Florida Power & Light Company
Biological Plan of Study Implementation for St. Lucie Plant EPU
Post-Uprate Event 1 Data Report

Report to
Florida Power & Light Company

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Submitted by
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INTRODUCTION

During January and February 2013, Ecological Associates, Inc. (EAI) conducted the first post-uprate field sampling event in accordance with the St. Lucie Plant EPU Biological Plan of Study. Sampling was conducted on six days between January 3 and February 20, 2013. Data collected included general environmental data; water quality data; numbers and sizes of fish and shellfish collected by gill net, trawl, and beach seine; numbers of fish eggs and larvae and commercially or recreationally important decapod crustacean larvae collected by plankton net; and, numbers and sizes of sea turtles observed. Results of the first post-uprate sampling event are provided in this report. All data should be considered preliminary until quality assurance checks have been completed.

SAMPLING LOCATIONS

Sampling was conducted within three separate sampling sites: SL1 located midway between the St. Lucie Plant and the Ft. Pierce Inlet, SL2 located in the vicinity of the St. Lucie Plant cooling water discharge, and SL3 located midway between the St. Lucie Plant and the St. Lucie Inlet.

For the purposes of gill netting and trawling, three transects were established within each of the three sampling sites: Transect A was located approximately 600 ft from shore on the beach terrace in water depths of 8-32 ft, Transect B was located approximately 4,000 ft. from shore in water depths of 34-45 ft, and Transect C was located approximately 8,000 ft. from shore in water depths of 31-47 ft. Plankton samples were collected concurrently with trawl samples at all three sites but only on Transects A and C.

Three stations were also established within each of the three sampling sites for the purpose of beach seining: Station A was located 0.5 mi. north of the center of the site, Station B was located at the center of the site, and Station C was located 0.5 mi. south of the center of the site. At all stations, seines were pulled to the beach from a water depth of approximately 4 ft.

For the purpose of boat-based sea turtle surveys, one transect was established in each of the three sampling sites. The transects were located along nearshore hardbottom habitat in each site.

RESULTS

Environmental data were recorded at each station during each day of sampling. Data recorded included sea conditions, air temperature, wind speed and direction, and sky conditions. Environmental data are summarized by day in Table 1. Values reflect the range of values recorded throughout each day of sampling.

Water quality data were recorded at three locations and three depths along each of the nine transects established for trawl and gill net sampling. Data recorded included specific conductivity, water temperature, salinity, pH, and dissolved oxygen (DO). Water quality data are provided in Table 2.

Trawls were towed for 15 minutes along each of the nine transects. The scientific and common names of all specimens captured by all gear types are listed in Table 3. The numbers of fish and invertebrates collected in each 15-minute tow are presented in Table 4. Because of variations in tow speed, the distances the trawl traveled during a 15-minute tow varied (based on GPS readings). In order to compare abundances among stations in terms of catch per unit effort, the numbers collected per kilometer of bottom sampled were calculated and are presented in Table 5.

The numbers of fish and invertebrates collected by gill net on each of the nine transects is given in Table 6. At each transect the gill net began to be retrieved 30 minutes after it was set. However, the total soak time (time from when the net first entered the water until the time it was completely removed from the water) varied among transects because of differences in retrieval times associated with variations in the number of fish present in the net. In order to compare abundances among stations in terms of catch per unit effort, the numbers collected per hour of total soak time were calculated and are given in Table 7.

Beach seines were deployed at each of the nine stations previously described. The numbers of fish and invertebrates collected at each station are presented in Table 8.

A maximum of 25 representative specimens of each Representative Important Species (RIS) of fish collected at each transect/station by trawl, gill net, and beach seine were measured (total length) and a batch weight for those specimens was obtained. Average lengths and average weights of each RIS at each station/transect for each gear type are presented in Table 9.

Bongo nets were used to collect fish eggs and larvae as well as commercially or recreationally important invertebrate larvae at each of the six transects previously described. Nets were pulled for 15 minutes and the volume of water filtered determined by means of flow meters. Numbers of individuals per cubic meter of water filtered are given in Table 10.

To quantify the number of sea turtles present in each of the three sampling sites, one one-kilometer-long transect in each sampling site was traversed by boat twice. The numbers of sea turtles sighted during each pass along each transect are presented in Table 11.

Table 1. Environmental Data, Post-Uprate Sampling Event 1 (January/February, 2013), St. Lucie Plant EPU Biological Study. Values reflect the range of values recorded throughout each day of sampling.

Sampling	Date	Sea Conditions	Air Temp	Wind Speed/Direction	Sky Conditions
Trawls/ Ichthyoplankton	2/13/13	2-4 ft swell	22.0-25.9°C	10-17 mph/W to N	Clear to Mostly Cloudy
Trawls/ Ichthyoplankton	2/19/13	1-3 ft swell, light chop	20.3-22.3°C	4-10 mph/W to SSW	Partly to Mostly Cloudy
Gill Nets	2/14/13	1-3 ft swell, light chop	20.9-22.2°C	3-10 mph/S to E	Overcast
Gill Nets	2/20/13	2-3 ft swell, light chop	20.4-21.7°C	10-15 mph/N to NE	Clear
Beach Seines	2/5/13	Calm, light chop	18.4-28.0°C	0-6 mph/SW to SE	Clear
Sea Turtle Transects	1/3/13	Calm	21.5-24.6°C	0-5 mph/SE	Clear

Table 2. Water Quality Data, Post-Uprate Sampling Event 1 (January/February, 2013), St. Lucie Plant EPU Biological Study.

Transect	Station	Depth	Specific Conductivity (mS/cm)	Water Temp (°C)	Salinity (PSU)	pH	DO (mg/l)
Trawl SL1 A	North	Surface	55.4	23.8	36.7	8.1	6.3
		Mid-Depth	55.3	23.8	36.7	8.1	6.2
		Bottom	55.3	23.8	36.7	8.0	6.2
	Middle	Surface	55.3	23.9	36.7	8.1	6.3
		Mid-Depth	55.3	23.9	36.6	8.1	6.3
		Bottom	55.3	23.9	36.6	8.1	6.4
	South	Surface	55.3	23.8	36.6	8.0	6.8
		Mid-Depth	55.3	23.8	36.6	8.0	6.5
		Bottom	55.3	23.8	36.6	8.0	6.4
Trawl SL1 B	North	Surface	55.3	24.0	36.6	8.1	6.3
		Mid-Depth	55.3	24.0	36.6	8.1	6.3
		Bottom	55.2	24.0	36.5	8.1	6.3
	Middle	Surface	55.3	24.0	36.6	8.1	6.4
		Mid-Depth	55.3	24.0	36.6	8.1	6.4
		Bottom	55.2	24.0	36.5	8.1	6.3
	South	Surface	55.3	24.0	36.6	8.0	6.6
		Mid-Depth	55.3	24.0	36.6	8.0	6.5
		Bottom	55.2	24.0	36.6	8.1	6.4
Trawl SL1 C	North	Surface	55.3	24.0	36.6	8.1	6.4
		Mid-Depth	55.3	24.0	36.6	8.1	6.4
		Bottom	55.3	24.0	36.6	8.1	6.3
	Middle	Surface	55.4	24.0	36.6	8.1	6.4
		Mid-Depth	55.3	24.0	36.7	8.1	6.4
		Bottom	55.3	24.0	36.6	8.1	6.4
	South	Surface	55.3	24.1	36.6	7.7	6.8
		Mid-Depth	55.3	24.1	36.6	8.0	6.6
		Bottom	55.3	24.1	36.6	8.0	6.6
Trawl SL2 A	North	Surface	55.0	20.1	36.1	8.2	6.9
		Mid-Depth	55.0	20.1	36.1	8.2	6.9
		Bottom	55.0	20.2	36.1	8.2	6.8
	Middle	Surface	55.0	20.1	36.1	8.2	6.9
		Mid-Depth	54.9	20.1	36.1	8.2	6.8
		Bottom	54.9	20.1	36.1	8.2	6.8
	South	Surface	54.9	20.1	36.1	8.1	7.0
		Mid-Depth	54.9	20.1	36.1	8.2	6.9
		Bottom	54.9	20.0	36.1	8.2	6.8

Table 2 (Continued). Water Quality Data, Post-Uprate Sampling Event 1 (January/February, 2013), St. Lucie Plant EPU Biological Study.

Transect	Station	Depth	Specific Conductivity (mS/cm)	Water Temp (°C)	Salinity (PSU)	pH	DO (mg/l)
Trawl SL2 B	North	Surface	55.5	20.8	36.5	8.2	6.8
		Mid-Depth	55.4	20.8	36.5	8.2	6.7
		Bottom	55.4	20.8	36.5	8.2	6.6
	Middle	Surface	55.4	20.7	36.5	8.2	6.8
		Mid-Depth	55.4	20.8	36.5	8.2	6.8
		Bottom	55.4	20.8	36.5	8.2	6.6
	South	Surface	55.4	20.7	36.5	8.2	6.9
		Mid-Depth	55.4	20.7	36.5	8.2	6.8
		Bottom	55.4	20.7	36.5	8.2	6.7
Trawl SL2 C	North	Surface	55.5	21.0	36.6	8.3	6.8
		Mid-Depth	55.5	21.0	36.6	8.2	6.8
		Bottom	55.5	21.0	36.6	8.2	6.8
	Middle	Surface	55.5	21.0	36.6	8.2	7.0
		Mid-Depth	55.5	21.0	36.6	8.2	6.9
		Bottom	55.5	21.0	36.6	8.2	6.8
	South	Surface	55.4	21.0	36.6	7.9	6.9
		Mid-Depth	55.5	21.1	36.6	8.2	6.9
		Bottom	55.5	21.1	36.6	8.2	6.9
Trawl SL3 A	North	Surface	55.4	23.5	36.6	8.0	6.1
		Mid-Depth	55.4	23.5	36.6	8.0	6.0
		Bottom	55.4	23.5	36.6	8.0	6.0
	Middle	Surface	55.5	23.5	36.7	8.0	6.0
		Mid-Depth	55.4	23.5	36.6	8.0	6.0
		Bottom	55.5	23.4	36.6	8.0	5.9
	South	Surface	55.4	23.6	36.6	8.0	6.3
		Mid-Depth	55.4	23.5	36.6	8.0	6.0
		Bottom	55.4	23.6	36.6	8.0	6.1
Trawl SL3 B	North	Surface	55.2	22.1	36.4	8.2	6.5
		Mid-Depth	55.1	20.4	36.2	8.2	6.5
		Bottom	55.0	20.2	36.1	8.2	6.5
	Middle	Surface	55.2	22.1	36.5	8.2	6.6
		Mid-Depth	55.1	20.7	36.2	8.2	6.6
		Bottom	55.0	20.3	36.1	8.2	6.5
	South	Surface	55.2	22.3	36.4	8.2	6.6
		Mid-Depth	55.1	21.3	36.4	8.2	6.5
		Bottom	55.0	20.3	36.1	8.2	6.4

Table 2 (Continued). Water Quality Data, Post Uprate Sampling Event 1 (January/February, 2013), St. Lucie Plant EPU Biological Study.

Transect	Station	Depth	Specific Conductivity (mS/cm)	Water Temp (°C)	Salinity (PSU)	pH	DO (mg/l)
Trawl SL3 C	North	Surface	55.2	22.5	36.5	8.2	6.4
		Mid-Depth	55.2	22.0	36.5	8.2	6.4
		Bottom	55.1	20.7	36.2	8.2	6.5
	Middle	Surface	55.2	22.5	36.4	8.2	6.5
		Mid-Depth	55.2	21.9	36.4	8.2	6.4
		Bottom	55.1	20.6	36.2	8.2	6.4
	South	Surface	55.2	22.5	36.4	8.1	6.6
		Mid-Depth	55.2	22.0	36.4	8.2	6.5
		Bottom	55.1	20.6	36.2	8.2	6.5
Gill Net SL1 A	West	Surface	55.3	20.6	36.4	8.3	6.4
		Mid-Depth	55.2	20.6	36.4	8.3	6.4
		Bottom	55.4	20.2	36.4	8.3	6.5
	Middle	Surface	55.3	20.7	36.4	8.3	6.8
		Mid-Depth	55.2	20.4	36.4	8.3	6.5
		Bottom	55.2	20.3	36.3	8.3	6.5
	East	Surface	55.3	20.7	36.3	8.2	6.6
		Mid-Depth	55.2	20.3	36.3	8.3	6.6
		Bottom	55.3	20.1	36.4	8.3	6.7
Gill Net SL1 B	West	Surface	55.4	20.8	36.5	8.3	6.4
		Mid-Depth	55.4	20.8	36.5	8.3	6.4
		Bottom	55.4	20.8	36.4	8.2	6.3
	Middle	Surface	55.4	20.8	36.5	8.2	6.5
		Mid-Depth	55.4	20.8	36.5	8.2	6.5
		Bottom	55.4	20.8	36.5	8.2	6.4
	East	Surface	55.4	20.8	36.5	8.1	6.9
		Mid-Depth	55.4	20.8	36.5	8.2	6.7
		Bottom	55.5	20.9	36.5	8.2	6.5
Gill Net SL1 C	West	Surface	55.4	20.8	36.5	8.1	6.8
		Mid-Depth	55.4	20.8	36.5	8.1	6.7
		Bottom	55.5	20.9	36.5	8.1	6.6
	Middle	Surface	55.4	20.9	36.5	8.1	6.7
		Mid-Depth	55.4	20.9	36.5	8.1	6.6
		Bottom	55.5	21.0	36.6	8.1	6.6
	East	Surface	55.4	20.9	36.5	7.7	7.4
		Mid-Depth	55.4	20.9	36.5	8.0	6.9
		Bottom	55.5	20.9	36.5	8.1	6.7

Table 2 (Continued). Water Quality Data, Post Uprate Sampling Event 1 (January/February, 2013), St. Lucie Plant EPU Biological Study.

Transect	Station	Depth	Specific Conductivity (mS/cm)	Water Temp (°C)	Salinity (PSU)	pH	DO (mg/l)
Gill Net SL2 A	West	Surface	55.2	24.4	36.5	7.7	6.5
		Mid-Depth	55.3	24.3	36.6	7.9	6.4
		Bottom	55.4	24.0	36.6	7.9	6.4
	Middle	Surface	55.2	24.4	36.5	7.9	6.5
		Mid-Depth	55.3	24.3	36.6	7.9	6.4
		Bottom	55.3	23.8	36.6	7.9	6.4
	East	Surface	55.3	24.1	36.6	7.9	6.3
		Mid-Depth	55.3	24.1	36.6	7.9	6.4
		Bottom	55.3	23.4	36.6	7.9	6.4
Gill Net SL2 B	West	Surface	55.2	25.0	36.5	8.0	6.2
		Mid-Depth	55.3	24.0	36.6	8.0	6.2
		Bottom	55.5	23.1	36.7	8.0	5.7
	Middle	Surface	55.2	24.9	36.6	8.0	6.4
		Mid-Depth	55.4	24.1	36.7	8.0	6.3
		Bottom	55.5	23.1	36.8	8.0	5.8
	East	Surface	55.1	24.9	36.5	7.9	6.5
		Mid-Depth	55.3	24.1	36.6	8.0	6.3
		Bottom	55.5	23.1	36.7	7.9	5.9
Gill Net SL2 C	West	Surface	55.3	24.3	36.6	8.0	6.3
		Mid-Depth	55.5	23.8	36.7	8.0	6.3
		Bottom	55.4	23.3	36.7	8.0	6.0
	Middle	Surface	55.2	24.3	36.6	8.0	6.3
		Mid-Depth	55.4	23.8	36.7	8.0	6.3
		Bottom	55.5	23.3	36.7	8.0	5.9
	East	Surface	55.2	24.3	36.5	8.0	6.5
		Mid-Depth	55.4	23.8	36.7	8.0	6.4
		Bottom	55.5	23.4	36.7	8.0	6.0
Gill Net SL3 A	West	Surface	54.3	23.1	35.7	8.0	6.2
		Mid-Depth	54.5	23.0	36.0	8.0	6.2
		Bottom	55.4	23.3	36.6	8.0	5.8
	Middle	Surface	54.2	23.0	35.7	8.0	6.3
		Mid-Depth	54.7	23.1	36.0	8.0	6.1
		Bottom	55.4	23.3	36.6	8.0	5.9
	East	Surface	54.4	23.2	35.9	8.0	6.4
		Mid-Depth	55.3	23.2	36.6	8.0	6.1
		Bottom	55.5	23.2	36.6	8.0	5.9

Table 2 (Continued). Water Quality Data, Post Uprate Sampling Event 1 (January/February, 2013), St. Lucie Plant EPU Biological Study.

Transect	Station	Depth	Specific Conductivity (mS/cm)	Water Temp (°C)	Salinity (PSU)	pH	DO (mg/l)
Gill Net SL3 B	West	Surface	54.6	23.4	36.1	8.0	6.3
		Mid-Depth	55.4	23.3	36.6	8.0	6.4
		Bottom	55.6	21.5	36.7	8.0	6.0
	Middle	Surface	54.6	23.4	36.1	8.1	6.3
		Mid-Depth	55.4	23.3	36.6	8.0	6.2
		Bottom	55.6	21.6	36.7	8.0	5.7
	East	Surface	55.6	23.4	36.0	8.1	6.3
		Mid-Depth	55.4	23.3	36.6	8.1	6.2
		Bottom	55.6	21.6	36.7	8.0	5.2
Gill Net SL3 C	West	Surface	54.6	23.5	36.0	8.1	6.3
		Mid-Depth	55.4	23.5	36.6	8.1	6.2
		Bottom	55.6	22.6	36.7	8.0	5.4
	Middle	Surface	54.8	23.6	36.2	8.1	6.4
		Mid-Depth	55.4	23.4	36.6	8.1	6.2
		Bottom	55.8	20.7	36.7	8.0	5.1
	East	Surface	54.7	23.6	36.1	8.1	6.3
		Mid-Depth	55.4	23.4	36.6	8.1	6.2
		Bottom	55.7	20.8	36.7	8.0	5.1

Table 3. Scientific and Common Names of Taxa Captured by Trawl, Plankton Netting, Gill Netting, and Beach Seining or Observed in Sea Turtle Surveys, Post-Uprate Sampling Event 1 (January/February, 2013), St. Lucie Plant EPU Biological Study.

Scientific Name	Common Name
Crustaceans	
Albunea sp.*	mole crabs
*Arenaeus cribrarius**	speckled swimming crab
*Callinectes sapidus**	blue crab
Callinectes similis	lesser blue crab
Callinectes sp.	swimming crabs
Emerita sp.*	mole crab
*Emerita talpoida**	Atlantic sand crab
*Farfantepenaeus aztecus**	brown shrimp
Farfantepenaeus sp.*	penaeid shrimp
Hepatus epheliticus	calico crab
*Menippe mercenaria**	Florida stone crab
Penaeidae*	penaeid shrimp
Portunus anceps	delicate swimming crab
Portunus gibbesii	iridescent swimming crab
Portunus sp.	portunid crab
*Rimapenaeus constrictus**	roughneck shrimp
Rimapenaeus sp.*	roughneck shrimp
Sicyonia sp.*	rock shrimp
Echinoderms	
Clypeasteroida	sand dollars
Fish and Eggs	
Anchoa sp.**	common anchovy
Blenniidae	combtooth blennies
Bramidae	(blank)
Bregmacerotidae	codlets
*Brevoortia smithi***	yellowfin menhaden
*Brevoortia tyrannus***	Atlantic menhaden
Caranx latus	horse-eye jack
Carcharhinus acronotus	blacknose shark
Centropristis striata	black sea bass

Table 3. Scientific and Common Names of Taxa Captured by Trawl, Plankton Netting, Gill Netting, and Beach Seining or Observed in Sea Turtle Surveys, Post-Uprate Sampling Event 1 (January/February, 2013), St. Lucie Plant EPU Biological Study.

Scientific Name	Common Name
Chloroscombrus chrysurus	Atlantic bumper
Citharichthys macrops	spotted whiff
Clupeidae**	herrings and sardines
Coryphaena hippurus	dolphin, mahi mahi, dorado
Ctenogobius boleosoma	darter goby
Ctenogobius sp.	(blank)
Cynoscion regalis	gray trout
Diodontidae	burrfishes
Diplospinus multistriatus	(blank)
Eleotridae	sleepers
Engraulidae**	anchovies
Gobiidae	gobies
Gobiosoma bosc	naked goby
Gobiosoma parri	naked gobie
Gobiosoma robustum	code goby
Haemulidae	grunts
Labridae	wrasses
Labrisomidae	labrisomid blennies
Lutjanus synagris	lane snapper
Melamphaidae	(blank)
*Menticirrhus americanus***	southern kingfish
*Menticirrhus littoralis***	Gulf kingfish
Microdesmidae	wormfishes
Microgobius gulosus	clown goby
Microgobius thalassinus	green goby
*Micropogonias undulatus***	Atlantic croaker
Mullidae	(blank)
Myctophidae	lanternfishes
Ophidion holbrookii	bank cusk eel
Ophidion sp.	cusk-eel
*Orthopristis chrysoptera***	pigfish

Table 3. Scientific and Common Names of Taxa Captured by Trawl, Plankton Netting, Gill Netting, and Beach Seining or Observed in Sea Turtle Surveys, Post-Uprate Sampling Event 1 (January/February, 2013), St. Lucie Plant EPU Biological Study.

Scientific Name	Common Name
Paralichthys albigutta	Gulf flounder
Peprilus paru	harvestfish
Percophidae	Duckbills
*Pomatomus saltatrix***	bluefish
Rachycentron canadum	cobia
Rhinobatos lentiginosus	Atlantic guitarfish
Rhizoprionodon terraenovae	Atlantic sharpnose shark
Sciaenidae	drums and croakers
*Scomberomorus maculatus***	Atlantic spanish mackerel
Sparidae	porgies
Sphyrna tiburo	bonnethead shark
Synodontidae	lizard fish
Synodus foetens	inshore lizardfish
Tetraodontidae	puffers
Tetraodontiformes	puffers
Trachinotus falcatus	permit
Trichiurus lepturus	cutlassfish
*Umbrina coroides***	sand drum
Unidentified eggs	unidentified eggs
Unidentified fragment	unidentified fragment
Sea Turtles	
*Chelonia mydas***	green sea turtle

*Commercially and recreationally important (CRI) decapod crustaceans

**Representative Important Species (RIS)

Table 4. Number of Individuals of Each Taxon of Fish and Invertebrates Captured by Trawl during One 15-minute Tow at Each Station, Post-Uprate Sampling Event 1 (January/February, 2013), St. Lucie Plant EPU Biological Study.

Taxon	SL1			SL2			SL3			Total
	A	B	C	A	B	C	A	B	C	
Crustaceans										
Portunus gibbesii	2			8					1	**11**
Rimapenaeus sp.*				2		4	2			**8**
*Arenaeus cribrarius**				4						**4**
Hepatus epheliticus				2						**2**
Portunus anceps				1						**1**
Portunus sp.				1						**1**
Echinoderms										
Clypeasteroida	1	1								**2**
Fish										
Chloroscombrus chrysurus	1			1						**2**
Ophidion holbrookii				1		1				**2**
Citharichthys macrops				1						**1**
Lutjanus synagris	1									**1**
*Umbrina coroides***	1									**1**
Total	**6**	**1**	**0**	**21**	**0**	**5**	**2**	**0**	**1**	**36**

*Commercially and Recreationally Important Crustaceans

**Representative Important Species (RIS)

Table 5. Number of Individuals of Each Taxon of Fish and Invertebrates Captured per Kilometer by Trawl at Each Station, Post-Uprate Sampling Event 1 (January/February, 2013), St. Lucie Plant EPU Biological Study. (Note: Totals in the right column represent the number of individuals captured per kilometer for all nine transects.)

Taxon	SL1			SL2			SL3			Total
	A	B	C	A	B	C	A	B	C	
Crustaceans										
Portunus gibbesii	2.25	0.00	0.00	13.21	0.00	0.00	0.00	0.00	1.64	**1.71**
Rimapenaeus sp.*	0.00	0.00	0.00	3.30	0.00	5.76	2.64	0.00	0.00	**1.24**
*Arenaeus cribrarius**	0.00	0.00	0.00	6.61	0.00	0.00	0.00	0.00	0.00	**0.62**
Hepatus epheliticus	0.00	0.00	0.00	3.30	0.00	0.00	0.00	0.00	0.00	**0.31**
Portunus anceps	0.00	0.00	0.00	1.65	0.00	0.00	0.00	0.00	0.00	**0.16**
Portunus sp.	0.00	0.00	0.00	1.65	0.00	0.00	0.00	0.00	0.00	**0.16**
Echinoderms										
Clypeasteroida	1.13	1.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.31**
Fish										
Chloroscombrus chrysurus	1.13	0.00	0.00	1.65	0.00	0.00	0.00	0.00	0.00	**0.31**
Ophidion holbrookii	0.00	0.00	0.00	1.65	0.00	1.44	0.00	0.00	0.00	**0.31**
Citharichthys macrops	0.00	0.00	0.00	1.65	0.00	0.00	0.00	0.00	0.00	**0.16**
Lutjanus synagris	1.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.16**
*Umbrina coroides***	1.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.16**
Total	**6.76**	**1.11**	**0.00**	**34.69**	**0.00**	**7.20**	**2.64**	**0.00**	**1.64**	**5.58**

*Commercially and Recreationally Important Crustaceans

**Representative Important Species (RIS)

Table 6. Number of Individuals of Each Taxon of Fish Captured by Gill Net at Each Station, Post-Uprate Sampling Event 1 (January/February, 2013), St. Lucie Plant EPU Biological Study.

Taxon	SL1			SL2			SL3			Total
	A	B	C	A	B	C	A	B	C	
Rhizoprionodon terraenovae				4	3	3	72	3	1	**86**
Chloroscombrus chrysurus		2	12	2						**16**
*Brevoortia smithi**	2	2	1							**5**
Sphyrna tiburo	1	1	3							**5**
*Brevoortia tyrannus**		3								**3**
*Scomberomorus maculatus**	2			1						**3**
*Menticirrhus americanus**		2								**2**
*Micropogonias undulatus**		1	1							**2**
*Orthopristis chrysoptera**	1			1						**2**
*Pomatomus saltatrix**	2									**2**
Caranx latus				1						**1**
Carcharhinus acronotus		1								**1**
Centropristis striata	1									**1**
Cynoscion regalis		1								**1**
Lutjanus synagris							1			**1**
Paralichthys albigutta			1							**1**
Peprilus paru			1							**1**
Rachycentron canadum					1					**1**
Rhinobatos lentiginosus							1			**1**
Synodus foetens			1							**1**
Trichiurus lepturus									1	**1**
Total	**9**	**13**	**20**	**9**	**4**	**3**	**74**	**3**	**2**	**137**

*Representative Important Species (RIS)

Table 7. Catch Per Unit Effort (Number of Individuals Per Hour of Soak Time) for Each Taxon of Fish Captured by Gill Net at Each Station, Post-Uprate Sampling Event 1 (January/February, 2013), St. Lucie Plant EPU Biological Study. (Note: Totals in the right column represent the number of individuals captured per hour for all nine transects.)

Taxon	SL1			SL2			SL3			Total
	A	B	C	A	B	C	A	B	C	
Rhizoprionodon terraenovae	0.00	0.00	0.00	7.06	4.50	5.14	77.14	5.14	0.02	**14.45**
Chloroscombrus chrysurus	0.00	2.86	18.95	3.53	0.00	0.00	0.00	0.00	0.00	**2.69**
*Brevoortia smithi**	3.33	2.86	1.58	0.00	0.00	0.00	0.00	0.00	0.00	**0.84**
Sphyrna tiburo	1.67	1.43	4.74	0.00	0.00	0.00	0.00	0.00	0.00	**0.84**
*Brevoortia tyrannus**	0.00	4.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.50**
*Scomberomorus maculatus**	3.33	0.00	0.00	1.76	0.00	0.00	0.00	0.00	0.00	**0.50**
*Menticirrhus americanus**	0.00	2.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.34**
*Micropogonias undulatus**	0.00	1.43	1.58	0.00	0.00	0.00	0.00	0.00	0.00	**0.34**
*Orthopristis chrysoptera**	1.67	0.00	0.00	1.76	0.00	0.00	0.00	0.00	0.00	**0.34**
*Pomatomus saltatrix**	3.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.34**
Caranx latus	0.00	0.00	0.00	1.76	0.00	0.00	0.00	0.00	0.00	**0.17**
Carcharhinus acronotus	0.00	1.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.17**
Centropristis striata	1.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.17**
Cynoscion regalis	0.00	1.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.17**
Lutjanus synagris	0.00	0.00	0.00	0.00	0.00	0.00	1.07	0.00	0.00	**0.17**
Paralichthys albigutta	0.00	0.00	1.58	0.00	0.00	0.00	0.00	0.00	0.00	**0.17**
Peprilus paru	0.00	0.00	1.58	0.00	0.00	0.00	0.00	0.00	0.00	**0.17**
Rachycentron canadum	0.00	0.00	0.00	0.00	1.50	0.00	0.00	0.00	0.00	**0.17**
Rhinobatos lentiginosus	0.00	0.00	0.00	0.00	0.00	0.00	1.07	0.00	0.00	**0.17**
Synodus foetens	0.00	0.00	1.58	0.00	0.00	0.00	0.00	0.00	0.00	**0.17**
Trichiurus lepturus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	**0.17**
Total	**15.00**	**18.57**	**31.58**	**15.88**	**6.00**	**5.14**	**79.29**	**5.14**	**0.05**	**23.03**

*Representative Important Species (RIS)

Table 8. Number of Individuals of Each Taxon of Fish and Invertebrates Captured by Beach Seine at Each Station, Post-Uprate Sampling Event 1 (January/February, 2013), St. Lucie Plant EPU Biological Study.

Taxa	SL1			SL2			SL3			Total
	A	B	C	A	B	C	A	B	C	
Crustaceans										
Emerita sp.*			1							**1**
Fish										
*Umbrina coroides***	1		2	1				1	2	**7**
Trachinotus falcatus			1					5		**6**
*Menticirrhus littoralis***	1		2					1	1	**5**
*Scomberomorus maculatus***							1			**1**
Total	**2**	**0**	**6**	**1**	**0**	**0**	**1**	**7**	**3**	**20**

*Commercially and Recreationally Important Crustaceans

**Representative Important Species (RIS)

Table 9. Number of Individuals of Each Taxon of Fish Eggs and Larvae and Commercially or Recreationally Important Decapod Crustacean Larvae Captured Per Cubic Meter of Water Filtered During One 15-minute Bongo-Net Tow at Each Transect, Post Uprate Sampling Event 1 (January/February 2013), St. Lucie Plant EPU Biological Study. (Note: Totals in the right column represent numbers captured per cubic meter of water filtered at all six transects.)

Taxa	LifeStage	SL1		SL2		SL3		Total
		A	C	A	C	A	C	
Crustaceans								
Callinectes sapidus	Megalops	5.089		0.122	0.038	1.000		1.114
Callinectes sp.	Zoea		0.333		0.308		1.558	0.358
Menippe mercenaria	Zoea			0.041			1.635	0.275
Emerita talpoida	Zoea	0.018					0.308	0.054
Callinectes similis	Megalops	0.286						0.051
Penaeidae	Protozoea				0.038		0.135	0.028
Penaeidae	Mysis	0.089						0.016
Albunea sp.	Zoea	0.018	0.042					0.009
Rimapenaeus constrictus	Post Larvae	0.036				0.017		0.009
Farfantepenaeus aztecus	Post Larvae					0.017		0.003
Farfantepenaeus sp.	Mysis				0.019			0.003
Farfantepenaeus sp.	Post Larvae				0.019			0.003
Sicyonia sp.	Juvenile						0.019	0.003
Sicyonia sp.	Mysis				0.019			0.003
Eggs								
Unidentified eggs	Egg	1.089	2.313	2.367	0.635	2.068	3.327	1.949
Clupeidae	Egg	0.964	0.125	0.898	0.096	0.034		0.351
Sciaenidae	Egg		0.125					0.019
Synodontidae	Egg				0.096			0.016

Table 9. Number of Individuals of Each Taxon of Fish Eggs and Larvae and Commercially or Recreationally Important Decapod Crustacean Larvae Captured Per Cubic Meter of Water Filtered During One 15-minute Bongo-Net Tow at Each Transect, Post Uprate Sampling Event 1 (January/February 2013), St. Lucie Plant EPU Biological Study. (Note: Totals in the right column represent numbers captured per cubic meter of water filtered at all six transects.)

Taxa	LifeStage	SL1		SL2		SL3		Total
		A	C	A	C	A	C	
Tetraodontiformes	Egg					0.017		0.003
Fish								
Clupeidae	Post Yolk-Sac Larvae			0.122	4.077		0.135	0.712
Haemulidae	Post Yolk-Sac Larvae				0.712			0.117
Unidentified fragment	Post Yolk-Sac Larvae	0.018		0.122	0.173	0.186	0.058	0.095
Blenniidae	Post Yolk-Sac Larvae				0.192	0.034	0.288	0.085
Gobiidae	Post Yolk-Sac Larvae	0.054			0.173	0.051	0.038	0.054
Sciaenidae	Post Yolk-Sac Larvae	0.036	0.042	0.082	0.019	0.017	0.096	0.047
Ctenogobius boleosoma	Post Yolk-Sac Larvae					0.169		0.032
Engraulidae	Post Yolk-Sac Larvae					0.169		0.032
Gobiosoma robustum	Post Yolk-Sac Larvae			0.041	0.077		0.038	0.025
Bregmacerotidae	Post Yolk-Sac Larvae					0.102		0.019
Microgobius gulosus	Post Yolk-Sac Larvae			0.041	0.058			0.016
Diplospinus multistriatus	Post Yolk-Sac Larvae					0.068		0.013
Sparidae	Post Yolk-Sac Larvae		0.083					0.013
Tetraodontidae	Post Yolk-Sac Larvae		0.042			0.017		0.009
Anchoa sp.	Post Yolk-Sac Larvae	0.036						0.006
Cynoscion regalis	Post Yolk-Sac Larvae			0.041				0.006
Diodontidae	Post Yolk-Sac Larvae				0.019	0.017		0.006
Gobiosoma bosc	Post Yolk-Sac Larvae				0.038			0.006

Table 9. Number of Individuals of Each Taxon of Fish Eggs and Larvae and Commercially or Recreationally Important Decapod Crustacean Larvae Captured Per Cubic Meter of Water Filtered During One 15-minute Bongo-Net Tow at Each Transect, Post Uprate Sampling Event 1 (January/February 2013), St. Lucie Plant EPU Biological Study. (Note: Totals in the right column represent numbers captured per cubic meter of water filtered at all six transects.)

Taxa	LifeStage	SL1		SL2		SL3		Total
		A	C	A	C	A	C	
Mullidae	Post Yolk-Sac Larvae						0.038	0.006
Ophidion sp.	Post Yolk-Sac Larvae				0.038			0.006
Percophidae	Post Yolk-Sac Larvae		0.042					0.006
Bramidae	Post Yolk-Sac Larvae		0.021					0.003
Coryphaena hippurus	Post Yolk-Sac Larvae				0.019			0.003
Ctenogobius sp.	Post Yolk-Sac Larvae	0.018						0.003
Eleotridae	Post Yolk-Sac Larvae					0.017		0.003
Gobiosoma parri	Post Yolk-Sac Larvae	0.018						0.003
Labridae	Post Yolk-Sac Larvae					0.017		0.003
Labrisomidae	Post Yolk-Sac Larvae		0.021					0.003
Melamphaidae	Post Yolk-Sac Larvae		0.021					0.003
Microdesmidae	Post Yolk-Sac Larvae				0.019			0.003
Microgobius thalassinus	Post Yolk-Sac Larvae	0.018						0.003
Myctophidae	Post Yolk-Sac Larvae					0.017		0.003
Total		**7.786**	**3.208**	**3.878**	**6.885**	**4.034**	**7.673**	**5.617**

Table 10. Average total length (TL) and average weight (Wt) of each Representative Important Species Captured by Gill Net, Trawl, and Beach Seine, Post-Uprate Sampling Event 1 (January/February, 2013), St. Lucie Plant EPU Biological Study. For each species the number weighed/measured (n) and the total number collected (N) are given.

Taxa	Gill Net				Trawl				Beach seine			
	TL (mm)	W (g)	n	N	TL (mm)	W (g)	n	N	TL (mm)	W (g)	n	N
Fish												
Umbrina coroides					42.0	0.8	1	1	77.9	9.3	7	7
Brevoortia smithi	340.6	362.0	5	5								
Menticirrhus littoralis									127.4	24.9	5	5
Scomberomorus maculatus	468.3	336.7	3	3					374.0	244.0	1	1
Brevoortia tyrannus	218.3	97.3	3	3								
Menticirrhus americanus	352.0	445.0	2	2								
Micropogonias undulatus	248.0	160.0	2	2								
Orthopristis chrysoptera	246.5	170.0	2	2								
Pomatomus saltatrix	393.5	480.0	2	2								
Cynoscion regalis	324.0	230.0	1	1								

Table 11. Number of Individuals of Each Species of Sea Turtle Sighted During Each of Two Passes Along Three One-Kilometer-Long Transects, Post-Uprate Sampling Event 1 (January/February, 2013), St. Lucie Plant EPU Biological Study.

SPECIES	SL 1		SL 2		SL 3	
	Pass 1	Pass 2	Pass 1	Pass 2	Pass 1	Pass 2
Chelonia mydas	4	1	4	6	1	0