Florida Power & Light Company
Biological Plan of Study Implementation for St. Lucie Plant EPU
Post-Uprate Event 6 Data Report

Report to
Florida Power & Light Company

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Submitted by
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INTRODUCTION

During December 2013 and January 2014, Ecological Associates, Inc. (EAI) conducted the sixth post-uprate field sampling event in accordance with the St. Lucie Plant EPU Biological Plan of Study. Sampling was conducted on six days between December 3, 2013 and January 21, 2014. 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 sixth 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 6 (December 2013 - January 2014), St. Luice Plant EPU Biological Study. Values reflect the range of values recorded throughout each day of sampling.

Sampling	Date	Sea Conditions	Air Temp	Wind Speed and Direction	Sky Conditions
Trawls/ Ichthyoplankton	12/3/2013	2-3 ft swells	20.6-23.9°C	2-7 mph,S to W	Clear to Partly Cloudy
Trawls/ Ichthyoplankton	12/4/2013	2-3 ft swells	20.0-21.2°C	2-10 mph, WNW to S	Partly Cloudy
Gill Nets	12/4/2013	3-4 ft swells	23.3-29.4°C	3-7 mph, S to SE	Clear to Partly Cloudy
Gill Nets	12/5/2013	3-4 ft swells	23.3-29.1°C	5-15 mph, E to SE	Partly Cloudy
Beach Seines	1/21/2014	0-2 ft swells	16.7-24.4°C	3-7 mph, W	Clear to Overcast
Sea Turtle Transects	1/13/2014	2-3 ft swells	20.9-23.3°C	7-10+ mph, SE	Clear

Table 2. Water Quality Data, Post Uprate Sampling Event 6 (December 2013 - January 2014), 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	54.5	22.1	35.9	8.0	6.6
		Mid-Depth	54.5	22.1	35.9	8.0	6.6
		Bottom	54.5	22.1	35.8	8.0	6.6
	Middle	Surface	54.5	22.1	35.9	8.0	6.6
		Mid-Depth	54.5	22.1	35.9	8.0	6.6
		Bottom	54.5	22.2	35.9	8.0	6.6
	South	Surface	54.5	22.1	35.9	8.0	6.6
		Mid-Depth	54.5	22.1	35.9	8.0	6.6
		Bottom	54.5	22.2	35.9	8.0	6.6
Trawl SL1 B	North	Surface	54.5	22.6	35.9	8.0	6.3
		Mid-Depth	54.5	22.6	35.9	8.0	6.3
		Bottom	54.5	22.6	35.9	8.0	6.3
	Middle	Surface	54.5	22.6	35.9	8.0	6.3
		Mid-Depth	54.5	22.6	35.9	8.0	6.3
		Bottom	54.5	22.6	35.9	8.0	6.3
	South	Surface	54.5	22.7	35.9	8.0	6.3
		Mid-Depth	54.5	22.6	35.9	8.0	6.3
		Bottom	54.5	22.6	35.9	8.0	6.3
Trawl SL1 C	North	Surface	54.7	23.0	36.1	8.0	6.3
		Mid-Depth	54.7	23.0	36.1	8.0	6.3
		Bottom	54.7	23.0	36.1	8.0	6.3
	Middle	Surface	54.7	23.0	36.1	8.0	6.3
		Mid-Depth	54.7	23.0	36.1	8.0	6.3
		Bottom	54.7	23.0	36.1	8.0	6.3
	South	Surface	54.7	23.1	36.2	8.0	6.3
		Mid-Depth	54.7	23.1	36.2	8.0	6.3
		Bottom	54.7	23.1	36.1	8.0	6.3
Trawl SL2 A	North	Surface	54.6	22.5	35.9	7.9	6.8
		Mid-Depth	54.6	22.6	36.0	7.9	6.8
		Bottom	54.6	22.5	36.0	7.9	6.8
	Middle	Surface	54.6	22.3	35.9	7.9	6.8
		Mid-Depth	54.6	22.3	35.9	7.9	6.8
		Bottom	54.6	22.3	35.9	7.9	6.8
	South	Surface	54.6	22.5	35.9	7.9	6.8
		Mid-Depth	54.6	22.4	35.9	7.9	6.8
		Bottom	54.6	22.4	35.9	7.9	6.8

Transect	Station	Depth	Specific Conductivity (mS/cm)	Water Temp (°C)	Salinity (PSU)	pH	DO (mg/l)
Trawl SL2 B	North	Surface	54.6	22.6	36.0	8.0	6.4
		Mid-Depth	54.6	22.6	36.0	8.0	6.4
		Bottom	54.6	22.6	36.0	8.0	6.4
	Middle	Surface	54.6	22.5	36.0	7.9	6.5
		Mid-Depth	54.6	22.5	36.0	8.0	6.4
		Bottom	54.6	22.6	36.0	8.0	6.4
	South	Surface	54.6	22.5	36.1	7.9	6.5
		Mid-Depth	54.6	22.5	36.0	7.9	6.4
		Bottom	54.6	22.6	36.0	7.9	6.4
Trawl SL2 C	North	Surface	54.7	23.2	36.0	8.0	6.5
		Mid-Depth	54.7	23.2	36.2	8.0	6.5
		Bottom	54.7	23.2	36.2	8.0	6.5
	Middle	Surface	54.7	23.2	36.2	8.0	6.5
		Mid-Depth	54.7	23.2	36.2	8.0	6.5
		Bottom	54.7	23.2	36.2	8.0	6.5
	South	Surface	54.7	23.2	36.2	8.0	6.5
		Mid-Depth	54.7	23.2	36.2	8.0	6.4
		Bottom	54.7	23.2	36.2	8.0	6.5
Trawl SL3 A	North	Surface	54.4	22.4	35.8	8.0	6.5
		Mid-Depth	54.4	22.4	35.8	8.0	6.5
		Bottom	54.3	22.4	35.8	8.0	6.5
	Middle	Surface	54.4	22.4	35.8	8.0	6.6
		Mid-Depth	54.4	22.4	35.8	8.0	6.6
		Bottom	54.4	22.4	35.8	8.0	6.5
	South	Surface	54.4	22.4	35.8	8.0	6.6
		Mid-Depth	54.4	22.4	35.8	8.0	6.6
		Bottom	54.4	22.3	35.8	8.0	6.6
Trawl SL3 B	North	Surface	54.5	23.3	36.0	8.0	6.4
		Mid-Depth	54.5	23.3	36.0	8.0	6.3
		Bottom	54.5	23.4	36.0	8.0	6.4
	Middle	Surface	54.5	23.3	36.0	8.0	6.4
		Mid-Depth	54.5	23.4	36.0	8.0	6.4
		Bottom	54.5	23.4	36.0	8.0	6.3
	South	Surface	54.5	23.3	36.0	8.0	6.4
		Mid-Depth	54.5	23.4	36.0	8.0	6.4
		Bottom	54.5	23.5	36.0	8.0	6.3

Transect	Station	Depth	Specific Conductivity (mS/cm)	Water Temp (°C)	Salinity (PSU)	pH	DO (mg/l)
Trawl SL3 C	North	Surface	54.5	23.4	36.0	8.0	6.5
		Mid-Depth	54.6	23.5	36.0	8.0	6.4
		Bottom	54.7	23.5	36.1	8.0	6.3
	Middle	Surface	54.5	23.4	36.0	8.0	6.6
		Mid-Depth	54.6	23.5	36.0	8.0	6.4
		Bottom	54.7	23.6	36.1	8.0	6.4
	South	Surface	54.5	23.4	36.0	8.0	6.6
		Mid-Depth	54.6	23.6	36.0	8.0	6.5
		Bottom	54.6	23.6	36.0	8.0	6.4
Gill Net SL1 A	East	Surface	54.3	25.0	35.9	8.1	6.6
		Mid-Depth	54.3	24.9	35.9	8.2	6.7
		Bottom	54.3	24.7	35.8	8.2	6.7
	Middle	Surface	54.2	24.9	35.9	8.3	6.7
		Mid-Depth	54.3	24.8	35.9	8.3	6.7
		Bottom	54.3	24.7	35.8	8.3	6.6
	West	Surface	54.3	24.9	35.8	8.3	6.6
		Mid-Depth	54.2	24.7	35.9	8.3	6.7
		Bottom	54.2	24.7	35.8	8.3	6.7
Gill Net SL1 B	East	Surface	54.4	25.2	36.0	8.2	6.5
		Mid-Depth	54.4	25.2	36.0	8.2	6.4
		Bottom	54.4	25.1	36.0	8.2	6.3
	Middle	Surface	54.4	25.2	36.0	8.3	6.4
		Mid-Depth	54.4	25.1	35.9	8.3	6.4
		Bottom	54.4	25.1	36.0	8.3	6.4
	West	Surface	54.4	25.2	36.0	8.3	6.4
		Mid-Depth	54.4	25.1	36.0	8.3	6.4
		Bottom	54.4	25.0	35.9	8.3	6.3
Gill Net SL1 C	East	Surface	54.8	26.0	36.3	8.2	6.4
		Mid-Depth	54.8	25.9	36.3	8.2	6.3
		Bottom	54.7	25.9	36.3	8.2	6.3
	Middle	Surface	54.8	25.9	36.3	8.2	6.3
		Mid-Depth	54.8	25.9	36.3	8.2	6.3
		Bottom	54.7	25.9	36.3	8.2	6.2
	West	Surface	54.8	25.9	36.3	8.2	6.3
		Mid-Depth	54.8	25.9	36.3	8.3	6.3
		Bottom	54.7	25.8	36.3	8.2	6.3

Transect	Station	Depth	Specific Conductivity (mS/cm)	Water Temp (°C)	Salinity (PSU)	pH	DO (mg/l)
Gill Net SL2 A	East	Surface	54.2	23.5	35.8	8.0	6.2
		Mid-Depth	54.3	22.5	35.7	8.0	6.3
		Bottom	54.3	22.4	35.8	8.0	6.1
	Middle	Surface	54.4	23.6	35.7	8.0	6.3
		Mid-Depth	54.3	22.3	35.8	8.0	6.4
		Bottom	54.3	22.1	35.8	8.0	6.6
	West	Surface	54.2	23.4	35.8	8.0	6.3
		Mid-Depth	54.3	22.3	35.8	8.0	6.5
		Bottom	54.4	22.0	35.8	8.0	6.6
Gill Net SL2 B	East	Surface	54.5	23.8	36.0	8.2	6.3
		Mid-Depth	54.6	23.4	36.0	8.2	6.4
		Bottom	54.6	23.4	36.0	8.2	6.3
	Middle	Surface	54.6	23.5	36.0	8.2	6.3
		Mid-Depth	54.6	23.4	36.0	8.2	6.4
		Bottom	54.6	23.4	36.0	8.2	6.3
	West	Surface	54.6	23.5	36.0	8.2	6.4
		Mid-Depth	54.6	23.4	36.0	8.2	6.3
		Bottom	54.6	23.4	36.0	8.1	6.3
Gill Net SL2 C	East	Surface	54.4	24.2	36.0	8.2	6.9
		Mid-Depth	54.5	23.7	36.0	8.2	6.6
		Bottom	54.5	23.6	36.0	8.2	6.6
	Middle	Surface	54.5	23.9	36.0	8.3	6.5
		Mid-Depth	54.5	23.6	36.0	8.3	6.5
		Bottom	54.5	23.6	36.0	8.3	6.5
	West	Surface	54.5	23.9	35.9	8.3	6.6
		Mid-Depth	54.6	23.6	36.0	8.3	6.6
		Bottom	54.5	23.6	36.0	8.3	6.6
Gill Net SL3 A	East	Surface	54.3	24.9	35.9	8.0	6.5
		Mid-Depth	54.3	24.8	35.9	8.0	6.5
		Bottom	54.3	24.5	35.8	8.0	6.5
	Middle	Surface	54.3	24.6	35.9	8.1	6.7
		Mid-Depth	54.3	24.6	35.8	8.1	6.6
		Bottom	54.2	24.2	35.8	8.1	6.5
	West	Surface	54.3	24.4	35.9	8.1	6.5
		Mid-Depth	54.2	24.4	35.8	8.1	6.5
		Bottom	54.2	24.3	35.8	8.1	6.5

Transect	Station	Depth	Specific Conductivity (mS/cm)	Water Temp (°C)	Salinity (PSU)	pH	DO (mg/l)
Gill Net SL3 B	East	Surface	54.6	25.6	36.2	8.1	6.4
		Mid-Depth	54.5	25.6	36.1	8.1	6.4
		Bottom	54.5	25.5	36.1	8.1	6.4
	Middle	Surface	54.5	25.4	36.1	8.1	6.5
		Mid-Depth	54.5	25.4	36.1	8.1	6.4
		Bottom	54.5	25.4	36.0	8.1	6.4
	West	Surface	54.5	25.4	36.1	8.2	6.4
		Mid-Depth	54.5	25.4	36.1	8.2	6.4
		Bottom	54.5	25.4	36.1	8.2	6.4
Gill Net SL3 C	East	Surface	54.8	26.0	36.3	8.1	6.5
		Mid-Depth	54.8	26.0	36.3	8.2	6.4
		Bottom	54.8	26.0	36.3	8.2	6.4
	Middle	Surface	54.8	26.0	36.3	8.2	6.5
		Mid-Depth	54.8	26.1	36.3	8.2	6.5
		Bottom	54.8	26.0	36.3	8.2	6.4
	West	Surface	54.8	26.0	36.3	8.2	6.5
		Mid-Depth	54.8	26.0	36.3	8.2	6.4
		Bottom	54.8	26.0	36.3	8.2	6.4

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 6 (December 2013 - January 2014), St. Lucie Plant EPU Biological Study.

Scientific Name	Common Name
Crustaceans	
Acetes americanus	aviu shrimp
Albunea sp.	mole crabs
*Arenaeus cribrarius**	speckled swimming crab
Calappa flammea	flame box crab
Callinectes spp.*	swimming crabs
Chlamydopleon dissimile	opossum shrimp
*Emerita talpoida**	Atlantic sand crab
*Farfantepenaeus aztecus**	brown shrimp
Farfantepenaeus sp.*	penaeid shrimp
Hepatus epheliticus	calico box crab
Hippoidea	mole crab
Libinia dubia	longnose spider crab
*Menippe mercenaria**	Florida stone crab
Paguroidea	hermit crab
Penaeidae*	penaeid shrimp
Periclimenes sp.	anemone shrimp
Persephona mediterranea	mottled purse crab
Pilumnus sp.	hairy crab
Portunidae*	swimming crabs
Portunus gibbesii	iridescent swimming crab
Portunus sp.	portunid crab
*Rimapenaeus constrictus**	roughneck shrimp
Sicyonia sp.*	rock shrimp
Squillidae	mantis shrimp
Xanthidae	mud crabs
Xiphopenaeus kroyeri	seabob
Echinoderms	
Mellitidae	sand dollars

Scientific Name	Common Name
Fish and Eggs	
Aluterus monoceros	unicorn filefish
*Anchoa hepsetus***	striped anchovy
*Anchoa lyolepis***	dusky anchovy
*Anchoa mitchilli***	bay anchovy
Anchoa sp.**	common anchovy
Anisotremus virginicus	porkfish
Archosargus probatocephalus	sheepshead
Ariopsis felis	hardhead catfish
Bagre marinus	gafftopsail catfish
Bairdiella chrysoura	silver perch
*Brevoortia smithi***	yellowfin menhaden
Calamus arctifrons	grass porgy
Caranx crysos	blue runner
Caranx hippos	crevalle jack
Caranx latus	horse-eye jack
Carcharhinus acronotus	blacknose shark
Carcharhinus brevipinna	spinner shark
Carcharhinus limbatus	blacktip shark
Centropristis striata	black sea bass
Chaetodipterus faber	Atlantic spadefish
Chloroscombrus chrysurus	Atlantic bumper
Citharichthys macrops	spotted whiff
Clupeidae**	herrings and sardines
Corvula sanctaeluciae	striped croaker
Elops saurus	ladyfish
Eucinostomus argenteus	spotfin mojarra
Eucinostomus gula	silver jenny
Eucinostomus sp.	mojarra
Lagodon rhomboides	pinfish
*Leiostomus xanthurus***	spot
Lutjanidae	snappers
Lutjanus synagris	lane snapper

Scientific Name	Common Name
Menticirrhus americanus	southern kingfish
*Menticirrhus littoralis***	Gulf kingfish
*Micropogonias undulatus***	Atlantic croaker
Mugil curema	silver mullet
Paralichthyidae	sand flounders
Polydactylus virginicus	barbu
*Pomatomus saltatrix***	bluefish
Rachycentron canadum	cobia
Rhizoprionodon terraenovae	Atlantic sharpnose shark
Sciaenidae	drums and croakers
*Scomberomorus maculatus***	Atlantic spanish mackerel
Selene setapinnis	Atlantic moonfish
Selene vomer	lookdown
Sparidae	porgies
Sphyrna tiburo	bonnethead shark
Synodus foetens	inshore lizardfish
*Trachinotus carolinus***	Florida pompano
Trachinotus falcatus	permit
Trichiurus lepturus	cutlassfish
*Umbrina coroides***	sand drum
Labridae	wrasses
Molluscs	
Cephalopoda	squid
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 Fish and Invertebrate Taxon Captured by Trawl during One 15-minute Tow at Each Station, Post-Uprate Sampling Event 6 (December 2013 - January 2014), St. Lucie Plant EPU Biological Study.

Taxon	SL1			SL2			SL3			Total
	A	B	C	A	B	C	A	B	C	
Crustaceans										
*Rimapenaeus constrictus**	14						3			**17**
Portunus gibbesii	4			2			2		1	**9**
*Arenaeus cribrarius**	7			1						**8**
Callinectes sp.*	4									**4**
Libinia dubia	4									**4**
Acetes americanus				1			2			**3**
Portunus sp.	2			1						**3**
Calappa flammea							2			**2**
*Farfantepenaeus aztecus**	2									**2**
Paguroidea	2									**2**
Periclimenes sp.	1			1						**2**
Persephona mediterranea							2			**2**
Chlamydopleon dissimile				1						**1**
Hepatus epheliticus							1			**1**
Penaeidae*				1						**1**
Pilumnus sp.	1									**1**
Xanthidae	1									**1**
Echinoderms										
Mellitidae	2				1		3			**6**

Taxon	SL1			SL2			SL3			Total
	A	B	C	A	B	C	A	B	C	
Fish										
*Umbrina coroides***	11						8			**19**
Corvula sanctaeluciae	6									**6**
Anchoa sp.**				4			1			**5**
*Menticirrhus littoralis***				2			1			**3**
Citharichthys macrops							2			**2**
*Anchoa hepsetus***		1								**1**
*Anchoa lyolepis***							1			**1**
Ariopsis felis	1									**1**
Caranx crysos				1						**1**
Caranx latus							1			**1**
Chloroscombrus chrysurus							1			**1**
Selene setapinnis	1									**1**
Selene vomer							1			**1**
Total	**63**	**1**	**0**	**15**	**1**	**0**	**31**	**0**	**1**	**112**

*Commercially and Recreationally Important Crustaceans

**Representative Important Species (RIS)

Table 5. Number of Individuals of Each Fish and Invertebrate Taxon Captured per Kilometer by Trawl at Each Station, Post-Uprate Sampling Event 6 (December 2013 - January 2014), 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										
*Rimapenaeus constrictus**	23.69						4.40			**2.78**
Portunus gibbesii	6.77			2.78			2.93		1.71	**1.47**
*Arenaeus cribrarius**	11.85			1.39						**1.31**
*Callinectes sp.**	6.77									**0.65**
Libinia dubia	6.77									**0.65**
Acetes americanus				1.39			2.93			**0.49**
Portunus sp.	3.38			1.39						**0.49**
Calappa flammea							2.93			**0.33**
*Farfantepenaeus aztecus**	3.38									**0.33**
Paguroidea	3.38									**0.33**
Periclimenes sp.	1.69			1.39						**0.33**
Persephona mediterranea							2.93			**0.33**
Chlamydopleon dissimile				1.39						**0.16**
Hepatus epheliticus							1.47			**0.16**
Penaeidae*				1.39						**0.16**
Pilumnus sp.	1.69									**0.16**
Xanthidae	1.69									**0.16**
Echinoderms										
Mellitidae	3.38				1.30		4.40			**0.98**

Taxon	SL1			SL2			SL3			Total
	A	B	C	A	B	C	A	B	C	
Fish										
*Umbrina coroides***	18.62						11.72			**3.11**
Corvula sanctaeluciae	10.15									**0.98**
*Anchoa sp.***				5.55			1.47			**0.82**
*Menticirrhus littoralis***				2.78			1.47			**0.49**
Citharichthys macrops							2.93			**0.33**
*Anchoa hepsetus***		1.32								**0.16**
*Anchoa lyolepis***							1.47			**0.16**
Ariopsis felis	1.69									**0.16**
Caranx crysos				1.39						**0.16**
Caranx latus							1.47			**0.16**
Chloroscombrus chrysurus							1.47			**0.16**
Selene setapinnis	1.69									**0.16**
Selene vomer							1.47			**0.16**
Total	**106.62**	**1.32**	**0.00**	**20.82**	**1.30**	**0.00**	**45.42**	**0.00**	**1.71**	**18.33**

*Commercially and Recreationally Important Crustaceans

**Representative Important Species (RIS)

Table 6. Number of Individuals of Each Fish and Invertebrate Taxon Captured by Gill Net at Each Station, Post-Uprate Sampling Event 6 (December 2013 - January 2014), St. Lucie Plant EPU Biological Study.

Taxon	SL1			SL2			SL3			Total
	A	B	C	A	B	C	A	B	C	
Molluscs										
Cephalopoda					1					**1**
Fish										
Rhizoprionodon terraenovae	5	43	4	1	36	3	13	13	1	**119**
Sphyrna tiburo	9			53	43	1				**106**
*Scomberomorus maculatus***	10	3		3	3		13	1		**33**
Bagre marinus	2			23	2			1		**28**
Caranx hippos				27						**27**
*Menticirrhus americanus***				26						**26**
*Trachinotus carolinus***				15						**15**
Caranx crysos		1	1	1	1		4	4		**12**
Chloroscombrus chrysurus				9	1					**10**
Lutjanus synagris	9						1			**10**
Caranx latus				3	1					**4**
Trichiurus lepturus		3			1					**4**
Carcharhinus limbatus		1		1			1			**3**
Synodus foetens								2	1	**3**
Archosargus probatocephalus	1						1			**2**
*Brevoortia smithi***				2						**2**
Calamus arctifrons	2									**2**
Carcharhinus acronotus					1		1			**2**

Taxon	SL1			SL2			SL3			Total
	A	B	C	A	B	C	A	B	C	
Carcharhinus brevipinna	2									**2**
*Leiostomus xanthurus***				2						**2**
*Micropogonias undulatus***				2						**2**
*Pomatomus saltatrix***				2						**2**
Aluterus monoceros									1	**1**
Anisotremus virginicus	1									**1**
Centropristis striata	1									**1**
Chaetodipterus faber				1						**1**
Corvula sanctaeluciae				1						**1**
Lagodon rhomboides	1									**1**
Rachycentron canadum				1						**1**
Grand Total	**43**	**51**	**5**	**173**	**90**	**4**	**34**	**21**	**3**	**424**

*Commercially and Recreationally Important Crustaceans

**Representative Important Species (RIS)

Table 7. Catch Per Unit Effort (Number of Individuals Per Hour of Soak Time) for Each Fish and Invertebrate Taxon Captured by Gill Net at Each Station, Post-Uprate Sampling Event 6 (December 2013 - January 2014), 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	
Molluscs										
Cephalopoda					0.48					**0.10**
Fish										
Rhizoprionodon terraenovae	5.00	46.91	6.49	0.69	17.14	4.39	13.68	19.50	1.62	**12.31**
Sphyrna tiburo	9.00			36.55	20.48	1.46				**10.97**
*Scomberomorus maculatus***	10.00	3.27		2.07	1.43		13.68	1.50		**3.41**
Bagre marinus	2.00			15.86	0.95			1.50		**2.90**
Caranx hippos				18.62						**2.79**
*Menticirrhus americanus***				17.93						**2.69**
*Trachinotus carolinus***				10.34						**1.55**
Caranx crysos		1.09	1.62	0.69	0.48		4.21	6.00		**1.24**
Chloroscombrus chrysurus				6.21	0.48					**1.03**
Lutjanus synagris	9.00						1.05			**1.03**
Caranx latus				2.07	0.48					**0.41**
Trichiurus lepturus		3.27			0.48					**0.41**
Carcharhinus limbatus		1.09		0.69			1.05			**0.31**
Synodus foetens								3.00	1.62	**0.31**
Archosargus probatocephalus	1.00						1.05			**0.21**
*Brevoortia smithi***				1.38						**0.21**
Calamus arctifrons	2.00									**0.21**
Carcharhinus acronotus					0.48		1.05			**0.21**

Taxon	SL1			SL2			SL3			Total
	A	B	C	A	B	C	A	B	C	
Carcharhinus brevipinna	2.00									**0.21**
*Leiostomus xanthurus***				1.38						**0.21**
*Micropogonias undulatus***				1.38						**0.21**
*Pomatomus saltatrix***				1.38						**0.21**
Aluterus monoceros									1.62	**0.10**
Anisotremus virginicus	1.00									**0.10**
Centropristis striata	1.00									**0.10**
Chaetodipterus faber				0.69						**0.10**
Corvula sanctaeluciae				0.69						**0.10**
Lagodon rhomboides	1.00									**0.10**
Rachycentron canadum				0.69						**0.10**
Grand Total	**43.00**	**55.64**	**8.11**	**119.31**	**42.86**	**5.85**	**35.79**	**31.50**	**4.86**	**43.86**

*Commercially and Recreationally Important Crustaceans

**Representative Important Species (RIS)

Table 8. Number of Individuals of Each Fish and Invertebrate Taxon Captured by Beach Seine at Each Station, Post-Uprate Sampling Event 6 (December 2013 - January 2014), St. Lucie Plant EPU Biological Study.

Taxa	SL1			SL2			SL3			Total
	A	B	C	A	B	C	A	B	C	
Fish										
*Umbrina coroides**	2		1		5		11	24	11	**54**
Trachinotus falcatus		2		1	11	1		1		**16**
Anchoa sp.*				1					11	**12**
*Menticirrhus littoralis**	3			1	4					**8**
Eucinostomus argenteus							4	3		**7**
Polydactylus virginicus					2			2		**4**
Eucinostomus gula								1	1	**2**
*Trachinotus carolinus**								2		**2**
Mugil curema				1						**1**
Selene vomer	1									**1**
Total	**6**	**2**	**1**	**4**	**22**	**1**	**15**	**33**	**23**	**107**

*Representative Important Species (RIS)

Table 9. 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 6 (December 2013 - January 2014), St. Lucie Plant EPU Biological Study. For each species the number weighed/measured (n) and the total number collected (N) are given.

Taxa	Beach Seine				Gill Net				Trawl			
	TL (mm)	Wt (g)	n	N	TL (mm)	Wt (g)	n	N	TL (mm)	Wt (g)	n	N
Anchoa hepsetus									45.8	0.4	1	1
Anchoa lyolepis									56.4	1.1	1	1
Anchoa sp.	26.2	0.1	12	12					41.4	0.4	2	5
Brevoortia smithi					367.5	476.0	2	2				
Leiostomus xanthurus					207.0	110.0	2	2				
Menticirrhus americanus					314.3	322.1	26	26				
Menticirrhus littoralis	127.7	32.5	8	8					85.7	4.0	3	3
Micropogonias undulatus					247.0	152.5	2	2				
Pomatomus saltatrix					372.0	490.0	2	2				
Scomberomorus maculatus					496.1	673.4	32	33				
Trachinotus carolinus	180.5	80.2	2	2	242.9	184.7	15	15				
Umbrina coroides	110.2	27.8	54	54					57.0	3.4	19	19

Table 10. 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 6 (December 2013 - January 2014), 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								
Emerita talpoida	Zoea	0.03	0.48	0.19	0.17	0.07	2.02	**0.544**
Farfantepenaeus sp.	Post larvae	0.56	0.07	0.85		0.62		**0.281**
Penaeidae	Mysis				0.33		0.40	**0.137**
Callinectes sp.	Megalops		0.05			0.71		**0.130**
Portunidae	Megalops	0.15		0.77		0.02		**0.100**
Portunidae	Zoea		0.22	0.04		0.29		**0.100**
Callinectes sp.	Zoea						0.48	**0.089**
Menippe mercenaria	Zoea		0.02			0.09	0.28	**0.070**
Penaeidae	Protozoea				0.02		0.02	**0.007**
Albunea sp.	Zoea				0.02			**0.004**
Hippoidea	Zoea			0.04				**0.004**
Menippe mercenaria	Megalops		0.02					**0.004**
Sicyonia sp.	Mysis				0.02			**0.004**
Sicyonia sp.	Post larvae						0.02	**0.004**
Squillidae	Pseudozoea						0.02	**0.004**
Xiphopenaeus sp.	Mysis						0.02	**0.004**

Taxa	LifeStage	SL1		SL2		SL3		Total
		A	C	A	C	A	C	
Fish Eggs								
Unidentified eggs	Egg	0.79	0.66	2.81	2.12	1.09	2.02	**1.489**
Clupeidae	Egg	0.03		3.19			0.48	**0.400**
Fish								
Sciaenidae	Post Yolk-Sac Larvae	0.03	0.40		0.38		0.28	**0.215**
Unidentified fish - damaged	Post Yolk-Sac Larvae		0.02	0.04	0.13		0.12	**0.056**
Eucinostomus sp.	Post Yolk-Sac Larvae	0.05	0.02			0.24		**0.052**
Lutjanidae	Post Yolk-Sac Larvae				0.12			**0.022**
Clupeidae	Post Yolk-Sac Larvae		0.02		0.02	0.04		**0.015**
Sparidae	Post Yolk-Sac Larvae		0.03			0.02		**0.011**
Bairdiella chrysoura	Post Yolk-Sac Larvae				0.02		0.02	**0.007**
Elops saurus	Post Yolk-Sac Larvae				0.02	0.02		**0.007**
Anchoa mitchilli	Post Yolk-Sac Larvae	0.03						**0.004**
Labridae	Post Yolk-Sac Larvae		0.02					**0.004**
Paralichthyidae	Post Yolk-Sac Larvae		0.02					**0.004**
Trichiurus lepturus	Post Yolk-Sac Larvae				0.02			**0.004**
Total		**1.67**	**2.03**	**7.92**	**3.38**	**3.22**	**6.18**	**3.774**

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 6 (December 2013 - January 2014), 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	0	1	1	0	0	0