Sea Turtle Tagging Form Version 3 - Sept 2010 **NOAA Fisheries** Pacific Islands Fisheries Science Center Kimyra Marine Turtle Research Program Recorded By Sara Turtle ID 2570 Dole Street Honolulu, Hawaii 96822-2396 Release Site 10/6/15 Release Date (808) 983-5730 Recapture EI Species Capture Information: Lat 19.8548 Study Site Island Date Capture Strandin Location Method Basking Old Tags Tag Tag PIT (LHF) Tag PIT Tag PIT Other (RHF) Q747 (1h) New Other Old Other Tag Comments: Injuries, Abnormalities, Mouth Contents, etc. Robust bady condition Measurements (cm) Lat1 SCW Lat3 CCL Skin (DNA) Diet (lavage) Barnacles Tumor Samples Y(N) Other Skin (SIA) Diet (mouth) Tail Blood CCW **Tumors** Comments Vent 2 3 Head 1 Weight R eye RFF Visual Examination Leeches Tumors (N) Oral Tumors Y Neck Leech Eggs Visible RFF Emac Code Tumor Score LEF Vent Barn Dorsal Barn Carapace Flipper Damage Amput'd LHF Fishing Fish Tail Line Hook Seams Shark Boat Scutes Attack Impact N TOTAL Photos PPS

on,



Sea Turtle Tagging Form Version 3 - Sept 2010
Data Sana Version 3 - Sept 2010 NOAA Fisheries Pacific Islands Fisheries Science Center Recorded By Sara Kimura Marine Turtle Research Program Turtle ID 2570 Dole Street Honolulu, Hawaii 96822-2396 Release Site Pond 10/6/15 Release Date (808) 983-5730 Recapture Species Capture Information: Lat 19.8548 Study Site Island Date Lon 155.9216 Capture AnWar Method Location New Tags Old Tags 4C3B54502B Tag PIT (LHF) (LHF) (L PIT Tag (RHF) (RHF Tag PIT PIT (RI Other Old New MT Tag Other MT Measurements (cm) Comments: Injuries, Abnormalities, Mouth Contents, etc. Notch SCW Samples Y Skin (DNA) Diet (lavage) Barnacles Tumor Skin (SIA) Diet (mouth) Other Blood Tumors Head Comments 2 3 4 1 Weight R eye RFF (lbs) Leye Visual Examination Leeches Tumors Oral Tumors Visible Leech Eggs Tumor Score Emac Code Dorsal Barn Vent Barn RHF Flipper Carapace Amput'd Damage LHF Fish Fishing Tail Hook Line Cloaca Seams Boat Shark Attack Impact no Photos PPS

Date: Sat, 1 May 2010 14:32:14 -1000
From: Devon Francke <devon.francke@gmail.com>
To: George H. Balazs <gbalazs@honlab.nmfs.hawaii.edu>
"Stacy [Kubis] Hargrove" <Stacy.Hargrove@noaa.gov
Cc: David Hyrenbach <khyrenba@gmail.com>
Subject: Summary of TDR data from April 27 field day

Hi George and Stacy! I have attached a brief summary of the data collected from the TDRs from our field work on April 27. It discusses the performance of the tags, the average and median dive depths of both tagged turtles, and the number of overlapping data between the TDRs and acoustic tags/receivers. Overall, we are very

-->

upload more data!

In regards to the acoustic tag (Vemco, V16 tags) specifications you requested:

pleased with the results, and I look forward to our next session to

1) The small (unarmored) acoustic tags: 5.2 cm length, 1.6 cm diameter (we have 3 more tags)

The large (armored) acoustic tags: 7.2 cm length, 1.8 cm diameter (we have 5 more tags)

2) According to the manufacturer, the casing for these tags cannot be foster removed, so the batteries cannot be replaced on the tags.

3) We contacted the manufacturer to inquire about potential interference between two acoustic tags being placed on one turtle, and we are currently awaiting a response from them. In the meantime, we tested to see if the signal of two acoustic tags would interfere if placed next to each other using the V100 receiver:

- If the tags are placed side by side, there is definite interference

- could not hear one of the tags.

- If the tags are placed in line (with transducers facing away from each other) - both tags can be heard.

The reassuring result of this test is that we can check for interference before we attach the second transmitter to the turtle.

Let me know if you have any questions, comments, or concerns!

Devon Francke

[ Part 2, Application/MSWORD 547KB.] [ Unable to print this part.]

Date: Thu, 15 Apr 2010 14:34:47 -1000 (HST)

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

To: Devon Francke <devon.francke@gmail.com>
Cc: David Hyrenbach <khyrenba@gmail.com>,

"Stacy [Kubis] Hargrove" <Stacy.Hargrove@noaa.gov>

Subject: Re: Scheduling our next trip

Devon I started to read you message, but quickly decided it's jumping too far forward for me at present. That's because of the BiG UnKnowN of how your loggers performed, something we won't know until we capture there on Tuesday April 27. So, I'll revisit your message after April 27th. Cheers, George

On Thu, 15 Apr 2010, Devon Francke wrote:

> Hi George and Stacy! In anticipation of scheduling the next turtle catching > session, David and I felt it would be a good idea to lay out for both of you > our potential plans for the entire study period to hopefully figure out how > we'll go about doing the rest of these sessions, as well as how often/how > many we'll be doing.

> Our first tagging session was on March 18th of this year, and the memory of > the TDRs last approximately 30 days (or 1 lunar cycle). So, I have declared > March 18 as the start of the first lunar cycle in my study time period. The > study period will also be broken into 4 seasons, which will be 3 lunar > cycles in a row - spring (March 18, 2010 - June 18), summer (June 18 - Sept > 18), fall (Sept 18 - Dec 18), winter (Dec 18 - March 18, 2011) (dates are > approximate).

> In an ideal situation, we would be able to run these acoustic tags and TDRs
> for the full year. However, there are a few constraints that may limit this
> from happening, which I'll discuss next: 1) battery length of the acoustic
> tags, 2) whether or not I receive the Nancy Foster Scholarship, and 3)
> graduation in May-August of 2011. Then we'll need to figure out how many
> turtle catching sessions we will be able to perform in a couple different
> scenarios (realistic vs. ideal).

> The first issue to discuss is that of the acoustic tags which are already on > the 12 turtles. These tags were attached on either October 29/30 of October > 2008 (6 tags = 3 big/3 small), or February 18 of 2009 (another 6 tags - 3 > big/3 small). The battery life of these devices is (739 days,) meaning that > by November 10, 2010, the first set of batteries on the tags will run out, > which means we'd be able to sample all of spring, all of summer, and most of > fall with the current tags being used. And, it just so happens that the 3 > turtles which received TDRs were turtles tagged with acoustic tags in > October 2008. So, it wouldn't be possible to sample with the current > acoustic tags during the winter. The TDRs would still work fine, but using > the combination of both TDRs and acoustic tags gives us the power to > determine diving behavior (TDR) as well as location of the dive (acoustic > tag). However, we currently have another 8 acoustic tags which are ready to be attached to turtles (5 big tags, 3 small tags). If we would be able to attach these new tags to turtles at the site, along with TDRs, then the battery life would last more than enough to be able to sample winter as well, and could potentially be used for further research on turtles at the site. This would be your decision, George and Stacy, if you feel you would be willing to attach more tags to turtles, or if you feel that it wouldn't be worthwhile to do so.

> The second issue (the Nancy Foster Scholarship) actually ties in with the > third issue, which is my planned graduation time. Worst case scenario, I > don't get the scholarship, and I will graduate in either May or August of

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> 2011. If this is the case, then it would make more sense to stop tagging > turtles once the battery life runs out, in November 2010. But, if I do get > the Nancy Foster Scholarship, then I will have funding for an entire extra > year of graduate school, and perhaps putting the extra tags on turtles at > the site (only the ones likely to stick around the site or return, or > replacing old acoustic tags on turtles with new ones) may become more of a > feasible idea. Plus, since the tags would last so long, we could > potentially do another full year of the study. > The last thing to discuss is how often we would attempt to capture turtles. > As the memory of the TDRs lasts about 30 days, it would be great if we could > have 2 sets of data per season, meaning 2 field capture events per season. > It would be important to make sure we schedule the events so that the 30 day > lunar cycle would not span between 2 different seasons (e.g. started at the > end of spring so that it ends in summer). So, tentatively, this would mean, > in a realistic situation: - spring 2010 (March 18 - June 18): one turtle capture session on March 18 > (DONE!!) and end of April (27 or 29 - these 2 days would work best for me or > David) > - summer 2010 (June 18 - Sept 18): one turtle capture session around > mid-June, and one around early August - Fall 2010 (Sept 18 - Dec 18): one turtle capture session in late > September (and that would be it because the tag batteries would expire > shortly after this 30 day period ended). > However, if we decide to put more tags on the turtles and extend the study > for a full year, in the idealized situation: > - Spring and summer from above would be the same > - Fall 2010 (Sept 18 - Dec 18): one turtle capture session in late > September, and one in early November - Winter 2010-2011 (Dec 18 - March 18): one turtle capture session in late > December or early January, and one in mid-February. - Then finally, there would be a session after March 18 to attempt to get > all tags back. > If this seems like it would be too many times (a total of 9 in the course of > 1 year, which includes getting the tags back at the end, and one of which > we've already done), then we could easily do one session per season instead > of 2, reducing the total number of events to 5 in one year (includes the one > we've already done, as well as the final one to get the tags back). > So, if you, George and Stacy, could let David and me know your opinion about > attaching more acoustic tags to turtles (to extend the study past 8 months > when the batteries run out), and how many sessions you'd be willing to do > based on the above schedule, that would be great! If you have any > questions, feel free to e-mail me (devon.francke@gmail.com) or call me > (651-235-8023) any time! Thank you so much for your help! > Devon Francke > > On Thu, Apr 15, 2010 at 9:21 AM, George H. Balazs < > gbalazs@honlab.nmfs.hawaii.edu> wrote:

> > I will now contact MWP and ask if Tuesday or Thursday are best for him/his

> > family.

1) PERFORMANCE OF THE TAGS: One of the four tags (L150A-0190, 15 – second interval, turtle #2) malfunctioned half-way (50.1%, 16 days) through the deployment, evidenced as an abrupt step-like increase in depth (~ 8 dbars, 8 m) and a progressive increasing drift in the pressure values (Table 1). No diel cycles in depth are apparent for this turtle, when the entire deployment is considered (Figure 1). Yet, it is noteworthy that there was no similar signal n in the temperature data, suggesting that damage to the pressure sensor may be the culprit (Table 1).

An air test of the malfunctioning tag (L150A-0190), which involved running the device for 5 minutes on a 15-second interval, yielded pressure readings of 65 dbars (6.5 m). We will return the tag to the manufacturer for servicing / replacement.

Table 1. Comparison of data from the malfunctioning TDR, during the entire 33-day deployment ("all data") and the 16-day period before the malfunction ("good data", 16 day period).

	good data	all data
Total # records	96466	192316
Max depth (m)	4.2	13.5
Average depth (m)	1.3	4.3
Median depth (m)	1.5	2.6
Max temp (deg C)	32.1	32.1
Min temp (deg C)	22.0	21.2
Average temp (deg C)	24.6	24.5
Median temp (deg C)	24.1	24.1

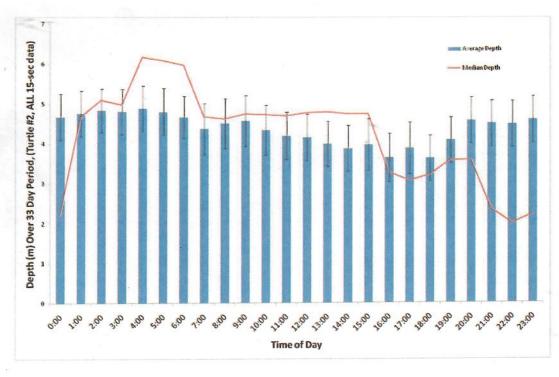


Figure 1.
Average
and median
depth as a
function of
time of day
(hourly) for
turtle #2
(TDR #
L150A0190) over
a 33 day
period.

Note: Depth sensor malfunction in day 16. 2) TURTLE DIVING BEHAVIOR: Deeper dives occurred during night than during day, which suggests the turtles enter the cove at night for resting where the water is slightly deeper, and forage during the day in the shallower cove or bay area. This is the case for both turtles, but only when the good data is analyzed for turtle #2 (up to day 16). For turtle #16 (TDR # L150A-0189), the median and average values do not quite match up, suggesting there may have been some nights where the turtle rested in areas other than the cove which were a bit deeper. Matching the data with the acoustic tags for those time periods will confirm/disprove this.

Table 2. Summary of data from four TDRs, deployed on two turtles and sampling at 1-second or 15-second resolutions. Note that for device L150A-0190, the data span only 16 days before tag malfunction.

	L150A-0191	L150A-0190	L150A-0188	L150A-0189
Turtle MT #	2	2	16	16
Acoustic Tag ID #	52534	52534	52532	52532
Sampling Interval (sec)	1	15	1	. 15.
Total # records	192316	96466	192316	192316
Max depth (m)	1.8	4.2	2.3	13.0
Average depth (m)	0.6	1.3	0.7	1.3
Median depth (m)	0.9	1.5	0.7	0.5
Max temp (deg C)	30.63	32.1	34.9	32.3
Min temp (deg C)	21.9	22.0	21.7	20.8
Average temp (deg C)	23.6	24.6	24.6	24.5008846
Median temp (deg C)	23.2	24.1	23.9	24.4

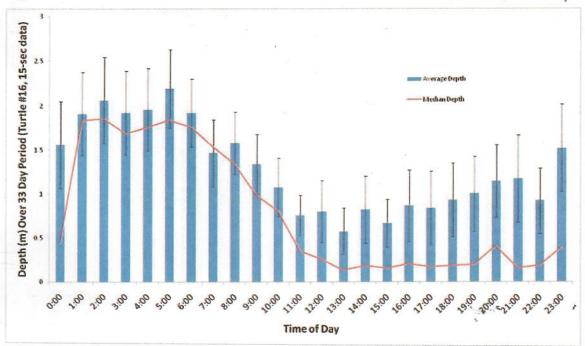


Figure 2. Average  $(\pm SE)$  and median depth as a function of time of day for Turtle # 16 (TDR # L150A-0189) over a 33 day deployment.

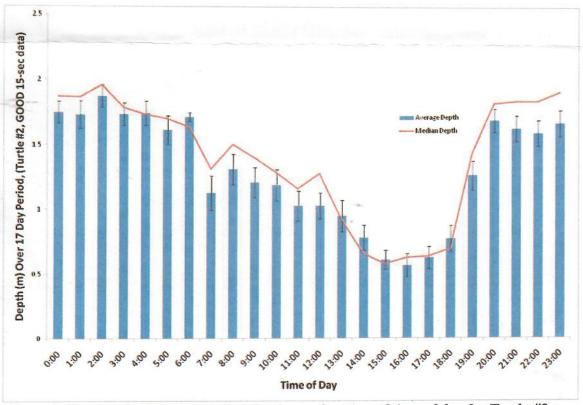


Figure 3. Average (± SE) and median depth as a function of time of day for Turtle #2 (TDR # L150A-0190) over a 16 day deployment, before the pressure sensor malfunctioned.

Preliminary analysis of Juvenile Green Sea Turtle TDRs data April 27, 2010 - Devon Francke

3) TURTLE DIVING BEHAVIOR WITHIN ACOUSTIC RECEIVER RANGES: Both turtles were recorded in the three habitats monitored acoustically (Cove, Canal, and Bay) during the deployment of the 15-second TDRs (Table 2), providing spatially-explicit diving and water temperature information for the three habitats considered in this study.

Table 3. Summary of spatial overlap between TDR data and acoustic receiver detections (2 minute transmission rate) in three locations: Cove, canal bend (around the corner), and Kailua Bay (Bay; approximately 200 m from shore offshore from the cove). For TDR # L150A-0190, only the "good data" before the sensor malfunction is recorded (16 days).

Turtle MT#	TDR Sampling Rate (sec)	TDR#	Turtle acoustic tag ID #	Cove	Canal	Bay
2	1	L150A-0191	52534	679	0	4
2	15	L150A-0190	52534	2333	147	56
16	1	L150A-0188	52532	54	272	61
16	15	L150A-0189	52532	704	5331	267

MEMORAND	U.S. DEPARTMENT OF COMMERCE  National Oceanic and Atmospheric Administration NATIONAL MARINE FISHERIES SERVICE Pacific Islands Fisheries Science Center 2570 Dole St. • Honolulu, Hawaii 96822-2396 (808)983-5733 • Fax: (808)983-2902
FROM:	George H. Balazs, cell 286-2899 Leader, Marine Turtle Research Program Telephone: (808) 983-5733
	Fax: (808) 983-2902
SUBJECT:	Notification of intended research involving capture and tagging of sea turtles
From (date)	ULY I, 2010 (time) (AM) to
(date) /hu	solog only (time) 4 Pm.
I will be conduc	ting capture, tagging, and related research activities of sea turtles at
	) 2h0 . These activities are
authorized unde	r Federal Fish and Wildlife Permit TE-739350-3,
50CFR 17.31(b)	, 50CFR 17.22, State of Hawaii Special Activity Permit
SAP 200 <b>8</b> -95, ar	nd Permit No. 1581.
X	Research activities will be conducted from shore by snorkeling and/or scuba diving to hand-capture turtles.
	Research activities will be conducted from shore using a closely monitored tangle net to capture turtles.
	Research activities will be conducted using a bullpen net.
	Research activities will be conducted from a boat by snorkeling and/or scuba diving to hand capture turtles. The boat's identification number, name, and description are as follows:
	Research activities will involve turtles basking ashore.
	VOAT DIGNS WILL BE
	DISPCTYCO!

## FAX:

DOCARE-OAHU 453-6789

NMFS-LE 541-3166

DOCARE-HILO (808) 974-6222

DOCARE-KONA (808) 327-4963

DOCARE-WAIMEA (808) 887-6199

DOCARE-MAUI (808) 984-8111

DOCARE-MOLOKAI (808) 553-3951

Skippy Hau (808) 243-5833

Marc Rice (808) 881-4003

Sallie Beavers (808) 329-2597

\* \* \* Communication Result Report ( Jun. 29. 2010 12:59PM ) \* \* \*

1)

Date/Time: Jun. 29. 2010 12:58PM

File No. Mode	Destination	Pg(s)	Result	Page Not Sent
0606 Memory TX	94536789	P. 1	OK	

Reason for error
E. 1) Hang up or line fail
E. 3) No answer
E. 5) Exceeded max. E-mail size

E. 2) Busy E. 4) No facsimile connection

U.S. DEPARTMENT OF COMMERCE FROM: George H. Balazs, cell 286-2899 Leader, Marine Turtle Research Program Telephone: (808) 983-5733 (808) 983-5733 (808) 983-2902 SUBJECT: Notification of intended research involving capture and tagging of sea turtles authorized under Federal Fish and Wildlife Permit TE-739350-3, 50CFR 17.31(b), 50CFR 17.22, State of Hawaii Special Activity Permit SAP 2008-95, and Fermit No. 1581. Research activities will be conducted from shore by snorkeling school between the sound school between the school between the sound school between the school between monitored tangle net to capture turties. Research activities will be conducted using a bullpen net. Research activities will be conducted from a boat by snorkeling and/or scuba diving to hand capture turtles. The boat's identification number, name, and description are as follows:

\* \* \* Communication Result Report (Jun. 29. 2010 1:00PM) \* \* \*

1)

Date/Time: Jun. 29. 2010 12:58PM

File No.	Mo d e	Destination	Pg(s	)	Result	Page Not Sent
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Reason for error
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E. 3) No answer
E. 5) Exceeded max. E-mail size

E. 2) Busy E. 4) No facsimile connection

мемопан		National Oceanid NATIONAL MARINE I Pacific Islands Fisher	ries Science Center	Administration
FROM:	George H. Ba Leader, Marin Telephone: Fax:	iazs, cell 286-2899 e Turtle Research 9769 (808) 983-5733 (808) 983-2902	Sh	5
SUBJECT:	Notification of i tagging of sea	ntended research invol turtles	ving capture and	
From (date) (date) (date) / Null be conduct	Oby 1, Solow ord ting capture, tagle UAINUT	20/0 (tirr y (tirr ing, and related research	ne) 4P	m to
	)ahu /		. Phese	activities are
	50CFR 17.22, St Permit No. 158		activity Permit	*
	Research ac	tivities will be conducted by diving to hand-cation of the diving to hand-cation of the divine will be conducted the divine handle net to capture	pture turties. &n 5 from shore usin	d
	Research act	ivities will be conducted	d using a bullpen ı	net.
a a a a a a a a a a a a a a a a a a a	and/or so	vities will be conducted uba diving to hand capt ion number, name, and	ture turtles. The b	ooat's
1	Research activit	les will involve turtles b	asking ashore.	

TURTL	EID NS	S_DATE	NS_SITE	RECOVERY	NEW_TAGS	SCL	CCL	WEIGHT	TUMORS	TUMSCR
407A3A10	622	2/18/2009	KAWAINUI	Υ	Υ	57.3	62	54.1	N	- 0
45275F03	37D	2/18/2009	KAWAINUI	N	Υ	52.2	57	67.1	N	0
45261528	31A	2/18/2009	KAWAINUI	N	Υ	48.3	52	35.1	N	0
46080615	53C	2/18/2009	KAWAINUI	Υ	Υ	50.6	53.5	37.1	N	0
443A1C2	318	2/18/2009	KAWAINUI	N	Υ	49.2	53	34.6	N	0
422F0B6F	F62	2/18/2009	KAWAINUI	Υ	N	61.8	66.5	68.1	N	0
44397C3E	345	2/18/2009	KAWAINUI	Υ	N	66	72	81.5	N	0
423F331E	058	2/18/2009	KAWAINUI	Υ	Υ	62.9	68	75.5	N	0
45285D1/	444	2/18/2009	KAWAINUI	N	Υ	54.2	58	40.5	N	0
46016A0A	A4A	2/18/2009	KAWAINUI	Υ	N	49.3	52.5	28	N	0
46016E3E	318	2/18/2009	KAWAINUI	Υ	N	56.3	61	53	N	0
44522B6	171	5/14/2009	KAWAINUI	Υ	N	52.8	57	42	N	0
46016A0A	44A	5/14/2009	KAWAINUI	Υ	N	49.1	52	31.5	N	0
443A197	133	5/14/2009	KAWAINUI	Υ	N	52.3	56.5	35	Υ	1
407A3A1	622	5/14/2009	KAWAINUI	Υ	N	57	62	56.5	. N	, 0
422F0B6	F62	5/14/2009	KAWAINUI	Υ	N	61.4	66	68.6	N	0
443A1C2	318	5/14/2009	KAWAINUI	Υ	N	48.9		35.5	N	0
4601794	F15	5/14/2009	KAWAINUI	Υ	N	56			N	0
44523B62	20A	5/14/2009	KAWAINUI	Υ	N	53.4	57.5	47.5	N	0
4524247	03C	5/14/2009	KAWAINUI	N	Υ	55.6	59	52	N	0
41352260	04F	8/7/2009	KAWAINUI	Υ	N	60.3	64.5	63	N	0
46080615	53C	8/7/2009	KAWAINUI	Υ	N	50.7	54	44	N	0
423F1F02	221	8/7/2009	KAWAINUI	Υ	N	52	55.5	48	N	0
500C4B7C	D2E	8/7/2009	KAWAINUI	Υ	N	61.4	65.5	67.9	N	0
443A197		8/7/2009	KAWAINUI	Υ	N	52.6	57	42.5	N	1
4A355B32		8/7/2009	KAWAINUI	N	Υ	48.7	52	35	N	0
44523B62	avavaga.	8/7/2009	KAWAINUI	Υ	N	53.4	57	49	N	0
407A3A16	622	8/7/2009	KAWAINUI	Υ	N	57	61.5	55	N	0
4601794		8/7/2009	KAWAINUI	Υ	N	56	60.5	54.5	N	0
41356C0		8/7/2009	KAWAINUI	Υ	N	57.7	61.5	61.4	N	0
4608073D		8/7/2009	KAWAINUI	Υ	N	54.6	59.5	48	N	0
46080210	No. of Contrast of		KAWAINUI	Υ	N	49.5	53	35.5	N	0
4A2E0910		8/7/2009	KAWAINUI	N	Υ	57.3	61.5	59.5	N	0
4601787			KAWAINUI	Υ	N	47.1	51	33.9	N	0
422F0B6I			KAWAINUI	Υ	N	61.6	65.5	70.4	N	0
443A0172	and the same		KAWAINUI	Υ	N	58	62	45.9	N	0
424F7A7E			KAWAINUI	Υ	N	54.4	57.5	49	N	0
46016A0A			KAWAINUI	Υ	N	50.4	54	35.5	N	0
44127C69			KAWAINUI	Υ	N	53	57	42.5	N	0
500C4B7C			KAWAINUI	Υ	N	62.5	66	68.5	N	0
44397C3E			KAWAINUI	Υ	N	67	72.5		N	0
457C6920			KAWAINUI	Y	N	62.7		2-2-000	10000	. 0
46080210	ASSESSED ASSESSED	Printed and page 2007 of the St.	KAWAINUI	Υ	N	50.3				0
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*	TURTLEID	NS_DATE	NS_SITE	RECOVERY	NEW_TAGS	SCL	CCL	WEIGHT	TUMORS	TUMSCR
	424E260A37	3/18/2010	KAWAINUI	Υ	N	58	62	57.5	N	- 0
	407A3A1622	3/18/2010	KAWAINUI	Υ	N	58.2	63	58	N	0
	443A197133	3/18/2010	KAWAINUI	Υ	N	53	57	43	Υ	1
	44522B6171	3/18/2010	KAWAINUI	Υ	N	54.3	58	44.5	N	0
	422F0B6F62	3/18/2010	KAWAINUI	Υ	N	62.2	66.5	72.5	N	0
	470C676D20	3/18/2010	KAWAINUI	N	Υ	44.4	47.5	26	N	0
	470B1F572D	3/18/2010	KAWAINUI	N	Υ	49.3	53	38	N	0
	467D323920	3/18/2010	KAWAINUI	N	Υ	59.1	. 64	63	N	0
	470A58172E	3/18/2010	KAWAINUI	N	Υ	58.2	62.5	58.5	Υ	1
	470C283E79	3/18/2010	KAWAINUI	N	Υ	51.1	54.5	42	N	0
	443A07695B	3/18/2010	KAWAINUI	Υ	N	66.8	70.5	110.5	N	0
	46016E3B18	3/18/2010	KAWAINUI	Υ	N	56.4	60.5	51.5	N	0
	470A464779	3/18/2010	KAWAINUI	N	Υ	51	55	41.5	N	0
	422F0B6F62	4/27/2010	KAWAINUI	Υ	N	62.1		71.6	N	0
	44523B620A	4/27/2010	KAWAINUI	Υ	N	53.4	58	.52	. N	, 0
	48513F0365	4/27/2010	KAWAINUI	N	Υ	47.2	50.5	32	N	0
	4856491A40	4/27/2010	KAWAINUI	N	Υ	53	57.5	47	N	0
	4841542D7A	4/27/2010	KAWAINUI	N	Υ	48.3	52	36	N	0
	423F1F0221	4/27/2010	KAWAINUI	Υ	N	52.4	56.5	51.5	N	0
	44522B6171	4/27/2010	KAWAINUI	Υ	N	54.1	58	46	N	0
	424E260A37	4/27/2010	KAWAINUI	Υ	N	57.6		57.5	N	0
	46016E3B18	4/27/2010	KAWAINUI	Υ	N	56.5	60.5	53.5	N	0
	443A197133	4/27/2010	KAWAINUI	Υ	N	53.1	57	42	Υ	1
	4A355B323E	4/27/2010	KAWAINUI	Υ	N	49.4	52.5	40.5	N	0
	48520D1D7C	4/27/2010	KAWAINUI	N	Υ	51.5	54	41.5	N	0
	48533A2309	4/27/2010	KAWAINUI	N	Υ	44.8	48	28.5	N	0
	4853422344	4/27/2010	KAWAINUI	N	Υ	52.1	56	44.5	N	0
	44127C691C	4/27/2010	KAWAINUI	Υ	N	53.1	56	45	N	0
	424D7F6907	4/27/2010	KAWAINUI	Υ	N	61.4	65.5	69.5	N	0
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Tagging Summary from Kawainui Canal during 1/1/2000 - 3/15/2010

14 90	- 19	Carapace L	ength (cm)		
Tag Numbers	Date	Straight	Curved	Weight (lbs)	Capture Method
1350B3711, 41362A6F40	03/17/2000	47.8	51.0	31.0	Hand/Snorkel
1350F714A, 41362A6D74	03/17/2000	55.7	59.5	48.0	Hand/Snorkel
135103343, 4136381C58	03/17/2000	59.9	65.0	68.0	Net
13519225D, 413E0C3654	03/17/2000	47.5	51.0	32.0	Net
13522604F, 413706517D	03/17/2000	47.0	50.5	24.0	Hand/Snorkel
1356C0551, 4136267723	03/17/2000	44.0	47.5	26.0	Net
135787535, 4136282B44	03/17/2000	47.0	50.5	26.0	Scoop Net
1357A6136, 413629562B	03/17/2000	41.4	44.0	21.0	Hand/Snorkel
136001511, 413617E87E	03/17/2000	49.2	52.5	40.0	Scoop Net
136081368, 41360D4143	03/17/2000	60.9	66.0	77.0	Net «
13614392E, 413D771E3C	03/17/2000	55.2	58.5	48.0	Scoop Net
0379430C, 500F21393B	04/14/2000	56.1	60.0	55.0	Scoop Net
0410664C, 502E631929	04/14/2000	56.5	60.0	48.0	Hand/Snorkel
357A7148, 41362B485A	04/14/2000	44.7	46.5	26.0	Hand/Snorkel
7A316218, 4136075868	04/14/2000	57.0	60.5	52.0	Hand/Snorkel
77742365E, 4136205923	04/14/2000	63.2	67.0	73.0	Hand/Snorkel
7D080A53, 413E412430	04/14/2000			40.0	Scoop Net
7D234B3A, 5019493246	04/14/2000	57.3	61.0	46.0	Scoop Net
0E0B076D, 500F1B706C	06/07/2000	48.4	52.5	38.0	Scoop Net
0E0E3708, 5019491548	06/07/2000	56.5	60.0	49.0	Scoop Net
0E0F1131, 500F223E45	06/07/2000	48.5	52.0	39.0	Hand/Snorkel
0E393A73, 502E4F0369	06/07/2000	49.3	52.5	32.0	Scoop Net
0F173660, 5019470429	06/07/2000	56.2	60.0	55.0	Scoop Net
0F201C15, 502E55272C	06/07/2000	47.0	49.5	30.0	Hand/Snorkel
0F225263, 500F2E7415	06/07/2000	56.8	61.5	58.0	Scoop Net _
0F277741, 5019440F0B	06/07/2000	54.0	58.0	48.0	Scoop Net
1910620F, 502E4E082C	06/07/2000	55.3	59.0	42.0	Scoop Net
2E222270, 502F052B19	06/07/2000	53.0	57.0	51.0	Scoop Net
2E562F19, 502E7B4549	06/07/2000	48.2	52.0	39.0	Hand/Snorkel

Tagging Summary from Kawainui Canal during 1/1/2000 - 3/15/2010

	81	Carapace L	ength (cm)		
Tag Numbers	Date	Straight	Curved	Weight (lbs)	Capture Method
02D78036D, 502E78036D, 02E7B712E	06/07/2000	73.1	78.5	=== 2	Basking
23B2B445D, 423F596251	03/27/2001	61.2	65.5	60.0	Hand/Snorkel
243257D7F, 424D736500	03/27/2001	56.3	58.0	47.0	Hand/Snorkel
24D703E25, 42505E200C	03/27/2001	45.3	47.0	23.0	Hand/Snorkel
24D7F6907, 424F236C1F, ON1060763 (10/30/2008)	03/27/2001	49.0	52.0	34.0	Hand/Snorkel
24F337D2E, 42500C5478	03/27/2001	50.8	55.0	42.0	Hand/Snorkel
250001B11, 425021011E	03/27/2001	41.9	44.0	23.0	Hand/Snorkel
24E682401, 424F0A5470	03/29/2001	46.0	49.5	28,2	Hand/Snorkel
23D711175, 423F4E1A00	04/10/2001	59.0	62.5	63.0	Hand/Snorkel "
23E060D21, 424F0C683A	04/10/2001	53.9	57.5	45.0	Hand/Snorkel
23E08313C, 423E102E32	04/10/2001	44.3	47.0	25.0	Hand/Snorkel
24B3B3F68, 425036786C	04/10/2001	62.9	67.5	64.0	Basking
23D6D0B4E, 42500B1E0C	04/23/2001	66.1	71.0	75.0	Hand/Snorkel
3F331D58, 424E192B44, DN1066541 (2/18/2009)	04/23/2001	51.4	54.5	39.0	Hand/Snorkel
24E267041, 424F244E57	04/23/2001	39.9	41.6	19.0	Hand/Snorkel
4F205574, 424F394711	04/23/2001	58.5	62.5	61.0	Hand/Snorkel
50184D03, 42502F2967	04/23/2001	51.5	55.4	32.0	Hand/Snorkel
356A7124, 4250193B3D	05/14/2001	62.0	67.0	75.0	Hand/Snorkel
00E1C1623, 500E20056A	05/14/2001	65.4	70.5	70.0	Hand/Snorkel
00E3E541E, 500F30093E	05/14/2001	72.2	77.0	96.0	Hand/Snorkel
23A1F367E, 424F2D2B57	06/20/2001	56.8	62.0	60.0	Hand/Snorkel
24326331D, 4250286842	06/20/2001	36.8	39.0	15.0	Hand/Snorkel
24E44567D	06/20/2001	44.9	48.0	20.0	Hand/Snorkel
3A267528, 424F7C6E0E	08/16/2001	41.8	45.0	27.0	Scoop Net
3D655D30, 424E58630E, 2C4E5D13 (9/5/2006), 2F64643F (9/5/2006)	08/16/2001	56.3	60.0	45.0	Scoop Net
23E047A4F, 42501D2E76	08/16/2001	48.4	52.0	37.0	Scoop Net
23E102674, 42502E6E07	08/16/2001	63.4	69.0	84.0	Scoop Net

Tagging Summary from Kawainui Canal during 1/1/2000 - 3/15/2010

		Carapace L	ength (cm)		<b></b>
Tag Numbers	Date	Straight	Curved	Weight (lbs)	Capture Method
423F22193A, 4250241441	08/16/2001	47.5	50.0	30.0	Scoop Net
423F260E45, 424F350878	08/16/2001	58.5	64.0	67.0	Scoop Net
423F4A262D, 4250124B1D	08/16/2001	38.9	42.5	18.0	Scoop Net
424D462100, 424F7D6D0D	08/16/2001	45.9	49.0	28.0	Scoop Net
422D6D0500 (12/29/2001), 4236065D2C (12/29/2001)	08/29/2001	53.7	58.0	49.0	Scoop Net
422F0B6F62 (12/29/2001), 42346E2D7E (12/29/2001), SON1060451 (10/30/2008)	08/29/2001	49.6	53.0	38.0	Scoop Net
12363E5368 (12/29/2001), 1236540329 (12/29/2001)	08/29/2001	50.9	55.0	41.0	Scoop Net
122F12724C (12/29/2001), 122F182455 (12/29/2001)	08/31/2001	54.1	58.5	48.1	Scoop Net
423D62416D, 424E551052	09/09/2002	48.2	51.5		Scoop Net
243312253, 425032434C	09/09/2002	55.5	59.5	53.0	Scoop Net
24E7D3E79, 4250014053	09/09/2002	49.5	52.0	34.4	Scoop Net
24F7A7E1B, 424F7D5536	09/09/2002	44.7	47.0	26.0	Scoop Net
22F11212F, 4233500A78	10/02/2002	56.1	60.5	46.5	KRF Captive
22D744378, 424F282309	10/14/2002	40.0	43.0	21.0	Hand/Snorkel
23B307834, 4250253456	10/14/2002	69.3	75.0	93.0	Hand/Snorkel
23C13217D, 424D1E1F4F	10/14/2002	43.6	45.5	26.0	Hand/Snorkel
23D674056 (12/14/2002), 24F794467 (12/14/2002)	10/14/2002	75.9	80.5	110.0	Hand/Snorkel
23F1F0221, 4250012F62	10/14/2002	42.6	45.5	28.0	Hand/Snorkel
24E260A37, 424E633275, SON1060449 (10/29/2008)	10/14/2002	50.7	53.5	38.0	Hand/Snorkel
33C6F1418, 435977636D	01/23/2003	51.2	54.0	45.0	Hand/Snorkel
33D576E26, 43521B5C3A	01/23/2003	43.7	46.0	27.0	Scoop Net
3475C1405, 4349341712	01/23/2003	55.3	58.0	54.0	Scoop Net ~
34F494D19, 434F666563	01/23/2003	47.4	51.0	34.0	Scoop Net
350347D52, 43674B0001	01/23/2003	63.6	67.5	83.0	Hand/Snorkel
135142D59, 41363A0633	01/24/2003	62.8	69.0	75.0	Scoop Net
1352E0379, 413E2A1F4E	01/24/2003	56.7	61.0	55.0	Scoop Net

Tagging Summary from Kawainui Canal during 1/1/2000 - 3/15/2010

Tag Numbers	Date	Carapace Length (cm)			
		Straight	Curved	Weight (lbs)	Capture Method
1135662756, 41371A1224	01/24/2003	44.1	47.5	27.0	Scoop Net
413E4B3147, 500F245E54	01/24/2003	50.6	53.0	40.0	Scoop Net
11360F6A76, 501953310D	08/11/2003	57.7	62.5	62.0	Scoop Net
422D4F7A3F, 422F021763	08/11/2003	58.6	62.5	66.0	Scoop Net
43A01721F, 445235291E	08/11/2003	53.5	57.0	47.0	Scoop Net
43A07695B, 44523C0615	08/11/2003	60.3	64.0	79.0	Scoop Net
4523B620A, 445258695E	08/11/2003	41.8	45.0	26.0	Scoop Net
60209356A (6/11/2008), 600C4B7C2E, 500E054940	08/11/2003	58.0	62.0	60.0	Scoop Net
500E103813, 502E4B6705	08/11/2003	59.7	64.5	73.0	Scoop Net
5019236956, 5019570B0E	08/11/2003	49.1	53.5	37.0	Scoop Net
23464480D, 4237626C6C	08/12/2003	52.1	57.0	48.0	Scoop Net
4397F147E, 445207564D	08/12/2003	59.1	63.5	62.0	Scoop Net
43A197133, 4452745129	08/12/2003	42.4	46.0	23.0	Scoop Net
4517E1050, 445238604D	08/12/2003	52.5	56.0	50.0	Scoop Net
452320D78, 44526A2444	08/12/2003	40.5	43.0	22.0	Scoop Net
452712301, 44545B4905	08/12/2003	60.2	66.5	70.0	Scoop Net
601787B66, 46076C4E69	11/28/2005	42.6	46.0	24.7	Scoop Net
6017A5344, 4607574B0F	11/28/2005	48.7	52.5	30.3	Hand/Snorkel
602036C38, 4608091437	11/28/2005	44.9	48.0	28.4	Hand/Snorkel
6075D2C48, 4607631F65	11/28/2005	59.9	64.5	63.4	Scoop Net
43A24072D, 44546A6622	01/14/2008	49.5	52.5	35.0	Hand
451520141, 4452047B42	01/14/2008	51.4	55.0	40.0	Hand
4397C514D, 4452052123, ON1059582 (10/29/2008)	01/14/2008	53.6	59.0	46.5	Net
43A2B5536, 44521C0B7D	01/14/2008	53.8	57.0	51.5	Net
439725052, 44546D2D75, ON1059581 (10/29/2008)	01/14/2008	46.6	50.0	31.5	Net
43A0D3B58, 4452305B36	06/11/2008	54.5	59.0	51.3	Scoop Net
15262346D, 4452635A6B	06/11/2008	43.5	47.0	26.8	Scoop Net
454056D2D, 4601794F15	06/11/2008	54.7	59.0	55.3	Scoop Net

Tagging Summary from Kawainui Canal during 1/1/2000 - 3/15/2010

Tag Numbers	Date	Carapace Length (cm)		_	
		Straight	Curved	Weight (lbs)	Capture Method
460214212D, 460219745C	06/11/2008	60.9	65.0	68.3	Scoop Net
460201524A, 4602361966	06/11/2008	46.9	50.5	34.3	Scoop Net
4603686F19, 4608091E45	06/11/2008	52.1	55.5	45.3	Scoop Net
44397C3B45, 443A256B1F, SON1060450 (10/29/2008)	07/28/2008	65.7	72.0	84.5	Scoop Net
44522B6171, 44525C5169	07/28/2008	51.7	56.0	41.0	Scoop Net
4452396560, 44526B1B66	07/28/2008	51.1	56.5	46.0	Scoop Net
443A1F5F33, 44522F5439	07/31/2008	52.5	56.5	39.3	Stranded
457C69201F, 46017E5C03	10/29/2008	62.0	68.0	62.5	Scoop Net
4601705479, 46024D7164	10/29/2008	51.1	54.5	38.0	Scoop Net
4608021627, 46080C5929	10/29/2008	49.0	53.0	36.5	Scoop Net
4602002640, 460806153C, SON1066533 (2/18/2009)	10/29/2008	50.7	54.0	38.5	Hand/Snorkel
460173182F, 4608073D6D	10/29/2008	54.6	59.5	50.0	Scoop Net
4601643E11, 4608145B26	10/29/2008	50.2	54.5	41.0	Scoop Net
46016A0A4A, 4602193F74	10/30/2008	49.3	52.5	28.5	Scoop Net
4601684860, 46016E3B18	10/30/2008	56.3	60.5	56.0	Scoop Net
443A15535F, 443A1C2318, SON1066535	02/18/2009	49.2	53.0	34.6	Scoop Net
452575711D, 452615281A, SON1066534	02/18/2009	48.3	52.0	35.1	Scoop Net
15275F037D, 4529400D70, SON1066543	02/18/2009	52.2	57.0	67.1	Scoop Net
45242A3628, 45285D1A44	02/18/2009	54.2	58.0	40.5	Scoop Net
1524247D3C, 4A41464E15	05/14/2009	55.6	59.0	52.0	Hand/Snorkel
4A2E09105C, 4A2E7F5931	08/07/2009	57.3	61.5	59.5	Scoop Net
170C26621E, 4A355B323E	08/07/2009	48.7	52.0	35.0	Hand/Snorkel