

NRR-PMDAPEm Resource

From: Steve Weege [steveewege@gmail.com]
Sent: Thursday, December 05, 2013 4:05 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: November 2013 FPL Marine Turtle Removal Monthly Report
Attachments: November 2013 Marine Turtle Captures.rtf; Monthly Report Notes 2013.xls; FPL St. Lucie Capture Summary 2013.xls; Power Plant Causal Turtles.xlsx

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

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

Dear Meghan,

Attached, please find the monthly summary of marine turtle removals for November 2013. This month, we captured eleven (11) *Caretta caretta* and twenty-six (26) *Chelonia mydas* in the intake canal of the St. Lucie power plant on Hutchinson Island. There were two mortalities and two sea turtles were sent for rehabilitation during the month of November.

On November 14th, a severely decomposed subadult loggerhead sea turtle was removed from the top of the temporary 5-inch barrier net. There was no salient cause of death. After consultation with the Florida Fish & Wildlife Conservation Commission (FWC), this incident was determined to be non-causal to power plant operations and the turtle was buried behind the dune. On November 15th, a subadult loggerhead sea turtle was removed from the tangle nets that was later sent to a rehab facility. This turtle was slightly underweight and apparently too lethargic to be released. After consultation with FWC, Inwater Research Group (IRG) biologist transported the animal to the Loggerhead Marinelife Center (LMC) in Juno Beach for rehabilitation. This was deemed a non-causal stranding. On November 26th, a juvenile green turtle was found underwater on the temporary 5-inch barrier net by Underwater Engineering Services divers during a net cleaning. The turtle was recovered postmortem during a severe algae event that temporarily draped the 5-inch barrier net underwater. The animal was kept on ice and held for necropsy by Nancy Mettee, DVM. According to the necropsy report, forced submergence (drowning) was the likely cause of death based on the overall good condition of this turtle. This incident was considered causal to plant operations and counts against the take limit established by the most recent Biological Opinion set forth by the National Marine Fisheries Service. On November 30th, a juvenile green turtle was captured in the tangle nets that had fishing line in the mouth and appeared to be hooked deep in the throat. The turtle also had extensive flipper and carapace damage from an old healed injury. After consultation with FWC, IRG transported the turtle to LMC for rehabilitation. This last incident was not considered causal to power plant operations.

The scheduled short-term power plant outage that began on September 29th ended in the beginning of November. Throughout the month, the 5-inch barrier net experienced severe loads of algae that entered into the intake canal system; whereas jellyfish entrainment has been light-to-moderate. There were two severe algae

intrusions, one on the 16th and the other on the 26th of the month. Both times, Underwater Engineering Services (UESI) was called upon to deploy divers, sometimes on a 24-hour basis, to inspect and clean the 5-inch barrier net. In addition, Inwater Research Group biologists ramped up canal monitoring and reporting as well as proactive turtle capturing efforts in response to these periods of heavy algae entrainment. Unfortunately, the weight of the algae overwhelmed the temporary 5-inch barrier net during the second severe algae event and the net became submerged for approximately 2.5 hours before being restored by UESI dive teams. The temporary barrier net was submerged by up to ten inches. In addition, partial occlusion of the net's surface area by algal matting resulted in increased velocity where water still flowed through, creating the potential to trap turtles by pinning them against the net. During this time period, a juvenile green sea turtle made it past the 5-inch net. The turtle eluded capture until it was recovered from the intake wells inside the power plant's protected area on December 1st. The turtle was given a health assessment, measured, photographed and released in good condition later that morning. 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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November 2013 Marine Turtle Captures.rtf		23234
Monthly Report Notes 2013.xls	173120	
FPL St. Lucie Capture Summary 2013.xls		185920
Power Plant Causal Turtles.xlsx	14161	

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

Date	Species	Note	Tag #'s	SMCL (cm)	SSCL (cm)	CSCL (cm)	CMCW (cm)	SMCW (cm)	SMPL (cm)	Weight (kg)	Method
11/1/2013	<i>Caretta caretta</i>		EEP331/EEP332	61.9	62.9	70.6	62.6	49.0	48.8	34.4	South net
11/5/2013	<i>Chelonia mydas</i>	1	EEA333/EEP333	47.6	47.8	50.8	45.2	36.7	39.1	14.1	North net
11/6/2013	<i>Caretta caretta</i>		EEP334/EEP335	71.2	72.1	77.7	75.2	60.8	56.4	55.2	North net
11/10/2013	<i>Chelonia mydas</i>		EEP336/EEP337	54.4	54.7	57.6	49.5	42.6	45.0	23.5	Dip net
11/11/2013	<i>Chelonia mydas</i>		989001001237127	26.8	27.1	28.1	24.7	22.6	23.4	2.3	South net
11/12/2013	<i>Chelonia mydas</i>	2	EEA321/EEP340	46.2	46.3	49.8	45.6	38.2	39.8	14.8	North net
11/12/2013	<i>Chelonia mydas</i>		EEP338/EEP339	49.2	49.7	53.5	48.1	40.0	40.2	17.3	North net
11/14/2013	<i>Chelonia mydas</i>	3	EEA204	54.0	54.4	58.1	50.2	43.2	47.2	22.9	North net
11/14/2013	<i>Chelonia mydas</i>	4	EEP341/EEP342	33.5	34.0	35.5	30.8	27.1	27.7	5.1	South net
11/14/2013	<i>Caretta caretta</i>		EEP343/EEP344	64.5	66.6	70.4	67.7	54.6	50.4	37.8	North net
11/14/2013	<i>Chelonia mydas</i>		EEP345/EEP346	42.9	43.4	45.9	39.1	33.3	36.3	10.8	South net
11/14/2013	<i>Caretta caretta</i>	5	JRG131114-01	61.2	61.9	67.2	65.0	55.2	46.5		Barrier net
11/15/2013	<i>Caretta caretta</i>		EEP347/EEP348	70.5	72.3	79.0	75.0	58.0	56.4	53.1	South net
11/15/2013	<i>Caretta caretta</i>	6	EEP349/EEP350	65.5	67.5	71.5	71.8	55.8	50.0	36.8	North net
11/16/2013	<i>Chelonia mydas</i>		989001001237054	28.4	28.8	30.5	25.0	22.3	24.4	2.7	Barrier net

Date	Species	Note	Tag #'s	SMCL (cm)	SSCL (cm)	CSCL (cm)	CMCW (cm)	SMCW (cm)	SMPL (cm)	Weight (kg)	Method
11/16/2013	<i>Chelonia mydas</i>		989001001237132	25.9	26.3	27.7	23.8	21.2	21.7	2.0	Barrier net
11/17/2013	<i>Chelonia mydas</i>		989001001237094	27.3	27.7	28.7	24.7	22.2	22.8	2.7	Dip net
11/18/2013	<i>Chelonia mydas</i>		989001001237141	22.9	23.4	24.7	22.1	19.0	19.1	1.6	Dip net
11/19/2013	<i>Chelonia mydas</i>		989001001237089	28.0	28.4	30.1	26.5	23.5	23.3	3.3	Hand capture
11/19/2013	<i>Chelonia mydas</i>		989001001237102	26.5	26.8	28.5	26.0	23.5	22.9	2.7	Hand capture
11/19/2013	<i>Caretta caretta</i>	7	EEA388/EEA389	61.1	62.0	66.7	64.3	51.1	49.9	32.4	Hand capture
11/19/2013	<i>Caretta caretta</i>		EEP351/EEP352	66.8	69.6	74.1	70.9	56.0	54.0	47.3	Hand capture
11/19/2013	<i>Chelonia mydas</i>		EEP353/EEP354	75.0	75.7	79.9	72.8	61.2	61.7	54.5	Hand capture
11/19/2013	<i>Caretta caretta</i>	8	EEP355/EEP356/RR S228	83.5	85.4	91.5	84.4	64.9	64.7	94.5	Hand capture
11/19/2013	<i>Caretta caretta</i>	9	UUW864/UUW865	65.7	67.3	72.5	67.6	56.9	51.3	40.5	Hand capture
11/22/2013	<i>Chelonia mydas</i>		EEP357/EEP358	34.2	34.5	36.6	30.5	27.0	28.3	5.0	South net
11/23/2013	<i>Chelonia mydas</i>		EEP359/EEP360	65.1	66.4	70.9	65.0	53.0	54.9	39.4	North net
11/24/2013	<i>Chelonia mydas</i>	10	EEP322/EEP361	53.7	54.0	57.1	50.4	41.5	43.4	19.7	South net
11/24/2013	<i>Chelonia mydas</i>		EEP362/EEP363	41.8	42.4	45.7	39.5	33.8	34.6	9.6	North net
11/26/2013	<i>Chelonia mydas</i>		4A0B1E6F4B	27.2	27.5	29.0	23.9	21.5	23.0	2.3	Barrier net
11/26/2013	<i>Chelonia mydas</i>		EEP364	28.2	28.3	30.0	25.5	22.6	23.8	3.0	Barrier net
11/26/2013	<i>Chelonia mydas</i>	11	RCW131126-01	25.1	25.4	27.3	23.4	20.5	21.1	2.1	Barrier net
11/27/2013	<i>Chelonia mydas</i>		4B04204061	29.2	29.4	31.1	26.4	23.5	24.5	3.3	North net
11/27/2013	<i>Chelonia mydas</i>		EEP365/EEP366	39.5	39.7	42.3	37.5	32.7	32.4	7.9	North net
11/30/2013	<i>Caretta caretta</i>		EEP367/EEP368	69.3	71.3	77.5	71.3	58.5	54.3	44.9	South net

Date	Species	Note	Tag #'s	SMCL (cm)	SSCL (cm)	CSSL (cm)	CMCW (cm)	SMCW (cm)	SMPL (cm)	Weight (kg)	Method
11/30/2013	<i>Chelonia mydas</i>		EEP369/EEP370	47.2	47.5	50.0	42.0	37.3	39.2	14.0	North net
11/30/2013	<i>Chelonia mydas</i>	12	RCW131130-01	41.7	42.0	44.2	41.0	34.6	34.5	9.0	North net

NOTES

1. RECAPTURE. Turtle was removed from the intake canal, tagged and released at Hutchinson Island on 5/31/12, 4/27/13 and 11/5/13. One new inconel tag inserted today in the right front flipper (EEP333).
2. RECAPTURE. Turtle was removed from the intake canal, tagged and released at Hutchinson Island on 10/30/11, 4/21/13 and 11/12/13.
3. 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 and 11/14/13. PAPILOMAS (Balazs Tumor Score = 1 {light}, Total Tumor Score = 1).
4. RECAPTURE. Turtle was removed from the intake canal, tagged and released at Hutchinson Island on 11/26/12 and 11/14/13. Large notch in marginals in left posterior carapace.
5. DEAD (NON-CAUSAL MORTALITY). Stranding# JRG131114-01. Turtle was severely decomposed; there was no salient cause of death. Weight estimated at 30kg. Animal was buried off beach after consultation with the Florida Fish & Wildlife Conservation Commission.
6. REHAB (NON-CAUSAL). Stranding# STW131115-01. Turtle was underweight and lethargic. Attempted to release but would not crawl back into ocean. Inwater Research Group biologist transported the animal to the Loggerhead Marinelife Center in Juno Beach for rehabilitation.
7. RECAPTURE. Turtle was removed from the intake canal, tagged and released at Hutchinson Island on 5/9/13 and 11/19/13. Turtle had minor healed flipper damage.
8. STRANGE TAG (PIT tag #467D450E35 in left front flipper & Inconel Tag #RRS228 in left rear flipper). Turtle originally captured in a pound net in Carteret County, North Carolina on 5/19/06. Sexed by the National Marine Fisheries Service via laparoscopy when originally captured (male). Two new inconel tags inserted on this capture event (front flippers).
9. STRANGE TAG (PIT Tag #982000190653268). "Kingston" was originally captured in Cape Cod, MA during a cold-stun event. The animal was rehabilitated by the Loggerhead Marinelife Center of Juno Beach and released on 4/19/13.
10. RECAPTURE. Turtle was removed from the intake canal, tagged and released at Hutchinson Island on 2/17/10, 10/8/13 and 11/24/13. New inconel tag (EEP361) inserted today in the right front flipper.
11. DEAD (CAUSAL MORTALITY). Stranding# RCW131126-01. The turtle was found underwater on the temporary 5-inch barrier net by Underwater Engineering Services divers while cleaning the net. The turtle was recovered postmortem during a severe algae event that temporarily drug the 5-inch barrier net underwater. The animal was kept on ice and held for necropsy by Nancy Mettee, DVM. According to the necropsy report, forced submergence (drowning) was the likely cause of death based on the overall good condition of this turtle. Sex determined from necropsy (female).
12. REHAB (NON-CAUSAL). Stranding# RCW131130-01. The turtle had fishing line in the mouth and appeared to be hooked deep in the throat. The animal was also missing the entire left front flipper (healed). Two large pieces of the carapace were missing on the right side of the body from an old healed injury (large portions of the 1st, 3rd and 4th right costal scutes missing). Inwater Research Group biologists transported the turtle to the Loggerhead Marinelife Center in Juno Beach for rehabilitation.

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	
	Nov-13	Year to Date	Nov-13	Year to Date	Nov-13	Year to Date	Nov-13	Year to Date	Nov-13	Year to Date	Nov-13	Year to Date
Captures	11	284	26	169	0	2	0	2	0	0	37	457
Causal Mortalities	0	0	1	1	0	0	0	0	0	0	1	1
Non-causal Mortalities	1	2	0	1	0	0	0	0	0	0	1	3
Causal Injuries	0	1	0	0	0	0	0	0	0	0	0	1
Sent to rehab	1	7	1	4	0	0	0	0	0	0	2	11
Fresh Scrapes	Nov-13	Year to Date	Nov-13	Year to Date	Nov-13	Year to Date	Nov-13	Year to Date	Nov-13	Year to Date	Nov-13	Year to Date
None	3	57	4	33	0	1	0	0	0	0	7	91
Minor	7	204	21	117	0	0	0	2	0	0	28	323
Moderate	1	22	1	19	0	1	0	0	0	0	2	42
Severe	0	1	0	0	0	0	0	0	0	0	0	1
Percent with mod/sev scrapes	9.1%	8.1%	3.8%	11.2%	N/A	50.0%	N/A	0.0%	N/A	N/A	5.4%	9.4%

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	633	486	419	227	420	300	299	302	232	264	4,699
	Injuries	0	0	0	1	13	0	1	1	0	0	0	0	0	5
	Mortalities	1	0	0	1	0	21	0	0	0	1	0	0	0	24
Green	Total Captures	321	292	394	286	428	267	101	209	161	444	217	127	169	1,506
	Injuries	0	0	1	0	3	7	0	2	2	1	0	0	0	14
	Mortalities	4	2	4	3	0	1	1	2	0	3	1	2	1	20
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	0	0	0	1	3	3	0	2	0	0	0	0	0	10
	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	2	68	
Total Captures per Year	600	636	944	918	917	692	580	725	424	751	524	362	457	8,273	

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

**2013 is a partial year