

NRR-PMDAPEm Resource

From: Steve Weege [steveewege@gmail.com]
Sent: Thursday, January 09, 2014 2:25 PM
To: Meghan Koperski
Cc: Audra Livergood - NOAA Federal; Dave Clark; David Niebch; Ed Hollowell; Jodie Gless; John Jones; Ken Frehafer; Marine Turtle Permit; Michael Bresette; EndangeredSpecies Resource; SCO@dep.state.fl.us; Shelley Norton; Vince Munne
Subject: December 2013 FPL Marine Turtle Removal Monthly Report
Attachments: December 2013 Marine Turtle Captures.rtf; Monthly Report Notes 2013.xls; FPL St. Lucie Capture Summary 2013.xls; Copy of Power Plant Causal Turtles.pdf

Mrs. Meghan Koperski
Tequesta Field Laboratory
19100 SE Federal Highway
Tequesta, FL 33469

**Subject: Marine Turtle Removal Monthly Summary
December 2013**

Dear Meghan,

Attached, please find the monthly summary of marine turtle removals for December 2013. This month, we captured nineteen (19) *Caretta caretta* and twenty-seven (27) *Chelonia mydas* in the intake canal of the St. Lucie power plant on Hutchinson Island. There was one mortality and two sea turtles were sent for rehabilitation during the month of December.

On December 6th, a juvenile green turtle with papillomas was removed from the surface of the temporary 5-inch barrier net. The turtle had numerous tumors which were categorized as heavy based on the Balazs score. The Florida Fish and Wildlife Conservation Commission was contacted because of the severe papillomatosis and transport to a suitable rehab facility was arranged. A representative from the Loggerhead Marinelifelife Center picked up and transported the turtle to the Gumbo Limbo Nature Center in Boca Raton for rehabilitation. This incident was not considered causal to power plant operations.

On the morning of December 26th, an emaciated and lethargic subadult loggerhead sea turtle was found at the surface of the temporary 5-inch barrier net. Inwater Research Group biologists transported the turtle to the Loggerhead Marinelifelife Center in Juno Beach at the request of the Florida Fish and Wildlife Conservation Commission (FWC). Once the animal was admitted into rehab, blood work showed that it was severely anemic and mildly hypoglycemic. As of January 6th, the turtle was eating well and its blood glucose levels were within the normal range. The turtle has been administered antibiotics, iron and fluids but remains anemic and will be monitored closely. This sea turtle stranding was also deemed non-causal to power plant operations.

On December 27th, a juvenile green turtle was found underwater, pinned by a buoy supporting the temporary 5-inch barrier net. There was also a hook in the right corner of the mouth. After consultation with FWC, the turtle was held on ice for necropsy by Dr. Nancy Mettee, DVM. The final determination by the veterinarian was that the turtle died from forced submergence (drowning) and, consequently; this incident was considered causal to power plant operations.

Throughout the month of December, the 5-inch barrier net experienced only light loads of algae and jellyfish that entered into the intake canal system. However, due to a significant accumulation of algae over the previous

month, Underwater Engineering Services, Inc. inspected and cleaned the temporary 5-inch barrier net in the beginning of December. Overall, the temporary barrier net has performed as designed and no turtles have been observed beyond the 5-inch net since December 1st, when a juvenile green turtle was removed from the power plant intake wells. This turtle was believed to have moved down the canal after the barrier net became partially submerged for several hours on November 26th. No other turtles have been observed beyond the 5-inch net. Florida Power & Light has moved beyond the design phase for a permanent 5-inch barrier net and awarded the contract for its installation with an expected completion date in 2014.

The tag numbers and morphometric data for all turtles captured during the month have been included with this report (see attachments/addendums). Also included is a spreadsheet for all captures, mortalities, injuries, and causal events delineated by species and by month for the year 2013. In addition, this spreadsheet also tracks fresh scrapes incurred on captured turtles for the current month, as well as the entire year. An additional Excel spreadsheet was added this year that tracks all causal injuries and mortalities incurred by sea turtles at the St. Lucie Plant since 2001.

Please feel free to contact me with any questions.

Sincerely,

Steve

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From: Steve Weege

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Files	Size	Date & Time
MESSAGE	4439	1/9/2014 2:25:06 PM
December 2013 Marine Turtle Captures.rtf		149044
Monthly Report Notes 2013.xls	177216	
FPL St. Lucie Capture Summary 2013.xls		185920
Copy of Power Plant Causal Turtles.pdf	73845	

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**MARINE TURTLE REMOVALS
ST. LUCIE PLANT INTAKE CANAL
DECEMBER 2013**

Date	Species	Note	Tag #'s	SMCL (cm)	SSCL (cm)	CSCL (cm)	CMCW (cm)	SMCW (cm)	SMPL (cm)	Weight (kg)	Method
12/1/2013	<i>Chelonia mydas</i>	1	4A0C222135	26.6	26.9	28.7	24.9	21.4	21.2	2.4	Intake well
12/2/2013	<i>Caretta caretta</i>	2	43046F0C7F	79.0	79.9	85.9	78.3	63.6	60.9	72.5	South net
12/2/2013	<i>Chelonia mydas</i>	3	4B0C06025A	46.7	47.2	50.2	43.5	36.9	39.0	13.6	South net
12/2/2013	<i>Caretta caretta</i>		EEP371/EEP372	64.5	65.8	71.5	68.0	54.6	50.4	39.2	North net
12/2/2013	<i>Chelonia mydas</i>		EEP373	26.9	27.3	28.4	24.4	21.7	22.6	2.6	Hand capture
12/2/2013	<i>Chelonia mydas</i>	4	EEP374/EEP375	49.4	49.6	53.7	46.9	38.9	40.4	15.6	North net
12/2/2013	<i>Chelonia mydas</i>		EEP376/EEP377	49.4	49.6	52.3	43.0	36.8	41.0	14.2	North net
12/3/2013	<i>Chelonia mydas</i>		EEP378/EEP379	70.2	71.0	75.0	66.9	56.6	58.0	45.2	North net
12/4/2013	<i>Chelonia mydas</i>	5	EEA321/EEP340	46.2	46.4	49.6	45.3	38.4	39.7	14.2	South net
12/4/2013	<i>Caretta caretta</i>		EEP380/EEP381	54.7	56.4	59.9	56.7	47.2	44.6	25.1	South net
12/5/2013	<i>Chelonia mydas</i>		EEP382/EEP383	36.6	36.7	38.5	33.2	29.0	30.2	6.7	South net
12/5/2013	<i>Chelonia mydas</i>		EEP384/EEP385	41.7	42.3	44.5	38.7	34.3	35.4	8.5	North net
12/5/2013	<i>Caretta caretta</i>		EEP386/EEP387	60.6	61.9	67.0	62.4	51.6	47.5	31.8	South net
12/5/2013	<i>Caretta caretta</i>		EEP388/EEP389	56.8	58.0	60.5	59.9	49.9	46.8	27.2	North net
12/5/2013	<i>Caretta caretta</i>		EEP390/EEP391	29.1	29.8	31.7	26.8	23.5	24.5	3.1	South net

Date	Species	Note	Tag #'s	SMCL (cm)	SSCL (cm)	CSCL (cm)	CMCW (cm)	SMCW (cm)	SMPL (cm)	Weight (kg)	Method
12/6/2013	<i>Chelonia mydas</i>	6	JRG131206-01	41.0	41.4	44.2	38.2	33.4	33.4	8.2	Barrier net
12/7/2013	<i>Chelonia mydas</i>		EEP392/EEP393	69.5	69.7	73.8	64.1	54.6	56.8	45.0	North net
12/8/2013	<i>Chelonia mydas</i>	7	EEP394/EEP395	68.2	68.9	74.2	67.3	53.7	56.4	45.8	South net
12/9/2013	<i>Chelonia mydas</i>		989001001237743	26.9	27.4	28.6	24.9	22.1	22.6	2.5	Hand capture
12/9/2013	<i>Chelonia mydas</i>		989001001237746	25.7	26.1	27.9	24.6	22.2	21.7	2.3	South net
12/11/2013	<i>Caretta caretta</i>		EEP398/EEP399	54.9	55.7	58.8	58.3	46.0	43.4	25.4	North net
12/11/2013	<i>Caretta caretta</i>		EEP400/EEP401	58.8	59.7	64.9	63.0	49.9	45.2	31.9	South net
12/13/2013	<i>Chelonia mydas</i>	8	BBR111/EEP404	48.9	49.1	53.0	46.8	38.9	40.9	14.3	North net
12/13/2013	<i>Caretta caretta</i>		EEP402/EEP403	55.8	57.6	62.9	62.3	48.7	44.4	29.7	North net
12/16/2013	<i>Chelonia mydas</i>	9	EEP405/EEP406	54.2	54.3	57.6	49.9	42.9	47.2	23.3	South net
12/17/2013	<i>Caretta caretta</i>		EEP407/408	73.4	73.9	81.4	76.0	60.0	58.5	59.7	North net
12/17/2013	<i>Chelonia mydas</i>		EEP409/EEP410	48.3	48.5	51.1	45.8	38.5	39.0	14.9	North net
12/20/2013	<i>Chelonia mydas</i>		989001001237725	27.3	27.8	28.7	25.4	22.9	23.0	2.6	Dip net
12/20/2013	<i>Caretta caretta</i>		EEP411/EEP412	61.1	63.5	69.6	64.8	52.0	48.3	36.7	North net
12/21/2013	<i>Chelonia mydas</i>		989001001237726	25.8	26.1	27.6	22.5	20.2	22.5	2.3	Dip net
12/21/2013	<i>Chelonia mydas</i>		989001001237744	26.4	27.0	28.8	24.9	22.3	21.7	2.4	Hand capture
12/22/2013	<i>Chelonia mydas</i>	10	EEA171/EEL989	39.2	39.6	41.7	35.8	31.0	33.0	7.8	North net
12/26/2013	<i>Chelonia mydas</i>	11	EEP413/EEP414	51.4	51.7	54.1	48.2	41.6	42.6	17.4	North net
12/26/2013	<i>Caretta caretta</i>	12	STW131226-01	59.3	59.9	64.7	62.9	51.0	45.0	26.9	Barrier net
12/27/2013	<i>Caretta caretta</i>		EEP415/EEP416	73.7	75.1	82.2	75.0	59.3	55.3	7.8	North net

Date	Species	Note	Tag #'s	SMCL (cm)	SSCL (cm)	CSCl (cm)	CMCW (cm)	SMCW (cm)	SMPL (cm)	Weight (kg)	Method
12/27/2013	<i>Chelonia mydas</i>	13	STW131227-01	24.9	25.1	26.3	22.2	20.1	20.9	1.8	Barrier net
12/28/2013	<i>Chelonia mydas</i>		EEP417/EEP418	37.4	37.5	40.0	33.8	29.4	30.4	6.1	Dip net
12/29/2013	<i>Caretta caretta</i>		EEP419/EEP420	62.0	63.2	68.9	63.0	53.1	50.5	36.7	North net
12/30/2013	<i>Caretta caretta</i>		EEP421/EEP422	69.1	70.8	75.9	70.8	57.9	55.6	48.8	North net
12/30/2013	<i>Chelonia mydas</i>		EEP423/EEP424	44.3	44.6	46.7	41.2	35.2	35.6	11.3	North net
12/30/2013	<i>Caretta caretta</i>		EEP425/EEP426	60.6	62.2	66.4	61.5	52.7	49.0	36.8	North net
12/30/2013	<i>Chelonia mydas</i>		EEP427	26.9	27.2	28.3	24.7	22.6	23.2	2.6	Dip net
12/30/2013	<i>Chelonia mydas</i>		EEP428	28.4	28.9	30.3	26.2	23.5	23.4	3.0	North net
12/30/2013	<i>Caretta caretta</i>		EEP429/EEP430	60.1	61.4	64.5	65.3	52.4	47.5	35.8	North net
12/31/2013	<i>Caretta caretta</i>		EEP431/EEP432	76.0	80.2	85.1	74.4	58.3	57.7	58.4	North net
12/31/2013	<i>Caretta caretta</i>		EEP433/EEP434	55.5	56.4	61.8	61.5	49.4	45.3	28.8	North net

NOTES

1. Turtle retrieved from intake well #1 at 1:20 AM. This animal was spotted between the temporary 5-inch and A-1-A barrier nets shortly after the 5-inch net was submerged on 11/26/13 from a severe algae event.
2. RECAPTURE. Turtle was removed from the intake canal, tagged and released at Hutchinson Island on 8/4/02, 9/17/02, 11/5/02, 4/15/03, 7/1/03, 2/16/04, 4/11/05, 6/19/06, 9/16/06, 8/15/07, 8/7/08, 7/28/09, 11/9/09, 12/3/12 and 12/2/13.
3. RECAPTURE. Turtle was removed from the intake canal, tagged and released at Hutchinson Island on 2/9/10, 4/3/13, 6/5/13 and 12/2/13.
4. RECAPTURE. Turtle was removed from the intake canal, tagged and released at Hutchinson Island on 10/30/08, 11/7/11, 5/20/12, 8/9/12 and 12/2/13. PAPILOMAS (Balazs Tumor Score = 1 {light}, Total Tumor Score = 3). Healing shark rakings on both sides of posterior carapace.
5. RECAPTURE. Turtle was removed from the intake canal, tagged and released at Hutchinson Island on 10/30/11, 4/21/13, 11/12/13 and 12/4/13. Work-up observed by visiting Indian River State College students (marine biology class field trip).
6. REHAB (NON-CAUSAL). Stranding# JRG131206-01. PAPILOMAS (Balazs Tumor Score = 3 {heavy}, Total Tumor Score = 46). Heavy papillomas and heavy epibiont load. Turtle taken to Gumbo Limbo Nature Center in Boca Raton for rehabilitation due to severe tumor load.
7. RECAPTURE. Turtle was removed from the intake canal, tagged and released at Hutchinson Island on 7/19/06, 8/14/06, 9/13/06, 11/7/06, 10/13/07, 10/29/07, 2/3/08, 4/29/08, 6/20/08, 10/15/08, 12/16/08, 2/24/10, 3/20/13 and 12/8/13. PAPILOMAS (Balazs Tumor Score = 2 {moderate}, Total Tumor Score = 9).
8. RECAPTURE. Turtle was removed from the intake canal, tagged and released at Hutchinson Island on 4/10/12, 12/18/12, 3/29/13 and 12/13/13. PAPILOMAS (Balazs Score=2 {moderate}, Total Tumor Score=9). One new inconel tag (EEP404) inserted in left front flipper on this capture event.
9. RECAPTURE. Turtle was removed from the intake canal, tagged and released at Hutchinson Island on 9/18/11, 4/26/12, 7/7/12, 1/30/13, 5/13/13, 11/14/13 and 12/16/13. PAPILOMAS (Balazs Tumor Score = 1 {light}, Total Tumor Score = 1). One small tumor located near the tail. Turtle was otherwise robust and healthy. Two new inconel tags inserted on this capture event.
10. RECAPTURE. Turtle was removed from the intake canal, tagged and released at Hutchinson Island on 1/10/13, 9/5/13 and 12/22/13.
11. RECAPTURE. Turtle was removed from the intake canal, tagged and released at Hutchinson Island on 10/23/11 and 12/26/13. Two new inconel tags inserted on this capture event.
12. REHAB (NON-CAUSAL). Stranding# STW131226-01. Emaciated and lethargic subadult loggerhead sea turtle found at the surface of the temporary 5-inch barrier net in the morning. Inwater Research Group biologists transported the turtle to the Loggerhead Marinelife Center in Juno Beach at the request of the Florida Fish and Wildlife Conservation Commission (FWC).
13. DEAD (CAUSAL MORTALITY). Stranding# STW131227-01. A juvenile green turtle was found underwater, pinned by a buoy supporting the temporary 5-inch barrier net. There was also a hook in the right corner of the mouth. After consultation with FWC, the turtle was held on ice for necropsy by Nancy Mettee, DVM. The final determination by the veterinarian was that the turtle died from forced submergence (drowning) and, consequently; this incident was considered causal to power plant operations.

SMCL = Straight Minimum Carapace Length

SMCL = Straight Standard Carapace Length

CSCL = Curved Standard Carapace Length

CMCW = Curved Maximum Carapace Width

SMCW = Straight Maximum Carapace Width

SMPL = Straight Midline Plastron Length

	Loggerheads <i>(Caretta caretta)</i>		Green turtles <i>(Chelonia mydas)</i>		Hawksbills <i>(Eretmochelys imbricata)</i>		Leatherbacks <i>(Dermochelys coriacea)</i>		Kemp's ridley <i>(Lepidochelys kempii)</i>		Overall Totals	
	Dec-13	Year to Date	Dec-13	Year to Date	Dec-13	Year to Date	Dec-13	Year to Date	Dec-13	Year to Date	Dec-13	Year to Date
Captures	19	303	27	196	0	2	0	2	0	0	46	503
Causal Mortalities	0	0	1	2	0	0	0	0	0	0	1	2
Non-causal Mortalities	0	2	0	1	0	0	0	0	0	0	0	3
Causal Injuries	0	1	0	0	0	0	0	0	0	0	0	1
Sent to rehab	1	8	1	5	0	0	0	0	0	0	2	13
Fresh Scrapes	Dec-13	Year to Date	Dec-13	Year to Date	Dec-13	Year to Date	Dec-13	Year to Date	Dec-13	Year to Date	Dec-13	Year to Date
None	1	58	6	39	0	1	0	0	0	0	7	98
Minor	16	220	18	135	0	0	0	2	0	0	34	357
Moderate	2	24	3	22	0	1	0	0	0	0	5	47
Severe	0	1	0	0	0	0	0	0	0	0	0	1
Percent with mod/sev scrapes	10.5%	8.3%	11.1%	11.2%	N/A	50.0%	N/A	0.0%	N/A	N/A	10.9%	9.5%

St Lucie Power Plant Causal Turtles		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Injury / Mortality Totals by Species
Loggerhead	Total Captures	270	341	538	623	484	419	227	420	260	295	302	232	303	4,714
	Injuries	0	0	0	0	1	*3	0	1	1	0	0	1	1	8
	Mortalities	1	0	0	1	0	*21	0	0	0	0	1	0	0	24
Green	Total Captures	321	292	394	286	428	267	101	299	161	444	217	127	196	3,533
	Injuries	0	0	1	0	3	7	0	2	2	1	0	0	0	16
	Mortalities	4	2	1	1	1	1	1	2	0	3	1	2	2	21
Leatherback	Total Captures	2	0	4	2	0	1	1	0	1	2	0	2	2	17
	Injuries	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Mortalities	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Kemp's Ridley	Total Captures	1	0	2	1	3	3	0	2	0	7	0	0	0	19
	Injuries	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Mortalities	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hawksbill	Total Captures	6	3	6	2	2	2	1	4	2	3	2	1	2	36
	Injuries	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Mortalities	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Injury / Mortality Yearly Totals		5	2	2	2	5	32	1	5	3	5	1	3	3	69
Total Captures per Year		600	636	944	914	917	692	330	725	424	751	521	362	503	8,319

*The loggerhead causal injuries and mortalities in 2006 were all hatchlings.