves of Halodule beaudettei

Moreton Bay, Australia, 17 June 1998

BA9

Halophila ovalis

Hypnea valentiae

BA11

Hypnea valentiae

BA12

Dictyota sp.

Hypnea valentiae

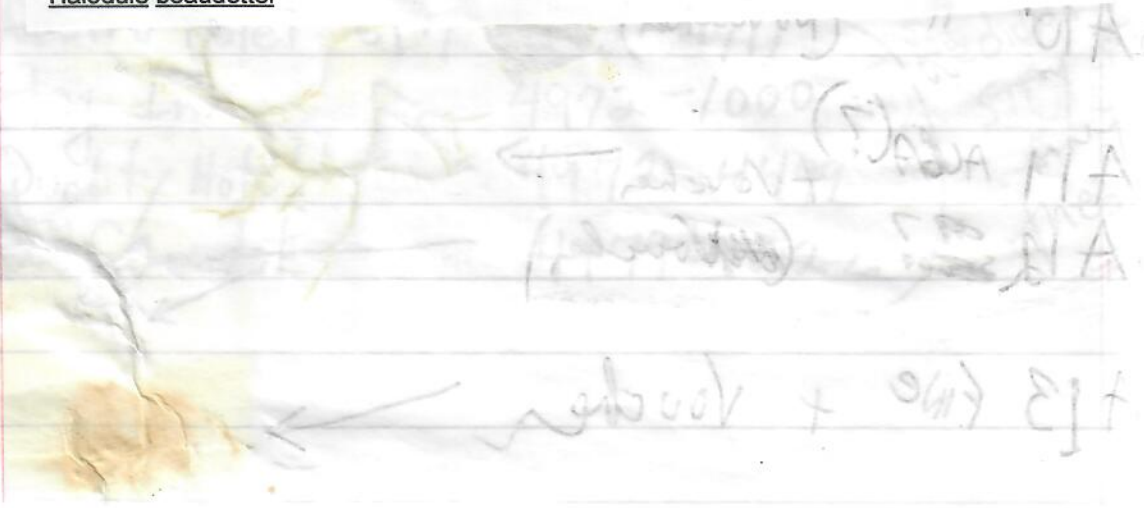
Acanthophora spicifera

Spyridia filamentosa

Halodule beaudettei

Handwritten notes on the right margin of the page, including dates like 6/15/98 and 6/16/98, and other illegible text.

Handwritten notes on the left margin of the page, including dates like 6/15/98, 6/16, and 6/17.





6/17/98

(8)

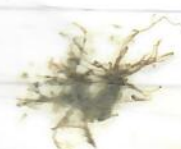
BA14 wide  
Seagrass + voucher →  
w/ sediment



BA15 narrow  
Seagrass + voucher ↓



BA16 Turf w/ silted  
Near shore Rinse Voucher  
under trees



~~BA17 Same as BA16 w/out silted Rinse (No Voucher) (spitted)~~

BA17 Halophila + voucher →  
(M. Rice)



M. Rice BA18 above but  
w/out silt No Voucher  
(Clean Rinse)



M. Rice BA19 Caulerpa  
serrulata + Voucher →



BA20 (Clean Rinse) No Voucher

found in samples  
↓





9

BA13  
Dasya sp.  
Hypnea valentiae  
Halodule beaudettei

BA14  
Halodule beaudettei

BA15  
Halodule beaudettei

BA16  
Filamentous mat of Cladophora sp.

BA17  
Halophila stipulacea (sea grass)

BA19  
Caulerpa taxifolia

Moreton Bay, Australia, 18 June 1998

MB21  
Acanthophora spicifera  
Covered with fine hairs, may be male

MB23  
Spyridia filamentosa

MB24  
Hypnea nidifica (covered with snail eggs)  
Halodule beaudettei  
Hydrozoan colonies  
Amphipods  
Snail shells

MB25  
Cystoseira sp. (perhaps it is C. articulata)  
5.0cm tall and only 1 mm thick, bladders 2-3 in a row, 2mm diameter, conceptacles present on cylindrical receptacles

MB26  
Hypnea valentiae

MB31 Zostera + Vocheria





Blue Hole "Same as first night" 6/15-9/15  
 AM, Anchor NEAR  
 (10) MB

6/18/98 27° 22.42'  
 153° 21.419

Moreton  
 Banks

Algae collected near oyster Reefs  
 MB21 ACANTHOPHORA + Voucher

MB22 ACANTHOPHORA (no voucher)

MB23 fine filaments + Voucher

MB24 "Mixed" + Voucher  
 algae/grass

MB25 Alga + Voucher

MB26 H. musciformis + Voucher

MB27 Prop line in grass? SYRINGADINUM? + Voucher  
 Narrow grass

MB28 wide grass + Voucher

MB29 Halophila + narrow grass Voucher

MB30 Halopistis + Voucher  
 grass





11

MB27  
Halodule beaudettei  
Piece of Halophila ovalis mixed in

MB28  
Halodule beaudettei

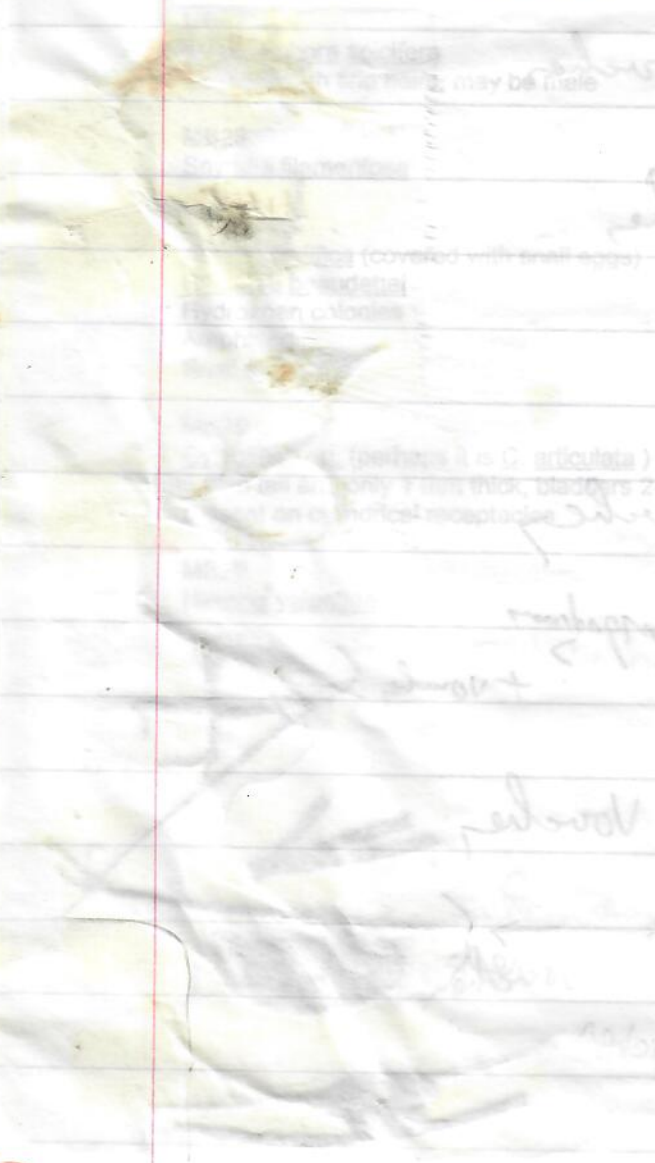
MB29  
Halophila ovalis  
Halodule beaudettei

MB30  
Halophila ovalis

MB31  
Spyridia filamentosa  
Syringodium isoetifolium (sea grass)

AM, Archer  
2/18/88  
123021  
MB21 Acrostichum  
MB22  
Ancistrum

MB23  
MB24 Mixed  
MB25  
MB26  
MB27  
MB28  
MB29  
MB30  
MB31





MORAY BY Australia

# FLIPPER TRACINGS

6/15-6/19/98 (12)

TAG	cm CCL	cm SCL	kg NWT	Flippers HINDS	Flippers FRONTS	FB
1 T92023	64.5	59.9	59.0	✓	✓	Y
2 ♂ T79953	62.5	56.8	56.4	① ✓	✓	Y
3 T71200	65.0	60.0	59.1	② ✓	✓	Y
4 T80269	65.0	60.1	59.5	③ ✓	✓	Y
5 K17066	54.5	50.5	49.3	④ ✓	✓	N
6 T54780	65.5	59.5	58.9	⑤ ✓	✓	<del>Y</del>
7 T64367	61.5	57.3	56.9	⑥ ✓	✓	Y
8 K10030	101.7		117Kg	✓		<del>Y</del>
9 K7324	46.5	43.4	42.9	(FP=1)	✓	N
10 K10029	107.4		157.5Kg	✓		<del>Y</del>
11 K10048	84.5		66Kg	✓		<del>Y</del>
12 T57231	88.7		77.5Kg	✓		<del>Y</del>
	(Tagged in 1991)					
13 N729/T67494	83.0		69Kg	✓		<del>Y</del>
14 K7499	49	45.9	45.1	R4	✓	<del>Y</del>
	Hump's carapace.					
15 T50984	62.0	57.0	56.5	⑦ ✓	✓	<del>Y</del>
16 K9816	56.5	52.0	51.2	✓	✓	<del>Y</del>
17 K9815	52.0	48.0	47.2	⑧ ✓	✓	<del>Y</del>
18 T178643	62.5	58.3	57.1		RFL	<del>Y</del>
19 K9817	47.0	43.8	43.2	⑨ ✓	✓	<del>Y</del>
20 T53662	86.0		68Kg	(FP) ✓		<del>Y</del>



FLIPPER TRACINGS  
 JUNE 1998 MORETON BAY, AUSTRALIA

(14)

Sex	Tag#	cm CCL	cm SCH/N	WT.	FLIPPER HIND <del>FLIPPER</del>	FLIPPER FRONT	PRS
21	K7107	58.0	54.2/53.2	?	(10) ✓	✓	-
22	T79231	62.5	68.2/57.3		(11) ✓	✓	-
23	T93098	87.6	-		✓	-	-
24	T93100	61.5	57.4/56.9		(12) ✓	✓	-
25	K7104	58.5	54.7/53.9		(13) ✓	✓	Y
26	K15142	60.0	56.3/55.4		(14) ✓ (15)	✓	-
27	K7430	59.0	55.4/55.2	23kg	✓	✓	Y
28	K15144	52.0	49.4/48.6		-	✓	-
29	NOT RECORDED	50.0	46.8/46.2		-	✓	Y
30	K8611	49.8	47.1/46.5	13kg	-	✓	-
31	K17096	51.5	48.8/47.9		-	✓	-
32	K15141	103.6	-	-	146.5kg ✓	-	-
33	T93082	101.2	-	-	137.5kg ✓	-	-
34	T54442♂	94.4	-	-	93.5kg ✓	-	-
35	T93083	82.4	-	-	✓ PAPER MONITOR	-	-
36	T51134	87.9	-	-	83.5kg ✓	-	-
37	K10032	105.2	-	-	145kg ✓	-	-
38	K15128	98.9	-	-	- ✓	-	♀ -



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FLIPPER TRACKING 2

Date: Thu, 20 Aug 1998 10:46:52 -0700  
From: Colin Limpus <Colin.Limpus@env.qld.gov.au>  
To: "BALAZS, George" <gbalazs@honlab.nmfs.hawaii.edu>  
Subject: turtles - what else

Australia  
Redun

Hi.

Thanks for the note re swab results.

#34 which was positive for salmonella should be my turtle :  
T91896: Loggerhead female immature, CCL=82.1cm, no significant  
external lesions in evidence.

The clamidia tests are stil in progress. The few that I received  
results on were all negative.

I leave to morrow for 2 weeks in Malaysia to conduct a training course  
in turtle management for the ASEAN country fisheries agencies - reps  
from vietnam, thailand, malaysia, philippines, Indonesia, Brunei,  
Mayamar at least. I will be interesting to say the least. The main  
emphasis is on management of egg harvest and hatcheries. There will be  
a half day session on bycatch reduction. This latter part is being  
instructed by the local fisheries experts.

I will be back on 4 September. I will have no access to my email in  
that time. Contact Leisa at home if there is anything urgent. She will  
know how to contact me in Terengganu.  
Have a happy day

+-----+  
Colin Limpus  
Conservation Strategy Branch  
Queensland Department of Environment & Heritage  
Tel: 61 7 32277718 Fax: 61 7 32276386  
E-mail: col.limpus@env.qld.gov.au

Handwritten notes and lists on the bottom half of the page, including a list of turtle IDs and dates:

- K12158 8.1.9
- K14435 10.2.5
- T21134 8.1.9
- T33083 8.1.9
- T24445 8.1.9
- T33082 10.2.5
- K12151 10.3.9
- K11001 2.1.2
- K8811 4.1.2



Date: 18 Aug 1998 09:01:16 -0400  
From: Alonso Aguirre <Alonso.Aguirre@noaa.gov>  
To: gbalazs@honlab.nmfs.hawaii.edu, Alonso Aguirre <Alonso.Aguirre@noaa.gov>  
Subject: Re:Australian salmonella

Reduce Australia Book

Geo,

Thank you for the excellent field trip. We got good samples. The info on Salmonella as follows. Pls refer to my ID from the field forms we got you because I never used Colleen's ID number. Hope this helps. Aloha, See you ma-ana, AA

>From 25 cultures performed:  
#34 - Salmonella serotype Mt. Pleasant  
#s 29, 30, 43,44,39, 42, 36, 37, 52, 35, 30, 27, 32, 26,28, 40, 41, and 31 - All with moderate to large numbers of Pseudomonas putida  
#s 38 and 42- small numbers of Aeromonas hydrophila

Hope this info can keep our Australian host happy. By the way, ask him about the results of Chlamydia, I am curious. More later.

Reply Separator

Subject: Australian salmonella  
Author: gbalazs@honlab.nmfs.hawaii.edu  
Date: 8/17/98 12:08 AM

Alonso, I want to show Limpus we are making some progress. Which turtle was + for salmonella? Mahalo, Geo.

Date: Mon, 21 Sep 1998 09:59:04 -0600 (MDT)  
From: Spraker Terry <tspraker@vth.colostate.edu>  
To: "George H. Balazs" <gbalazs@honlab.nmfs.hawaii.edu>  
Cc: Terry Spraker <tspraker@vth1.vth.colostate.edu>, Alonso Aguirre <aaguirre@infonet.tufts.edu>  
Subject: Re: Histo Samples from Moreton Bay, Australia

Reduce Australia

Dear George and Alonso  
George I did receive the 3 samples and am starting to read the biopsies. The only problem was cassette # 10 was open and we could not find the biopsy. I assume the tissues were lost when the formalin was discarded. Hopfully I will be able to give you all of the results within two weeks.

IN AUSTRALIA

Talk with you soon. I still do not have a phone or computer yet. I will keep it touch.



(17)

# Heron ISLANDS JANUARY 3-11 AUSTRALIA 2003

1/3/03 Friday w/ MARC RICE  
140AM Depart QANTAS Flight 4 Honolulu -  
10.5 hour flight - Arrive 8:30AM (3 hours  
behind Honolulu one day ahead)

(International Rent-a-phone via Verizon works  
fine - call forwarded 286-2899.)  
Departed for Brisbane 12:15 Noon  
1:15 flight (Brisbane arrive  
12:30 pm (4 hours  
behind  
Honolulu)

- 1/4/1/2 Time Marc - <sup>dissertation</sup> or paper P.D. to write up - TO Him
- Go get/see 5690
- Perron JON USA

Tropic of Capricorn = 23° 26.5' South

Turtles don't digest food well / slow growth - due  
biotoxin some property of algae in diets

Lyngbya occur in Florida? - Antigua Bahamas?

1/4/03 Departed for Gladstone <sup>Met Alonso and Alex at Brisbane -  
AUSPOC</sup> twin engine prop  
Saturday "DASH" plane 12:15pm arrive 6 hour flight  
2:15pm (Gladstone 4 hours behind Honolulu)

\*5K TAXI to Country Hill Pizza hotel #110 AU. Dinner at  
Cactus Jacks! Bottle shop wine.

5 JANUARY 03 Sunday - Breakfast at hotel



Sunset = ~~with~~ in  
Sunrise = ~ 5:15 AM

## TRIP Objectives:

- Collected Tumors/Skin From nesting greens in. 2 formalin for histopathology (whole or section or punch biopsies of the tumors)
- Photograph Above tumors for visual documentation.
- Obtain history of origin of <sup>(previously TAGGED)</sup> turtles to reflect tumor prevalence
- Record occurrence of tumors at <sup>flipper</sup> leg sites
- Collect Chelonibia barnacles, in alcohol (OR DRIED)
- Photograph (As possible) the pigmented conjunctiva
- Video of nesting <sup>sequence</sup> (early a.m. straggler so that sufficient light is available)

A few taken by Max

North Beach  
45

Rubble 51

3 new turtles

1 logger



(19)

# HERON ISLAND

Gladstone =  
- Aluminium Industry  
- RAIL coal delivery 35,000 Population

5 January 03 restaurant buffet.

~~Saturday~~ Departed to Heron 11AM on Catamaran

2 hour trip - arrive about 1pm. Island has 3 components: ① Resort; ② VP Research Station; ③ Parks & Wild

(Turtle Research). Had discussions on objectives - history of  
Met "ME", Jodie, Col (etc) - Research station; <sup>worked turtles at least since 1999</sup> LE5 **BAUER**  
Red Mackenzie - Rovers. <sub>Mixed FORMALIN</sub>

Hard to prohibit lights due to liability if someone inj

6 JANUARY 03 Sunday #5 AM

~~Monday~~ ~~Saturday~~ Smoothie drink w/ Alonso, Alex & Mac  
at pool bar. <sup>stay-in</sup> BBQ dinner at turtle station.

NIGHTL

Slept from 8pm 10:30pm "Turtle Time" (= Same as Gladstone)

Up at 10:30pm 2 Teams - Les & "ME", Marc, GB, Alonso, Alex  
along lee (north side); Tim and Jodie (Rock BAND) along South (windy  
side). 10:30 - <sup>130 AM</sup> 3 hours - <sup>07:35</sup> 45 turtles encountered

by us (14 greens, 1 loggerhead); 5\* by windward team

(15 greens, 1 loggerhead inspected for growths -

one turtle had \* knobby projection left dorsal

shoulder \* cutoff and put in 2 <sup>VIALS</sup> sample jars by Alan

photos taken also digital by Mac Rice. Turtle also has

an enlarged joint (distal humerus) to left front flipper -

perhaps an old fracture.

near  
Heli Pad  
and PIET



HERON ISLAND

5-6 January 03 Hatchling found - brought to house -  
 photos by MARC digital  
 Judi & ME released it - at release saw whitish  
 object 450 <sup>in sky</sup> horizon - like beach cup - divided  
 into 3 equal parts - lasted for many  
 records of 230am estimate (twice time).  
 Slept until 830am... walked around  
 Resort - ate lunch (40) w/ Alonso & Alex 1230 -  
 ~1.5 hours

6 JANUARY  
 2003  
 0220 hours  
 (twice time)

6 January 03 Dinner @50 Alonso, Alex, GB, Marc.  
 Tues. Slept awhile up 1045pm, depart 11am  
 Les BAUER covered South Beach by himself.

NGHT  
 #2

AA, Alex, MARC, me, Janine, Jude (+ 4 from  
 Syracuse NY - students.  
 First sample - nub of skin from trailing edge  
 of FF - 10% formalin vial.  
 Second sample \*projectile from shoulder\*  
 Third - normal skin biopsy  
 Fourth - normal skin biopsy  
 + Barrocles from 4 (2 each from 3 & 1 from 1)

7 January 03 Slept 330am - 630am  
 Tuesday AM → 630<sup>am</sup> → 2 hours walked around  
 island made 30min video



(2)

# SKIN BIOPSY - TUMOR SAMPLES IN 10% FORMALIN

DATE	Night of	WIGHT	TAG NUMBER	CEL	DESCRIPTION
1/5/03	Sunday	1	T88397	Q11314, Q11315	111.2 Smooth projectile left shoulder
1/6/03	Monday	2	K53577	Q11318	107.1 Small Projectile Shoulder
1/6/03		2	K53405	Q11317	101.5 2 Normal skin Biopsies - 2 Turtles
1/6/03		2	K57213	Q11316	
1/7/03	TUES	3	T88397	Q11310	110.1 <del>SAME</del> TURTLE FF 1/5/03 biopsy
1/7/03		3	K18756	Q11313	109.3 Necrotic spot Front Flipper
1/7/03		3	T5338	Q11312	111.3 2 Normal skin Biopsies - 2 Turtles
1/7/03		3	K393	Q11311	101.2 FOLD OF SKIN Front Flipper
1/8/03	wed	4	T61247	Q11308	91.4 Small Projectile under FF Scale
1/8/03		4	K438	Q11303	106.4 Total small growth left/right shoulder
1/8/03		4	K4349	Q11307, Q11306	107.14 likely Necrotic spot FF Biopsy punch
1/8/03		4	K57442	Q11305, Q11304	103.8 Projectile FF CUT off
1/8/03		4	K53218	Q11302	108.2
1/8/03		4	K57334	Q11301	108.2
1/9/03	thurs	5	T5320	Q11295	92.3 Growth by tag
1/9/03		5	K438, T61247	Q11293	100.8 Growth by tag
1/9/03		5	T6309, T35868, K9610, T64864	Q11294	
1/10/03		6	No Turtles encountered w/growth		

1/6/03 2 K57250 Q11319  
 1/7/03 3 K55590 Q11309

NUB of 5: TRAILING RFF

NUB of 5: for Nancy Fitzsimmons NA ACC

Marine Turtle Research  
 NMFS HONOLULU LAB  
 2570 Dole Street  
 Honolulu, HI 96822-2396

8 likely FF Related  
 smallest nest ever seen



IN ALCOHOL

SAMPLE LIST - BARNABLES

Description	DATE	TAG NUMBER	OCL	NO. ITEMS
1) Chelonia estuarina	1-6-03	K53556 Q11300	99.4 cm	2
2) "	1-6-03	K49171 Q11297	115.5 cm	2
3) "	1-6-03	K57124 Q11298	?	1
4) "	1-6-03	K53405 Q11299	101.5	2
5) "	1-7-03	K57435	95.4	2
6) 2 of 24 on Turtle	1-7-03	K57466 K5784	103.7	2
7) Large from head of level	-7-03	K55590 Q11296	77.0	2
8) ←	1-7-03	K12468	105.1	1 <sup>TAIL</sup> scales 43 small
9) "	1-8-03	K49173 K55592	106.4	2
10) "	1-10-03	K53241 K55526	106.9	5
11) "	1-10-03	T66841		5

~~From Limpis~~

- Need (1) Total # individual turtles examined during the 6 nights.
- (2) For banded turtles, with existing tags, what is the tag history/locations.
- (3) Prevalence of growths seen at Heron past years.



23

# SKIN Biopsy - Tumor

MS 4/1/83A

## Needs

- Call Janine for follow-up and encouragement
- FAX Limpus Dutton CITES + Fedex Account
- Flipper Tracamp Mreetas
- Janine - Dutton?
- 5690 while Karen is here?
- Copy of Warehouse + Kay's Turtles. <sup>Address</sup> <sub>Cart + Ma</sub> <sup>+ News</sup> <sub>article</sub>
- START other TDPs
- Andrew Smith Sat tog 5T14
- FAX CITES TO Limpus
- Xerox Barn list to John Zardus
- Call Colin
- Sat Tog to Limpus

Marine Turtle Research  
4575 HONOLULU LAR  
1570 Laie Street

total # individuals - 100  
 for 100 turtles with existing tags, what is the best way to identify them?  
 The best way to identify them is to use a unique color combination for each turtle.



# Heron

(24)

7 January 03, Breakfast at Shearwater Restaurant  
Tuesday #30 AUS = 0.6 AUS = 1 US\$

900am Heron Time (= 8 AM Turtle Time)

Karen Arthur arrived ~ 1 PM. I slept for 2 hours. Mtec went on scuba dive 3 PM. 1 loggerhead in ledge & 1 juvenile green seen. Pasta Dinner at Turtle Station. At sunset we saw and videoed hatching emergent - gulls waiting to eat them.

7-8 Jan. NIGHT #3  
14191 N. #3  
2003

Slept until 11:30 AM - 11:30 A - 3 AM on beach - lots of video with just flash lights. Samples =  $\textcircled{*}$  biopsy of <sup>spot</sup> (necrotic) on dorsal right front flipper; + 1 each round skin from 2 turtles; +  $\textcircled{*}$  50% of smooth fibrous growth removed w/ scalpel from near base of left front flipper  $\textcircled{\otimes}$ . Growth had smooth "healed" cuts through it of former biopsying (?).

\* SAME \*  
Turtle #2  
As night #2

From 6/98 ~~Martin Bay 2~~ NOPE! SAME TYPE - Swollen area to joint of left front flipper.

Saw 77 CCF cm green copulation scabs + old deep scratches from <sup>riper</sup> shark. Video. Not seen nesting.

Also reported seen South Beach 125 cm CCL.

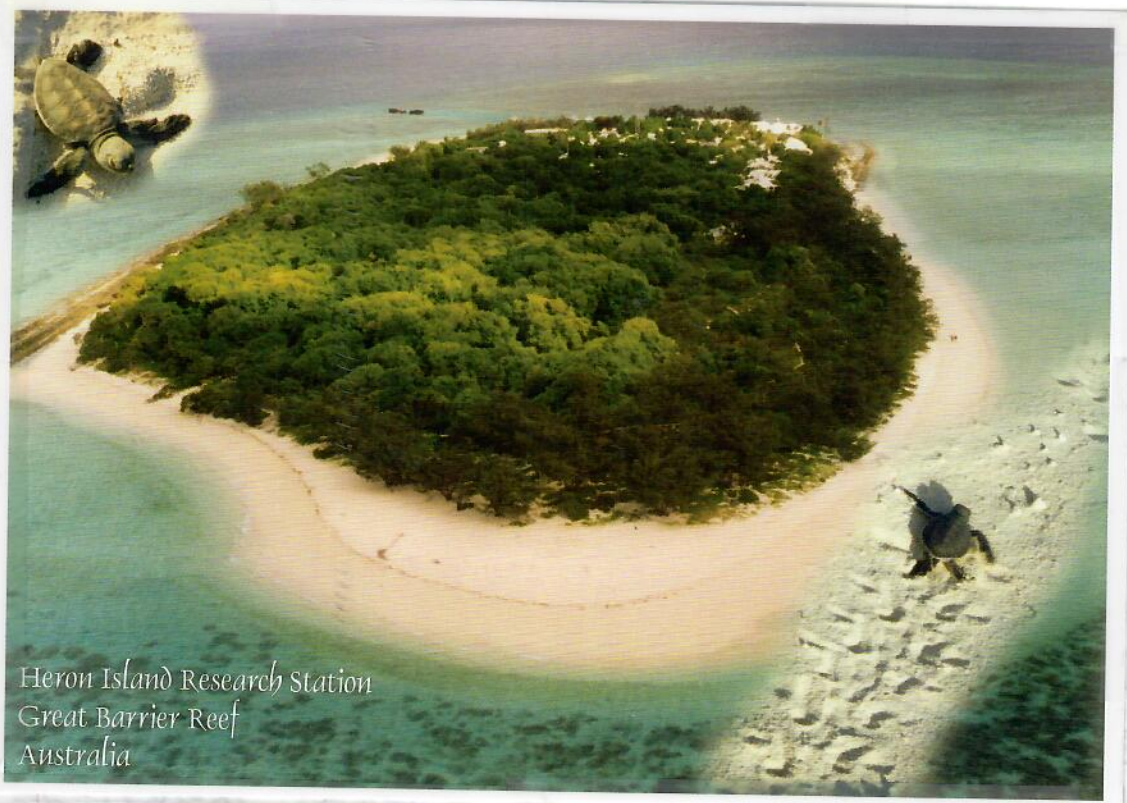
wednesday  
1/8/03

Slept ~ 3:30 AM TO 9:30 AM.



25

Ferson



Heron Island Research Station  
Great Barrier Reef  
Australia

HERON ISLAND



MARINE CENTRE

MARINE CENTRE



HERON ISLAND



# HERON

(26)

1/8/03 ~ 11am signed up for Scuba dive (Bottle  
 Wednesday discount rate \$15 avs (regular \$50) - rented  
 fins, BC, and regulator (\$15 avs), 3pm on boat  
 for 15 divers - motored to 15m deep location NW corner  
 of Heron reef, 45 minutes. Reef edge - saw abundance  
 of fish - giant clams (2-3 <sup>diameter</sup>), 6 mantle rays, overhang  
 with some coral broken - possibly used by turtles.

Returned ~ 5pm. Had dinner BBQ at  
 Pool Bar (\$50 avs) with Marc - AA & Alex were already  
 there, entertainment Marc and I walked around the 15m reef  
 after dark - circumnavigated, saw  
 large chitons, low tide, 2 out by Heron.

Slept ~ 8:30pm - 11:30pm. Out <sup>on beach</sup> monitoring 12:30am - 4am

Again, about 100 turtles about equal split north  
 and South beaches. A loggerhead was up again,  
 but I didn't see it. Biopsies taken

1st fold of skin ventral front flipper (possibly  
 atypical skin-scale)  
 just a flap from an old injury (south beach)

Second Biopsied turtle was <sup>(\*)</sup> projectile  
 under flap of FF scale <sup>(\*)</sup>. Third for the  
 night north side of Shark Cove was

<sup>(\*)</sup> 4 growths 2 left 2 right shoulders - all Feared <sup>(\*)</sup>  
 Fourth for the night = necrotic spot  
 Fifth for the night = projectile  
 I was present for these two  
 stayed on beach 4-5am first light - video of nesting.

#4

1/8/03  
Wed Murs

1/9/03  
Thursday



(27)

- need - night scope video
- Slows scan function
- More pictures w/me

909711  
 NO Leeches  
 Seen

VIRTUALLY NO SKIN  
 Barnacles - and few seen  
 were in posterior (Tail etc) and  
 were small Chelonia.

- Predation Mortality rate from Gulls at Heron?  
 Gulls prey on eggs before covered by sand.

- Not a pool, or, at least a temporary carapace  
 work - Chalk or carpenter's crayon etc

- Docile behavior - only one of hundreds  
 examined showed sign of crawling away  
 rapidly - Reasons:

- ① Exhausted from multiple false crawls?
- ② Accustomed to

stood on  
 end in sand



HERON ISLAND

1/9/03 At sunrise I walked and videoed Thursday along north beach - lots of hatching tracks in sand.

Slept 6:30am - 11am. Missed lunch at Restaurant close at 2 pm. Stayed around resort and Katie's house all day. Walked to Research station to see Alonso - Bought 6 Olds T-shirts.

Sunset at turtle shed - Jodie played 3 songs and I videoed them for her.

Video of a hatching across beach into water - then taken by Gull. Foot prints on beach present in sediment.

Marc, Hannah and I walked around island ~ 8pm 3 out even though low tide - 2 at harbor, 1 on South Beach.

Slept 9pm - 1:15am. Walked beach monitoring starting at 1:30am - All of us. Again, about 100 turtles <sup>North & South beaches</sup> examined (but some are repeats of past nights). One loggerhead - video near first light. Gabi (Austria) and <sup>12 Year Partner = "MAN FEED"</sup> husband on beach - photos.

\* Biopsies taken from 2 turtles - both had growths at tag site ⊗. Video of excavation into previous nest. = Broken eggs

Friday 1/9/03 NIGHT #5



29

Need <sup>song</sup> picture Jan. 10, 03 w/ Loggerhead  
daytime nesters  
Martin & Izzy Heath

Said  
Sold  
BRANSHOTT Meadows  
BRANSHOTT

16,000,000  
Records - HAUNTS  
Drummer - GU 30 TRQ UK  
was/pwings  
Record label

Record label  
in Detroit, MI " EX Rhythm King = ARISTA

MARTIN@LIZARDKINGRECORDS.COM

Need x3

1/10/03 print picture 2 sisters + man beach bite  
Sunlight? Near daytime nesting loggerhead @ Sharks Co  
Heron = TANIA MIROSEVICH

5 WHALANS Rd. GRAYSTONES  
2195 NSW Australia



HERON ISLAND (30)

1/10/03  
Friday  
Slept late in AM. He lunch at Shearwater.  
Marc and I walked inland trail (670m) to  
Shank Cove - videoed. Spent quite a bit of time  
with loggerhead daytime nesting 4pm est,  
up 2-3 pm. Missed 430pm Happy Hour  
with turtle group. AT dinner with turtle  
group. Alonso & Alex departed 2pm.

NIGHT #6  
Friday  
1-11-03  
Sat.

Slept then out ~ 2pm to catch daily  
advancing high tide. 3 Teams for various  
sectors. Probably 70-80 turtles examined total.  
None with lumps or bumps. <sup>USED RAD'S PCT</sup> SATURDAY  
Slept until ~ 830am. packed suitcases,  
arranged samples. Lunch at Shearwater  
w/MARC. Departed Colamaran 2pm  
for Gladstone - smooth seas.  
Arrived about 4pm. TAXI to Gladstone Beer  
Yatch club. Photo w/ Hawaiian theme gaming machines.  
Taxi to airport - Departed Gladstone ~ 615pm  
to Brisbane; 45 min. by car from Brisbane  
to Selwyn (11PM) Shuttle van to "Holiday Inn Sydney"  
10 min. from Domestic Airport Terminal.

used RAD'S PCT  
SATURDAY

1/12/03 SUNDAY - UP ~ 630AM. Bottle/breakfast



HERON

1/12/03 in Hotel. Depart for airport about  
Sunday 8:30 AM. Qantas Flight 561  
/ departed for Honolulu 11 AM.

ARRIVE Honolulu  
JANUARY 11, 03  
Saturday Night PM



33

Crossed

Hotel

Magar 1-4-03



**Scott Ryan**  
MANAGER  
Mobile: 0419 791 425

**COUNTRY PLAZA**  
INTERNATIONAL  
GLADSTONE

Phone: (07) 4972 4499  
100 Goondoon Street • Gladstone Qld 4680 • PO Box 1303  
Toll Free: 1800 244 904 Facsimile: (07) 4972 4921  
Email: counplad@fc-hotels.com.au





LOCAL NEWS Comes first

The observer 1/4/03

# Turtles move ashore to lay their future

BY LEAH HOOVER

MORE than 100 green turtles a night have been laying eggs on Heron Island since late October.

Gladstone Queensland Parks and Wildlife Service (QPWS) senior ranger Bruce Knuckey said up to 100 green turtles a night have also been laying on North West Island.

"It's been a pretty good laying season," he said. "And at this stage it has been a very good season for green turtles, with the numbers a bit above average," Mr Knuckey said.

He said turtle researchers had also observed about 60 loggerhead turtles nesting on Wreck Island and between 50 and 60 flatback turtles coming ashore on Curtis Island's South End.

Mr Knuckey said there were a few simple precautions visitors to known turtle nesting sites should take to ensure nesting turtles were not disturbed.

"Turtles are very susceptible to lights, so people should keep their lights dimmed and only use a very small torch," he said.

"It is also a good idea to turn off torches while you let her settle down

and start digging the egg chamber."

Mr Knuckey said female turtles would most likely continue nesting for a few more weeks and hatchlings should start appearing soon.

"Hatchlings generally appear about nine to 12 weeks after laying, so we should have the first ones around the middle of this month," he said.

"People need to resist the urge to help the hatchlings and hatchlings shouldn't be picked up because it is important for them to make their own way down the beach."

Turtle hatchlings were also susceptible to bright lights and were easily disorientated, Mr Knuckey said.

"Often hatchlings end up in people's campsites instead of in the sea," he said.

Mr Knuckey said QPWS turtle researchers and have tagged turtles nesting on islands off Gladstone for about 20 years, with researchers now recognising a number of turtles who returned to the area to nest each year.

Anyone who sees a dead or stranded marine animal should call 1300 360 808.



The Gladstone Observer

Green turtle hatchlings on Heron Island start their journey towards the sea.

## Three species dominate region's waters

**Green Turtles**  
(Chelonia mydas)

**Description:** Adult Green Turtles have a smooth, high-domed carapace, are olive green in colour with occasional brown, reddish brown or black highlights. Hatchlings have a black carapace with white margins around the carapace and flippers.

**Loggerhead Turtles**  
(Caretta caretta)

**Description:** The loggerhead turtle was named for its large head. It has thick jaws that crush crustaceans and molluscs. Adults are brown and are often highlighted light brown, reddish-brown and black on their carapace. Hatchlings have a dark brown carapace and light brown plastron.

**Flatback Turtles**  
(Natator depressus)

**Description:** The flatback turtle has a distinct low-domed flat carapace. Its shell is flattened with upturned edges and is covered by a thin skin. Adults have olive grey flippers and head and their plastron is white. Hatchlings are grey and have a white plastron.

34



35

# BOARDING PASS

Carrier QANTASLINK

Name BALAZS/GEORGE

Flight QF 2340 Date 04 JAN 03

From SYDNEY To GLADSTONE

Seat 6A

Service Information

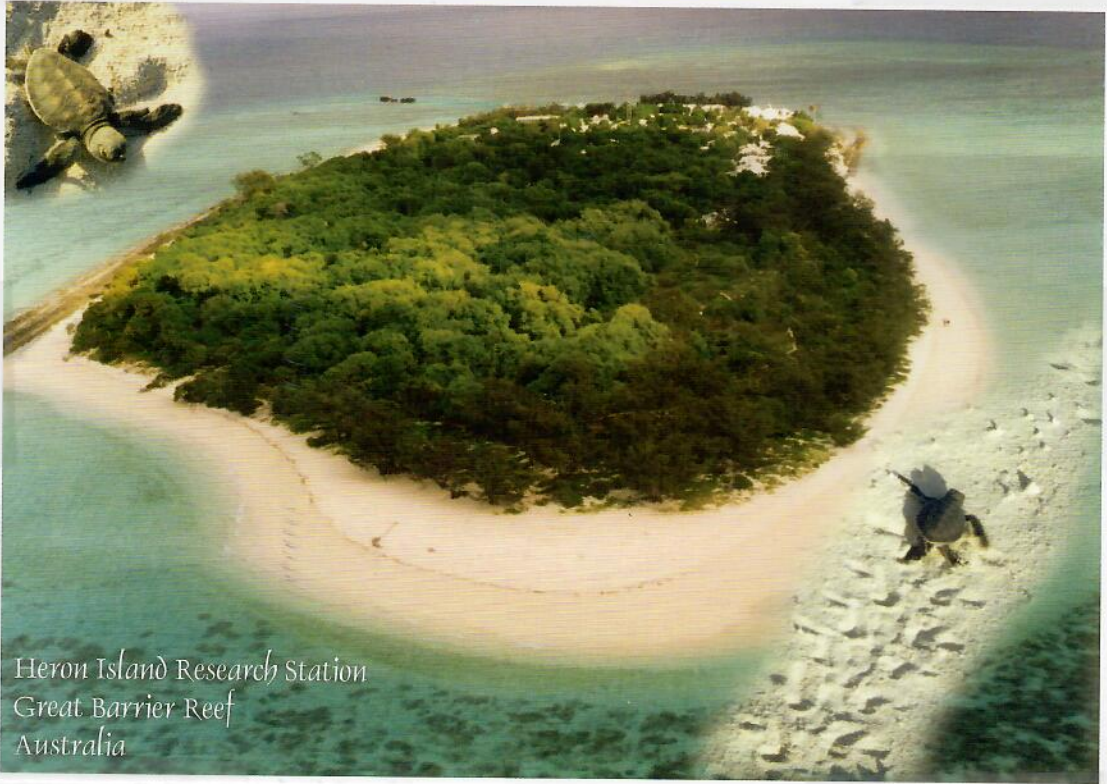
OPERATED BY SUNSTATE

Boarding Time 1355 Gate 01

SEQ NBR 2 Class ECONOMY



# Bargara Beach



Heron Island Research Station  
Great Barrier Reef  
Australia

Heron  
The Great Island

[www.gorecruises.com](http://www.gorecruises.com)

The award winning Turtle Tracks at Bargara



(37)



HERON ISLAND  
GREAT BARRIER REEF, AUSTRALIA



# Bargara Beach

Some 13 kilometres east of Bundaberg is the pleasant seaside resort of **Bargara Beach**, the largest of Bundaberg's nearby seaside townships.

Bargara Beach is geared towards making visitors welcome. And visitors must know how welcome they are because the road running along the beach front is full of holiday homes, flats, apartments and motels.

Al fresco dining is a must in the region's near perfect weather. Eateries of differing flavour and atmosphere can be found in Bargara.

The newly developed Bargara Streetscape, and the award winning play environment Turtle Tracks, adds another dimension to the Bargara experience of sun and sand.

As well as a play area designed to permit disabled children access, the streetscape tempts visitors to explore the Bargara shoreline.

Bargara is the highest populated centre of the Burnett Shire. The main shopping centre means you may never have to stray more than a couple of metres from the beach, or the golf course.

Both **Nielson Park** and **Kelly's Beach** are favourites with families. Kelly's Beach has two sheltered swimming areas perfect for the children, **Moneys Creek** at the southern end and to the north is **The Basin**.

Nielson Park is a palm fringed bay with adjacent caravan park and kiosk. The Bundaberg Surf Lifesaving Clubhouse is situated here and both Nielson Beach and Kelly's Beach is patrolled during the season.

There are some great fishing spots off the beach, the rocks and offshore. An artificial offshore reef guarantees good fishing all year round.

Other activities available in the area include an excellent golf course, a bowls club, tennis courts and playgrounds.

The Bargara Beach township also offers a wide range of facilities including shops, restaurants, cafes, a hotel, resorts and motel accommodation.



The award winning Turtle Tracks at Bargara.

2003/04 SUMMER

COASTLINE ~



(39)



HERON ISLAND  
GREAT BARRIER REEF, AUSTRALIA

2<sup>nd</sup> Meeting of the Regional Turtle Tagging  
Database Steering Committee  
December 8-11, 2003      Mon Repos,  
AUSTRALIA

New California  
Vincent      LIAR dte  
Sot Tag  
Loganheads  
(+ greenstone  
Reef)



# MON REPOS

VIA SYDNEY, BRISBANE & BUNDABERG  
= Friday depart on airplane

2003  
Dec 5) 1250AM Depart for Sydney QANTAS  
ARRIVE ~ 745am December 6th -

12/6  
SAT. A.M.  
Holiday INN Airport - ~ 1030am

took the train from nearby MASCOT station to downtown Sydney - got off at City Centre / Town Hall near Darling Harbor (in Queen Victoria Bldg. Walked around area - across bridge by Sydney Aquarium - Maritime Museum (Submarine surface ship - Monorail. When up Sydney observation tower 750m high. Returned to hotel ~ 8pm.

Sunday A.M. breakfast at Holiday INN -

12/7/03 Depart for Domestic Terminal ~ 1030am  
Left to Brisbane 1PM, ~ 1 hour flight  
1 hour time change. At Brisbane airport - waited ~ 2 hours for flight propeller plane to Bundaberg (1 hour). Met by Col Lempers - Sugar cane fields abundant. I then drive to BEEAGARA Township. Mon Repos @ 1.5am 3.5<sup>km</sup> Total distance of all beaches in area



(1) (41)

Need STONE(S) from beach  
Call up Honolulu

Mon  
REPOS  
December

Need EMAIL or FAX at Mon Repos Inform  
Queensland Museum - fiberglass Models Cent

- Juvenile green (changing from  
- Adult loggerhead (1984)  
Need print photos of Replicas, Mold is X54

"Tools of the TRADE"

Digital pictures

V&P - how is database (for Milani) coming along?



12/7/03 Bay of dinner at Research station Mon Repos  
Sunday w/ volunteers - many are new, ticked up list at  
train station. Went out on beach volunteer training -  
Met company heading up tours on beach - 70 <sup>with</sup> ~~with~~ <sup>missing</sup> ~~missing~~ <sup>are</sup> ~~are~~ <sup>that</sup> ~~that~~ <sup>2</sup> ~~2~~ <sup>false</sup> ~~false~~ <sup>crews</sup> ~~crews~~ <sup>whole</sup> ~~whole~~ <sup>night</sup> ~~night~~  
(ideal number) video taken. are that, nested, 2 false crews

Meeting TURTLE DATABASE Meeting - 1st Meeting (10)  
Mon Repos Conservation Park <sup>June 4-5, 03</sup> <sup>Hawdard</sup>

12/8/03 27000 tourists a year  
Monday 6pm - 6am Mon Repos closed  
to public except under Park Supervisor,

- 1 Peter Williams
- 2 Here } = Been w/ sprep at least 6 years
- 3 Job op } sprep (doesn't do research)
- 4 Irene KINAN
- 5 "Arman" "Replacing" > "Seafdec" ASEAN
- 6 "J"
- 7 Colin

Access has upper limit in numbers (?)  
problems - things seem to grind slow at hundreds of thousands  
Visual FoxPRO - user friendly cost - Millions of records

Small cell systems



MON REPOS  
December 2003

Need: ULTRASOUND

- "Clearinghouse" - SRC for data
- "Sunset Clause" - Give them 5 years - Col. (to Publish or Relinquish data)

note

Shading of a picture gives 3-dimensional effect.

- Need - Digital prints of wall photos at Mon Repos
- Yvette's boyfriend - Joankin web site information center to enter sightings.
- Need inventory SREP tags & keys in my office.

Assigned

Need - Convert paper files into computerized data of tag block groups live distributed over the years.

- Xerox visitor pages for the nights I'm here
- Assemble All tag recovery letters/cards (to scan - computerize).

Ref photos of Camps & Palazs  
Video Also

- Assemble and send TAPS to Peter Williams







(45)

"1-IN-1000" Graphic display

Mon Rev  
December

Need "Golden Sea turtle"  
or "Silver Bullet" turtle

- Note Linn's doesn't want primary tag number to be a BT to Alpha numeric because he can't sort them to check for gaps in data as he want all tag numbers applied in consecutive order  
Peter should publish it -

"Turtle Research Database System"  
"filtered"

Mine: TDPS - "Marine Turtle Database Management System"

"Browse/Near Shore Data" Example

Date 9/22/1992 study site KNEEDER

TDPS OAHU SCL-56.1

① poor example: no tag numbers - turtle taken and euthanized - necropsied

② poor example: "Growth Rate Summary from OAHU during 1/1/1980 - 12/31/1980"

Tag numbers 2332, 2333, 2334, 3681  
2335, 2336, 3467

Interval SCL growth rate etc. CCL growth rate "#ERROR" for every



2W07

6/15/98

MON REPOS  
DECEMBER  
2003

(46)

130-230pm

12/8/03  
Monday

Lunch - Baromundi & chips  
IN TOWN IN TOWN

P.M. TO ~ 530pm continued meeting  
and discussions, then back to motel  
dinner (Thai Curry) and back for beach walk.  
ARRIVING about 815pm. w/ Irene - went  
out on beach and joined Col w/ Group  
by board walk - many video & stills.

OTHER:

(CONTINUED P. 96)



497

# Talking turtles

*From November 1 until end of March Mon Repos beach, near Bundaberg, becomes a hive of activity as people flock to witness a wonder of nature....turtles laying their eggs and hatchlings making their way into the sea.*

Mon Repos a short drive from Bundaberg is renowned as the largest and most accessible turtle rookery on the eastern Australian mainland. It is also the most important loggerhead turtle rookery in the South Pacific.

Col Limpus, senior principal conservation officer with the Queensland Parks and Wild Life Service says that Mon Repos is the most southerly accessible place for tourists to see the turtles.

North of Bundaberg, visitors can see turtles on Lady Elliot, Lady Musgrave, Heron, North West and Curtis Islands.

At Mon Repos, beach access is restricted from November to March between 6pm and 6am to ensure the turtles are not disturbed. Each night, rangers provide informative talks, slide displays and films on turtle and marine preservation as well as guided walks to see turtles come ashore to lay their eggs.

The hatchlings can be seen emerging and making their way back to the ocean from early January until March.

Talks and guided tours after 7pm nightly.

Entry fee \$5 adults, \$2.50 pensioners/students, \$12.50 family. Season tickets are also available.

Contact : QP&WS Rangers

Phone : 07 4159 1652

Location : Mon Repos Conservation Park Visitor's Centre, Mon Repos (15kms East of Bundaberg)

Web:

[www.bundaberg.org/tourism.seeanddo/attractions/coast.php](http://www.bundaberg.org/tourism.seeanddo/attractions/coast.php)



Egg laying at Mon Repos Conservation Park.



DATE 6/15/98

48

TAG NOS. \_\_\_\_\_

SPECIES \_\_\_\_\_

CCL \_\_\_\_\_

SEX \_\_\_\_\_

PATH NOS. 5

TUMORS

#1

#2

#3

#4

TOTAL

REMARKS

RIGHT EYE

LEFT EYE

MOUTH

NECK

RIGHT FRONT FLIPPER

LEFT FRONT FLIPPER

RIGHT HIND FLIPPER

LEFT HIND FLIPPER

CLOACA/TAIL

SEAMS/SCUTES

INTERNAL

TOTAL

	#1	#2	#3	#4	TOTAL	REMARKS
RIGHT EYE						
LEFT EYE						
MOUTH						
NECK						
RIGHT FRONT FLIPPER						
LEFT FRONT FLIPPER						
RIGHT HIND FLIPPER						
LEFT HIND FLIPPER						
CLOACA/TAIL						
SEAMS/SCUTES						
INTERNAL						
TOTAL						

OVERALL TUMOR SCORE: \_\_\_\_\_

APPROXIMATE TUMOR SIZE CATEGORIES:

#1 = DETECTABLE PATCH TO 1CM DIAMETER

#2 = >1CM TO 4CM

#3 = >4CM TO 10CM

#4 = >10CM

OTHER:

GPS:



DATE 6/15/98

TAG NOS. K 10029

SPECIES Cm.

CCL 107.4 SEX F

157.5 kg

PATH NOS. 6

TUMORS #1 #2 #3 #4 TOTAL REMARKS

RIGHT EYE

LEFT EYE

MOUTH

NECK

RIGHT FRONT FLIPPER

LEFT FRONT FLIPPER

RIGHT HIND FLIPPER

LEFT HIND FLIPPER

CLOACA/TAIL

SEAMS/SCUTES

INTERNAL

TOTAL

	#1	#2	#3	#4	TOTAL	REMARKS
RIGHT EYE						
LEFT EYE						
MOUTH						
NECK						
RIGHT FRONT FLIPPER						
LEFT FRONT FLIPPER						
RIGHT HIND FLIPPER						
LEFT HIND FLIPPER						
CLOACA/TAIL						
SEAMS/SCUTES						
INTERNAL						
TOTAL						

OVERALL TUMOR SCORE: \_\_\_\_\_

APPROXIMATE TUMOR SIZE CATEGORIES:

- #1 = DETECTABLE PATCH TO 1CM DIAMETER
- #2 = >1CM TO 4CM
- #3 = >4CM TO 10CM
- #4 = >10CM

OTHER:

GPS:



DATE 6/15/98

TAG NOS. K10454

SPECIES C.m.

CCL 94.2

SEX F

99.5kg

PATH NOS. 7

TUMORS	#1	#2	#3	#4	TOTAL	REMARKS
RIGHT EYE						
LEFT EYE						
MOUTH						
NECK						
RIGHT FRONT FLIPPER						
LEFT FRONT FLIPPER						
RIGHT HIND FLIPPER						
LEFT HIND FLIPPER						
CLOACA/TAIL						
SEAMS/SCUTES						
INTERNAL						
TOTAL						

OVERALL TUMOR SCORE: \_\_\_\_\_

APPROXIMATE TUMOR SIZE CATEGORIES:

- #1 = DETECTABLE PATCH TO 1CM DIAMETER
- #2 = >1CM TO 4CM
- #3 = >4CM TO 10CM
- #4 = >10CM

OTHER: SI

GPS:



DATE 6/15/98  
TAG NOS. K10049

SPECIES C.m.

CCL \_\_\_\_\_ SEX \_\_\_\_\_

PATH NOS. 8

TUMORS #1 #2 #3 #4 TOTAL REMARKS

TUMORS	#1	#2	#3	#4	TOTAL	REMARKS
RIGHT EYE						
LEFT EYE						
MOUTH						
NECK						
RIGHT FRONT FLIPPER						
LEFT FRONT FLIPPER						
RIGHT HIND FLIPPER						
LEFT HIND FLIPPER						
CLOACA/TAIL						
SEAMS/SCUTES						
INTERNAL						
TOTAL						

OVERALL TUMOR SCORE: \_\_\_\_\_

APPROXIMATE TUMOR SIZE CATEGORIES:  
#1 = DETECTABLE PATCH TO 1CM DIAMETER  
#2 = >1CM TO 4CM  
#3 = >4CM TO 10CM  
#4 = >10CM

OTHER: NO Bx

GPS: \_\_\_\_\_



DATE 6/15/98

(52)

TAG NOS. K10448

SPECIES C.m.

CCL 84.5

SEX F

wt. 66 kg

PATH NOS. 9

TUMORS #1 #2 #3 #4 TOTAL REMARKS

TUMORS	#1	#2	#3	#4	TOTAL	REMARKS
RIGHT EYE						
LEFT EYE						
MOUTH						
NECK						
RIGHT FRONT FLIPPER						
LEFT FRONT FLIPPER						
RIGHT HIND FLIPPER						
LEFT HIND FLIPPER						
CLOACA/TAIL						
SEAMS/SCUTES						
INTERNAL						
TOTAL						

OVERALL TUMOR SCORE: \_\_\_\_\_

APPROXIMATE TUMOR SIZE CATEGORIES:

- #1 = DETECTABLE PATCH TO 1CM DIAMETER
- #2 = >1CM TO 4CM
- #3 = >4CM TO 10CM
- #4 = >10CM

OTHER:

9B = PLASTRON (HP)  
9C = PLASTRON (HP) & (UP)

GPS:



DATE 6-15-98  
TAG NOS. K7196

SPECIES C.m.

CCL 94.2 SEX F  
98.5

PATH NOS. 10

	#1	#2	#3	#4	TOTAL	REMARKS
TUMORS						
RIGHT EYE						
LEFT EYE						
MOUTH						
NECK						
RIGHT FRONT FLIPPER						
LEFT FRONT FLIPPER						
RIGHT HIND FLIPPER						
LEFT HIND FLIPPER						
CLOACA/TAIL						
SEAMS/SCUTES						
INTERNAL						
TOTAL						

OVERALL TUMOR SCORE: \_\_\_\_\_

APPROXIMATE TUMOR SIZE CATEGORIES:  
#1 = DETECTABLE PATCH TO 1CM DIAMETER  
#2 = >1CM TO 4CM  
#3 = >4CM TO 10CM  
#4 = >10CM

OTHER:

GPS:



DATE 6/15/98  
TAG NOS. T80269

SPECIES C.m.

CCL 64.2 SEX F

54

PATH NOS. 11

32.5

TUMORS #1 #2 #3 #4 TOTAL REMARKS

TUMORS	#1	#2	#3	#4	TOTAL	REMARKS
RIGHT EYE						
LEFT EYE						
MOUTH						
NECK						
RIGHT FRONT FLIPPER						
LEFT FRONT FLIPPER						
RIGHT HIND FLIPPER						
LEFT HIND FLIPPER						
CLOACA/TAIL						
SEAMS/SCUTES						
INTERNAL						
TOTAL						

OVERALL TUMOR SCORE: \_\_\_\_\_

APPROXIMATE TUMOR SIZE CATEGORIES:  
#1 = DETECTABLE PATCH TO 1CM DIAMETER  
#2 = >1CM TO 4CM  
#3 = >4CM TO 10CM  
#4 = >10CM

OTHER:

GPS:



DATE 6/15/98

TAG NOS. \_\_\_\_\_

SPECIES C.c.

CCL 78.4

SEX M

55

49.5 kg

PATH NOS. 12

TUMORS	#1	#2	#3	#4	TOTAL	REMARKS
RIGHT EYE						
LEFT EYE						
MOUTH						
NECK						
RIGHT FRONT FLIPPER						
LEFT FRONT FLIPPER						
RIGHT HIND FLIPPER						
LEFT HIND FLIPPER						
CLOACA/TAIL						
SEAMS/SCUTES						
INTERNAL						
TOTAL						

OVERALL TUMOR SCORE: \_\_\_\_\_

APPROXIMATE TUMOR SIZE CATEGORIES:

- #1 = DETECTABLE PATCH TO 1CM DIAMETER
- #2 = >1CM TO 4CM
- #3 = >4CM TO 10CM
- #4 = >10CM

OTHER:

EMACIATION - "OVIDUCT" MALE

GPS:



DATE 6/15/98

(56)

TAG NOS. K10028

SPECIES C.c.

CCL 99.3

SEX M

97.5

PATH NOS. 13

TUMORS #1 #2 #3 #4 TOTAL REMARKS

TUMORS	#1	#2	#3	#4	TOTAL	REMARKS
RIGHT EYE						
LEFT EYE						
MOUTH						
NECK						
RIGHT FRONT FLIPPER						
LEFT FRONT FLIPPER						
RIGHT HIND FLIPPER						
LEFT HIND FLIPPER						
CLOACA/TAIL						
SEAMS/SCUTES						
INTERNAL						
TOTAL						

OVERALL TUMOR SCORE: \_\_\_\_\_

APPROXIMATE TUMOR SIZE CATEGORIES:

- #1 = DETECTABLE PATCH TO 1CM DIAMETER
- #2 = >1CM TO 4CM
- #3 = >4CM TO 10CM
- #4 = >10CM

OTHER: 13B (NORMAL SKIN) RFF  
"A" TUMOR LFF  
1-#1 LFF ventral (Biopsy removed - entire growth)

GPS:



DATE 6/15/98

TAG NOS. K10047

SPECIES C.c.

CCL 82.0

SEX F

(57)

PATH NOS. 14

60.0kg

TUMORS #1 #2 #3 #4 TOTAL REMARKS

RIGHT EYE						
LEFT EYE						
MOUTH						
NECK						
RIGHT FRONT FLIPPER						
LEFT FRONT FLIPPER						
RIGHT HIND FLIPPER						
LEFT HIND FLIPPER						
CLOACA/TAIL						
SEAMS/SCUTES						
INTERNAL						
TOTAL						

OVERALL TUMOR SCORE: \_\_\_\_\_

APPROXIMATE TUMOR SIZE CATEGORIES:

- #1 = DETECTABLE PATCH TO 1CM DIAMETER
- #2 = >1CM TO 4CM
- #3 = >4CM TO 10CM
- #4 = >10CM

OTHER:

GPS:



DATE 6-15-98

58

TAG NOS. K17067

SPECIES C.c.

CCL 85.3

SEX F

PATH NOS. 15

67.0 kg

TUMORS	#1	#2	#3	#4	TOTAL	REMARKS
RIGHT EYE						
LEFT EYE						
MOUTH						
NECK						
RIGHT FRONT FLIPPER						
LEFT FRONT FLIPPER						
RIGHT HIND FLIPPER						
LEFT HIND FLIPPER						
CLOACA/TAIL						
SEAMS/SCUTES						
INTERNAL						
TOTAL						

OVERALL TUMOR SCORE: \_\_\_\_\_

APPROXIMATE TUMOR SIZE CATEGORIES:

- #1 = DETECTABLE PATCH TO 1CM DIAMETER
- #2 = >1CM TO 4CM
- #3 = >4CM TO 10CM
- #4 = >10CM

OTHER: 15B-? propeller scar = suspicious  
15A looking at ventral  
 NORMAL SKIN LFF tumor like lesion  
 shoulder

GPS:



DATE 6-15-98

TAG NOS. K 17066

SPECIES Cim.

CCL \_\_\_\_\_

SEX \_\_\_\_\_

(59)

PATH NOS. 16

TUMORS	#1	#2	#3	#4	TOTAL	REMARKS
--------	----	----	----	----	-------	---------

RIGHT EYE						
LEFT EYE						
MOUTH						
NECK						
RIGHT FRONT FLIPPER						
LEFT FRONT FLIPPER						
RIGHT HIND FLIPPER						
LEFT HIND FLIPPER						
CLOACA/TAIL						
SEAMS/SCUTES						
INTERNAL						
TOTAL						

OVERALL TUMOR SCORE: \_\_\_\_\_

APPROXIMATE TUMOR SIZE CATEGORIES:

- #1 = DETECTABLE PATCH TO 1CM DIAMETER
- #2 = >1CM TO 4CM
- #3 = >4CM TO 10CM
- #4 = >10CM

OTHER:

*Harophila in mouth*

GPS:



DATE 6-15-98

TAG NOS. K 10027

SPECIES C.c.

CCL 98.3

(60)  
SEX M

PATH NOS. 17

97.5kg

TUMORS #1 #2 #3 #4 TOTAL REMARKS

TUMORS	#1	#2	#3	#4	TOTAL	REMARKS
RIGHT EYE						
LEFT EYE						
MOUTH						
NECK						
RIGHT FRONT FLIPPER						
LEFT FRONT FLIPPER						
RIGHT HIND FLIPPER						
LEFT HIND FLIPPER						
CLOACA/TAIL						
SEAMS/SCUTES						
INTERNAL						
TOTAL						

OVERALL TUMOR SCORE: \_\_\_\_\_

APPROXIMATE TUMOR SIZE CATEGORIES:  
 #1 = DETECTABLE PATCH TO 1CM DIAMETER  
 #2 = >1CM TO 4CM  
 #3 = >4CM TO 10CM  
 #4 = >10CM

OTHER: Blood only

GPS:



DATE 6-15-98  
TAG NOS. T57231

SPECIES C.m.

CCL 88.7 SEX F

77.5

PATH NOS. 18

TUMORS #1 #2 #3 #4 TOTAL REMARKS

TUMORS	#1	#2	#3	#4	TOTAL	REMARKS
RIGHT EYE						
LEFT EYE						
MOUTH						
NECK						
RIGHT FRONT FLIPPER						
LEFT FRONT FLIPPER						
RIGHT HIND FLIPPER						
LEFT HIND FLIPPER						
CLOACA/TAIL						
SEAMS/SCUTES						
INTERNAL						
TOTAL						

OVERALL TUMOR SCORE: \_\_\_\_\_

APPROXIMATE TUMOR SIZE CATEGORIES:  
#1 = DETECTABLE PATCH TO 1CM DIAMETER  
#2 = >1CM TO 4CM  
#3 = >4CM TO 10CM  
#4 = >10CM

OTHER: LHF = Regressing tumor 18A  
LFF Normal skin 18B  
Dyed = FP 1991

GPS:



DATE 6-15-98

(62)

TAG NOS. K5245

SPECIES Cim.

CCL 75.1  
49.0

SEX F

PATH NOS. 19

TUMORS #1 #2 #3 #4 TOTAL REMARKS

TUMORS	#1	#2	#3	#4	TOTAL	REMARKS
RIGHT EYE						
LEFT EYE						
MOUTH						
NECK						
RIGHT FRONT FLIPPER						
LEFT FRONT FLIPPER						
RIGHT HIND FLIPPER						
LEFT HIND FLIPPER						
CLOACA/TAIL						
SEAMS/SCUTES						
INTERNAL						
TOTAL						

OVERALL TUMOR SCORE: \_\_\_\_\_

APPROXIMATE TUMOR SIZE CATEGORIES:  
 #1 = DETECTABLE PATCH TO 1CM DIAMETER  
 #2 = >1CM TO 4CM  
 #3 = >4CM TO 10CM  
 #4 = >10CM

OTHER:

GPS:



DATE 6-15-98

TAG NOS. \_\_\_\_\_

SPECIES C.m.

CCL 83.0

SEX F

(63)

PATH NOS. 20

69.0kg

TUMORS #1 #2 #3 #4 TOTAL REMARKS

RIGHT EYE

LEFT EYE

MOUTH

NECK

RIGHT FRONT FLIPPER

LEFT FRONT FLIPPER

RIGHT HIND FLIPPER

LEFT HIND FLIPPER

CLOACA/TAIL

SEAMS/SCUTES

INTERNAL

TOTAL

	#1	#2	#3	#4	TOTAL	REMARKS
RIGHT EYE						
LEFT EYE						
MOUTH						
NECK						
RIGHT FRONT FLIPPER						
LEFT FRONT FLIPPER						
RIGHT HIND FLIPPER						
LEFT HIND FLIPPER						
CLOACA/TAIL						
SEAMS/SCUTES						
INTERNAL						
TOTAL						

OVERALL TUMOR SCORE: \_\_\_\_\_

APPROXIMATE TUMOR SIZE CATEGORIES:

- #1 = DETECTABLE PATCH TO 1CM DIAMETER
- #2 = >1CM TO 4CM
- #3 = >4CM TO 10CM
- #4 = >10CM

OTHER:

GPS:



DATE 6-15-98

TAG NOS. K17070

SPECIES C.c.

CCL 86.3  
73kg

(64)  
SEX F

PATH NOS. 21

TUMORS

#1

#2

#3

#4

TOTAL

REMARKS

RIGHT EYE

LEFT EYE

MOUTH

NECK

RIGHT FRONT FLIPPER

LEFT FRONT FLIPPER

RIGHT HIND FLIPPER

LEFT HIND FLIPPER

CLOACA/TAIL

SEAMS/SCUTES

INTERNAL

TOTAL

	#1	#2	#3	#4	TOTAL	REMARKS
RIGHT EYE						
LEFT EYE						
MOUTH						
NECK						
RIGHT FRONT FLIPPER						
LEFT FRONT FLIPPER						
RIGHT HIND FLIPPER						
LEFT HIND FLIPPER						
CLOACA/TAIL						
SEAMS/SCUTES						
INTERNAL						
TOTAL						

OVERALL TUMOR SCORE: \_\_\_\_\_

APPROXIMATE TUMOR SIZE CATEGORIES:

#1 = DETECTABLE PATCH TO 1CM DIAMETER

#2 = >1CM TO 4CM

#3 = >4CM TO 10CM

#4 = >10CM

OTHER:

GPS:



DATE 6-15-98

TAG NOS. T57182

SPECIES C.e.

CCL 87.3 SEX F

(63)

PATH NOS. 22

67.5

TUMORS #1 #2 #3 #4 TOTAL REMARKS

RIGHT EYE

LEFT EYE

MOUTH

NECK

RIGHT FRONT FLIPPER

LEFT FRONT FLIPPER

RIGHT HIND FLIPPER

LEFT HIND FLIPPER

CLOACA/TAIL

SEAMS/SCUTES

INTERNAL

TOTAL

TUMORS	#1	#2	#3	#4	TOTAL	REMARKS
RIGHT EYE						
LEFT EYE						
MOUTH						
NECK						
RIGHT FRONT FLIPPER						
LEFT FRONT FLIPPER						
RIGHT HIND FLIPPER						
LEFT HIND FLIPPER						
CLOACA/TAIL						
SEAMS/SCUTES						
INTERNAL						
TOTAL						

OVERALL TUMOR SCORE: \_\_\_\_\_

APPROXIMATE TUMOR SIZE CATEGORIES:

- #1 = DETECTABLE PATCH TO 1CM DIAMETER
- #2 = >1CM TO 4CM
- #3 = >4CM TO 10CM
- #4 = >10CM

OTHER:

GPS:



DATE 6-15-98

TAG NOS. K8698

SPECIES C.C.

CCL 78.0

(66)  
SEX M

54.5

PATH NOS. 23

TUMORS #1 #2 #3 #4 TOTAL REMARKS

TUMORS	#1	#2	#3	#4	TOTAL	REMARKS
RIGHT EYE						
LEFT EYE						
MOUTH						
NECK						
RIGHT FRONT FLIPPER						
LEFT FRONT FLIPPER						
RIGHT HIND FLIPPER						
LEFT HIND FLIPPER						
CLOACA/TAIL						
SEAMS/SCUTES						
INTERNAL						
TOTAL						

OVERALL TUMOR SCORE: \_\_\_\_\_

APPROXIMATE TUMOR SIZE CATEGORIES:

- #1 = DETECTABLE PATCH TO 1CM DIAMETER
- #2 = >1CM TO 4CM
- #3 = >4CM TO 10CM
- #4 = >10CM

OTHER:

GPS:







DATE 6-15-98

TAG NOS. K7324

SPECIES C.m.

CCL 45.2

SEX M

(68)

10.4

PATH NOS. \_\_\_\_\_

TUMORS	#1	#2	#3	#4	TOTAL	REMARKS
--------	----	----	----	----	-------	---------

RIGHT EYE						
LEFT EYE						
MOUTH						
NECK						
RIGHT FRONT FLIPPER						
LEFT FRONT FLIPPER						
RIGHT HIND FLIPPER						
LEFT HIND FLIPPER						
CLOACA/TAIL						
SEAMS/SCUTES						
INTERNAL						
TOTAL						

OVERALL TUMOR SCORE: \_\_\_\_\_

APPROXIMATE TUMOR SIZE CATEGORIES:

- #1 = DETECTABLE PATCH TO 1CM DIAMETER
- #2 = >1CM TO 4CM
- #3 = >4CM TO 10CM
- #4 = >10CM

OTHER:

Ventral tumors 10-#1 2-#2  
IN Seams  
Scutes

GPS:



DATE 16 JUN 98

TAG NOS. T53662

SPECIES Cm

CCL 85.6

SEX M

(69)

PATH NOS. # 28

TUMORS	#1	#2	#3	#4	TOTAL	REMARKS
--------	----	----	----	----	-------	---------

RIGHT EYE						SUS. BUMP ANTERIOR EYE
LEFT EYE						
MOUTH						
NECK						
RIGHT FRONT FLIPPER	4	1			5	
LEFT FRONT FLIPPER	7	5	1		13	#3 W TAG ADULT LEGGINGS
RIGHT HIND FLIPPER						2X GREY PATCHES
LEFT HIND FLIPPER	1	1			2	
CLOACA/TAIL		1			1	
SEAMS/SCUTES						
INTERNAL						
TOTAL					21	

OVERALL TUMOR SCORE: \_\_\_\_\_

APPROXIMATE TUMOR SIZE CATEGORIES:

- #1 = DETECTABLE PATCH TO 1CM DIAMETER
- #2 = >1CM TO 4CM
- #3 = >4CM TO 10CM
- #4 = >10CM

OTHER:

GPS:



DATE 16 JUN 98TAG NOS. T81731SPECIES CmCCL 81.5SEX M70PATH NOS. # 30

TUMORS	#1	#2	#3	#4	TOTAL	REMARKS
RIGHT EYE	1					
LEFT EYE	1					
MOUTH						
NECK		<sup>ventral</sup> 1/3				JAW (NOT HINGE) GULLAK SKIN
RIGHT FRONT FLIPPER	20	1				PINK SPOTS SEEM TO BE PART OF TUMOR PROCESS - THERE IS A WHOLE GRADATION OF RELIEF *
LEFT FRONT FLIPPER	<sup>dorsal</sup> 10 <sup>ventral</sup> 26					MANY DIFFUSE ASSOC'D W TAG SITE
RIGHT HIND FLIPPER	51					MOSTLY VENTRAL (ALL BUT 4)
LEFT HIND FLIPPER	26					LEECH EGGS; ALL BUT 2-3 ARE ON VENTRAL SIDE
CLOACA/TAIL	9					5 ASSOC'D W CLOACA + W 15 ADULT LEECHES
SEAMS/SCUTES	2					SEVERAL PINK SPOTS
INTERNAL						
TOTAL						

OVERALL TUMOR SCORE: \_\_\_\_\_

## APPROXIMATE TUMOR SIZE CATEGORIES:

- #1 = DETECTABLE PATCH TO 1CM DIAMETER
- #2 = >1CM TO 4CM
- #3 = >4CM TO 10CM
- #4 = >10CM

OTHER: (\*) (SEE RFF REMARKS) - THERE ARE FLAT PINK SPOTS, SLIGHTLY RAISED, CLEARLY RAISED.

THE 3 SPOTS ON DORSAL NECK ARE GREY.

↳ PINK PATCHES, SLIGHTLY RAISED ON DORSAL NECK

GPS: