

**Florida Power & Light Company
Biological Plan of Study Implementation
for St. Lucie Plant EPU
Post-Upgrade Event 5 Data Report**

**Report to
Florida Power & Light Company**

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**Submitted by
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INTRODUCTION

During October 2013, Ecological Associates, Inc. (EAI) conducted the fifth post-uprate field sampling event in accordance with the St. Lucie Plant EPU Biological Plan of Study. Sampling was conducted on six days between October 7 and October 21. 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 fifth 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-Upgrade Sampling Event 5 (October 2013), 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	10/7/2013	2-3 ft swells, light chop	25.0-29.0°C	8-15 mph, E to ESE	Overcast to Partly Cloudy
Trawls/ Ichthyoplankton	10/8/2013	Calm to 1-3 ft swells	24.0-29.0°C	1-15 mph, WSW to N	Partly Cloudy
Gill Nets	10/7/2013	1-2 ft swells	26.0-33.0°C	5-10 mph, S to SSE	Clear to Partly Cloudy
Gill Nets	10/8/2013	1-2 ft swells	26.0-29.0°C	7-12 mph, SW	Clear to Partly Cloudy
Beach Seines	10/21/2013	1-2 ft swells	27.6-32.7°C	1-7 mph, SE to SSE	Clear to Partly Cloudy
Sea Turtle Transects	10/21/2013	2 ft swells	26.5-26.8°C	5-7 mph, S to SE	Partly Cloudy

Table 2. Water Quality Data, Post Uprate Sampling Event 5 (October 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	54.4	28.1	36.2	8.0	5.7
		Mid-Depth	54.4	28.1	36.2	8.0	5.8
		Bottom	54.4	28.1	36.2	8.0	5.7
	Middle	Surface	54.4	28.1	36.2	8.0	5.8
		Mid-Depth	54.4	28.1	36.2	8.0	5.6
		Bottom	54.4	28.1	36.2	8.0	5.6
	South	Surface	54.7	27.9	36.4	8.0	5.7
		Mid-Depth	54.6	27.9	36.3	8.0	5.6
		Bottom	54.5	27.9	36.2	8.0	5.7
Trawl SL1 B	North	Surface	54.2	28.2	36.1	8.0	6.0
		Mid-Depth	54.3	28.2	36.1	8.1	6.0
		Bottom	54.4	28.0	36.2	8.1	5.9
	Middle	Surface	54.4	28.2	36.2	8.0	5.9
		Mid-Depth	54.4	28.2	36.2	8.1	5.9
		Bottom	54.6	28.0	36.3	8.1	5.9
	South	Surface	54.8	28.2	36.5	8.1	5.9
		Mid-Depth	54.7	28.2	36.4	8.1	5.9
		Bottom	54.8	28.0	36.4	8.1	5.8
Trawl SL1 C	North	Surface	54.8	28.4	36.5	8.0	6.0
		Mid-Depth	54.8	28.4	36.5	8.0	6.1
		Bottom	54.8	28.1	36.5	8.1	6.1
	Middle	Surface	54.4	28.4	36.2	8.1	6.2
		Mid-Depth	54.5	28.3	36.2	8.1	6.2
		Bottom	54.6	28.1	36.3	8.1	6.1
	South	Surface	54.4	28.3	36.2	8.1	6.1
		Mid-Depth	54.5	28.3	36.2	8.1	6.2
		Bottom	54.6	28.0	36.3	8.1	6.0
Trawl SL2 A	North	Surface	54.2	28.1	36.0	7.9	5.2
		Mid-Depth	54.1	28.1	36.0	7.9	5.0
		Bottom	54.1	28.1	35.9	7.9	5.0
	Middle	Surface	54.2	28.2	36.0	7.9	4.9
		Mid-Depth	54.2	28.1	36.0	7.9	4.9
		Bottom	54.1	28.0	36.0	7.9	4.9
	South	Surface	54.2	28.4	36.0	7.9	4.9
		Mid-Depth	54.2	28.1	36.0	8.0	4.9
		Bottom	54.1	27.9	35.9	8.0	5.0

Transect	Station	Depth	Specific Conductivity (mS/cm)	Water Temp (°C)	Salinity (PSU)	pH	DO (mg/l)
Trawl SL2 B	North	Surface	54.7	28.3	36.4	8.1	5.9
		Mid-Depth	54.6	28.3	36.3	8.1	5.9
		Bottom	54.6	28.3	36.3	8.1	5.9
	Middle	Surface	54.7	28.3	36.4	8.1	5.9
		Mid-Depth	54.6	28.3	36.3	8.1	5.8
		Bottom	54.6	28.3	36.3	8.1	5.8
	South	Surface	54.6	28.3	36.4	8.0	5.9
		Mid-Depth	54.6	28.3	36.3	8.1	5.9
		Bottom	54.6	28.3	36.3	8.1	5.9
Trawl SL2 C	North	Surface	54.7	28.2	36.4	8.0	5.9
		Mid-Depth	54.6	28.2	36.3	8.1	6.0
		Bottom	54.6	28.2	36.3	8.1	5.9
	Middle	Surface	54.7	28.2	36.5	8.1	5.9
		Mid-Depth	54.7	28.2	36.4	8.1	5.9
		Bottom	54.6	28.2	36.3	8.1	5.8
	South	Surface	54.7	28.2	36.4	8.1	5.9
		Mid-Depth	54.7	28.2	36.4	8.1	5.9
		Bottom	54.6	28.2	36.3	8.1	5.9
Trawl SL3 A	North	Surface	54.8	27.3	36.5	8.1	5.7
		Mid-Depth	54.8	27.3	36.5	8.1	5.7
		Bottom	54.9	27.3	36.5	8.1	5.7
	Middle	Surface	54.7	27.3	36.3	8.1	5.9
		Mid-Depth	54.8	27.3	36.3	8.1	5.9
		Bottom	54.8	27.3	36.3	8.1	5.9
	South	Surface	54.6	27.3	36.3	8.1	5.9
		Mid-Depth	54.7	27.3	36.3	8.1	5.9
		Bottom	54.7	27.3	36.4	8.1	5.9
Trawl SL3 B	North	Surface	54.7	28.1	36.4	8.1	5.7
		Mid-Depth	54.7	28.1	36.4	8.1	5.7
		Bottom	54.7	28.1	36.4	8.1	5.7
	Middle	Surface	54.7	28.2	36.4	8.1	5.8
		Mid-Depth	54.7	28.2	36.4	8.1	5.7
		Bottom	54.7	28.0	36.4	8.1	5.7
	South	Surface	54.6	28.2	36.4	8.0	5.9
		Mid-Depth	54.6	28.2	36.3	8.1	5.8
		Bottom	54.7	28.0	36.4	8.1	5.7

Transect	Station	Depth	Specific Conductivity (mS/cm)	Water Temp (°C)	Salinity (PSU)	pH	DO (mg/l)
Trawl SL3 C	North	Surface	54.5	28.4	36.2	8.1	5.9
		Mid-Depth	54.5	28.4	36.2	8.1	5.9
		Bottom	54.8	27.9	36.4	8.1	5.9
	Middle	Surface	54.5	28.4	36.2	8.1	5.9
		Mid-Depth	54.5	28.4	36.2	8.1	5.9
		Bottom	54.7	28.2	36.3	8.1	5.9
	South	Surface	54.5	28.5	36.2	8.1	5.9
		Mid-Depth	54.5	28.5	36.2	8.1	6.0
		Bottom	54.6	28.3	36.2	8.1	6.0
Gill Net SL1 A	East	Surface	54.6	28.2	36.3	7.8	5.6
		Mid-Depth	54.6	28.2	36.4	8.1	6.0
		Bottom	54.8	28.3	36.5	8.2	6.4
	Middle	Surface	54.6	28.1	36.3	8.2	5.8
		Mid-Depth	54.7	28.2	36.4	8.2	6.1
		Bottom	54.7	28.3	36.4	8.2	6.3
	West	Surface	54.4	27.8	36.1	8.2	5.3
		Mid-Depth	54.6	28.2	36.3	8.2	5.8
		Bottom	54.8	28.3	36.4	8.2	5.7
Gill Net SL1 B	East	Surface	54.7	28.2	36.4	8.0	5.6
		Mid-Depth	54.6	28.2	36.4	8.0	5.7
		Bottom	54.6	28.1	36.3	8.0	5.7
	Middle	Surface	54.7	28.2	36.4	8.1	5.7
		Mid-Depth	54.7	28.1	36.4	8.1	5.7
		Bottom	54.6	28.1	36.3	8.1	5.7
	West	Surface	54.7	28.2	36.4	8.1	5.6
		Mid-Depth	54.6	28.2	36.3	8.1	5.7
		Bottom	54.6	28.1	36.3	8.1	5.7
Gill Net SL1 C	East	Surface	54.7	28.0	36.4	8.0	5.8
		Mid-Depth	54.7	28.0	36.4	8.0	5.8
		Bottom	54.6	28.0	36.3	8.0	5.7
	Middle	Surface	54.7	28.0	36.4	8.1	5.7
		Mid-Depth	54.7	28.0	36.4	8.1	5.7
		Bottom	54.6	28.0	36.4	8.1	5.7
	West	Surface	54.8	28.0	36.4	8.1	5.7
		Mid-Depth	54.7	28.0	36.4	8.1	5.7
		Bottom	54.6	28.0	36.3	8.1	5.7

Transect	Station	Depth	Specific Conductivity (mS/cm)	Water Temp (°C)	Salinity (PSU)	pH	DO (mg/l)
Gill Net SL2 A	East	Surface	54.1	27.8	35.9	7.8	4.5
		Mid-Depth	54.1	27.8	35.8	7.9	4.5
		Bottom	54.0	27.8	35.8	7.9	4.5
	Middle	Surface	54.1	27.8	35.9	7.9	4.7
		Mid-Depth	54.1	27.8	35.9	7.9	4.6
		Bottom	54.0	27.8	35.8	7.9	4.6
	West	Surface	54.1	27.8	35.9	7.9	4.7
		Mid-Depth	54.1	27.8	35.8	7.9	4.6
		Bottom	54.1	27.8	35.8	7.9	4.6
Gill Net SL2 B	East	Surface	54.1	27.9	35.9	7.9	4.7
		Mid-Depth	54.1	27.9	35.9	7.9	4.5
		Bottom	54.0	27.9	35.8	7.9	4.5
	Middle	Surface	54.2	27.9	36.0	7.9	4.6
		Mid-Depth	54.1	27.9	35.9	7.9	4.6
		Bottom	54.0	27.9	35.8	7.9	4.5
	West	Surface	54.2	27.9	36.0	7.9	4.6
		Mid-Depth	54.1	27.9	35.9	7.9	4.5
		Bottom	54.0	27.9	35.8	7.9	4.5
Gill Net SL2 C	East	Surface	54.3	28.2	36.1	7.9	5.1
		Mid-Depth	54.3	28.1	36.0	8.0	5.1
		Bottom	54.1	28.1	36.0	8.0	5.1
	Middle	Surface	54.3	28.1	36.1	8.0	5.0
		Mid-Depth	54.2	28.1	36.0	8.0	5.1
		Bottom	54.1	28.1	35.9	8.0	5.0
	West	Surface	54.3	28.1	36.1	8.0	5.1
		Mid-Depth	54.2	28.1	36.0	8.0	5.1
		Bottom	54.1	28.1	36.0	8.0	5.0
Gill Net SL3 A	East	Surface	54.1	28.0	35.9	7.9	4.7
		Mid-Depth	54.0	28.0	35.9	8.0	4.7
		Bottom	54.1	28.0	35.9	8.0	4.7
	Middle	Surface	54.1	28.0	35.9	8.0	4.7
		Mid-Depth	54.1	28.0	35.9	8.0	4.7
		Bottom	54.1	28.0	35.9	8.0	4.7
	West	Surface	54.1	27.9	35.9	8.0	4.8
		Mid-Depth	54.1	27.9	35.8	8.0	4.5
		Bottom	54.0	27.8	35.8	8.0	4.7

Transect	Station	Depth	Specific Conductivity (mS/cm)	Water Temp (°C)	Salinity (PSU)	pH	DO (mg/l)
Gill Net SL3 B	East	Surface	54.4	28.8	36.2	8.1	5.9
		Mid-Depth	54.3	28.7	36.2	8.1	5.9
		Bottom	54.4	28.7	36.2	8.1	5.9
	Middle	Surface	54.5	28.7	36.3	8.1	5.6
		Mid-Depth	54.4	28.7	36.1	8.1	5.7
		Bottom	54.5	28.7	36.2	8.1	5.7
	West	Surface	54.4	28.7	36.2	8.1	5.7
		Mid-Depth	54.4	28.7	36.2	8.1	5.7
		Bottom	54.4	28.7	36.2	8.1	5.7
Gill Net SL3 C	East	Surface	54.5	28.9	36.3	8.1	5.9
		Mid-Depth	54.6	28.7	36.3	8.1	6.0
		Bottom	54.7	28.3	36.4	8.2	6.0
	Middle	Surface	54.5	28.9	36.2	8.1	5.8
		Mid-Depth	54.6	28.7	36.3	8.2	6.0
		Bottom	54.7	28.3	36.4	8.1	5.9
	West	Surface	54.5	29.0	36.3	8.1	5.8
		Mid-Depth	54.5	28.8	36.3	8.1	6.0
		Bottom	54.7	28.3	36.4	8.1	6.0

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 5 (October 2013), St. Lucie Plant EPU Biological Study.

Scientific Name	Common Name
Crustaceans	
<i>Albunea</i> sp.*	mole crabs
<i>Arenaeus cribrarius</i> *	speckled swimming crab
<i>Calappa flammea</i>	flame box crab
<i>Callinectes</i> sp.*	swimming crabs
Caridea	caridean shrimp
<i>Emerita talpoida</i> *	Atlantic sand crab
<i>Farfantepenaeus duorarum</i> *	pink shrimp
<i>Farfantepenaeus</i> sp.*	penaeid shrimp
<i>Latreutes fucorum</i>	slender sargassum shrimp
<i>Leander cf. tenuicornis</i>	brown grass shrimp
<i>Lepidopa</i> sp.*	mole crab
<i>Lepidopa websteri</i> *	Webster's mole crab
Majoidea	spider crabs
<i>Menippe mercenaria</i> *	Florida stone crab
<i>Menippe</i> sp.	stone crab
Paguroidea	hermit crab
Pandalidae	pandalid shrimp
<i>Panulirus argus</i> *	Caribbean spiny lobster
Penaeidae*	penaeid shrimp
<i>Phycomenes siankaanensis</i>	iridescent shrimp
Portunidae	swimming crabs
<i>Portunus anceps</i>	delicate swimming crab
<i>Portunus gibbesii</i>	iridescent swimming crab
<i>Portunus sayi</i>	sargassum swimming crab
<i>Portunus</i> sp.	portunid crab
<i>Portunus spinimanus</i>	blotched swimming crab
<i>Rimapenaeus</i> sp.*	roughneck shrimp
<i>Sicyonia</i> sp.*	rock shrimp

Scientific Name	Common Name
Echinoderms	
<i>Arbacia punctulata</i>	purple-spined sea urchin
<i>Mellita quinquesperforata</i>	sand dollar
Fish and Eggs	
<i>Achirus lineatus</i>	lined sole
<i>Albula vulpes</i>	bonefish
<i>Aluterus schoepfii</i>	orange filefish
<i>Anchoa</i> sp.**	common anchovy
<i>Anisotremus virginicus</i>	porkfish
<i>Bairdiella chrysoura</i>	silver perch
Blenniidae	combtooth blennies
Bregmacerotidae	codlets
Carangidae	jacks
<i>Caranx crysos</i>	blue runner
<i>Caranx hippos</i>	crevalle jack
<i>Carcharhinus brevipinna</i>	spinner shark
<i>Centropomus undecimalis</i>	common snook
<i>Chloroscombrus chrysurus</i>	Atlantic bumper
<i>Citharichthys spilopterus</i>	bay whiff
<i>Ctenogobius boleosoma</i>	darter goby
<i>Cynoscion nebulosus</i>	spotted sea trout
<i>Cynoscion</i> sp.	seatrouts
Diodontidae	burrfishes
<i>Diplodus holbrookii</i>	spottail pinfish
<i>Dormitator maculatus</i>	fat sleeper
<i>Dorosoma petenense</i> **	threadfin shad
Eleotridae	sleepers
<i>Elops saurus</i>	ladyfish
Engraulidae**	anchovies
<i>Eucinostomus harengulus</i>	tidewater mojarra
<i>Eucinostomus</i> sp.	mojarra
<i>Gobiesox strumosus</i>	skilletfish
Gobiidae	gobies
<i>Gobiosoma robustum</i>	code goby

Scientific Name	Common Name
Haemulidae	grunts
<i>Harengula jaguana</i> **	scaled sardine
<i>Hippocampus erectus</i>	spotted seahorse
Labridae	wrasses
Lutjanidae	snappers
<i>Menticirrhus littoralis</i> **	Gulf kingfish
Merlucciidae	hakes
<i>Microgobius gulosus</i>	clown goby
<i>Monacanthus ciliatus</i>	fringed filefish
Myctophidae	lanternfishes
<i>Nes longus</i>	orangespotted goby
Ophidiidae	cusk eels
Ophidiiformes	pearlfishes and cusk-eels
<i>Opsanus beta</i>	Gulf toadfish
Paralepididae	barracudinas
<i>Pareques</i> sp.	drum
Perciformes	perch-like fishes
<i>Prionotus scitulus</i> **	leopard searobin
<i>Rhizoprionodon terraenovae</i>	Atlantic sharpnose shark
Sciaenidae	drums and croakers
<i>Scomberomorus maculatus</i> **	Atlantic spanish mackerel
Scorpaenidae	scorpionfishes
<i>Selene setapinnis</i>	Atlantic moonfish
<i>Selene vomer</i>	lookdown
Sparidae	porgies
<i>Sparisoma</i> sp.	parrotfishes
<i>Sphyrna tiburo</i>	bonnethead shark
Stephanoberyciformes	Stephanoberyciforms
<i>Stephanolepis hispida</i>	planehead filefish
Stomiiformes	stomiiforms
<i>Synodus foetens</i>	inshore lizardfish
Tetraodontidae	puffers
<i>Trachinotus carolinus</i> **	Florida pompano
<i>Trachinotus falcatus</i>	permit

Scientific Name	Common Name
<i>Trichiurus lepturus</i>	cutlassfish
<i>Umbrina coroides</i> **	sand drum
Unidentified eggs	unidentified eggs
Unidentified fish	unidentified fish
Molluscs	
Loliginidae	squid
Sea Turtles	
<i>Chelonia mydas</i> **	green sea turtle

*Commercially and recreationally important (CRI) decapod crustaceans

**Representative Important Species (RIS)

Taxon	SL1			SL2			SL3			Total
	A	B	C	A	B	C	A	B	C	
Fish										
<i>Chloroscombrus chrysurus</i>							3			3
<i>Stephanolepis hispida</i>	3									3
<i>Eucinostomus harengulus</i>							2			2
<i>Hippocampus erectus</i>		1								1
Total	118	19	8	0	0	12	35	1	1	194

*Commercially and Recreationally Important Crustaceans

**Representative Important Species (RIS)

Taxon	SL1			SL2			SL3			Total
	A	B	C	A	B	C	A	B	C	
Fish										
<i>Chloroscombrus chrysurus</i>							3.69			0.43
<i>Stephanolepis hispida</i>	3.75									0.43
<i>Eucinostomus harengulus</i>							2.46			0.29
<i>Hippocampus erectus</i>		1.20								0.14
Total	147.52	22.84	9.14	0.00	0.00	16.43	43.10	1.49	1.73	28.11

*Commercially and Recreationally Important Crustaceans

**Representative Important Species (RIS)

Taxon	SL1			SL2			SL3			Total
	A	B	C	A	B	C	A	B	C	
<i>Prionotus scitulus</i> **		1								1
<i>Selene setapinnis</i>							1			1
<i>Synodus foetens</i>		1								1
Grand Total	15	24	4	4	5	8	22	19	49	150

*Commercially and Recreationally Important Crustaceans

**Representative Important Species (RIS)

Taxon	SL1			SL2			SL3			Total
	A	B	C	A	B	C	A	B	C	
<i>Prionotus scitulus</i> **		1.47								0.17
<i>Selene setapinnis</i>							1.30			0.17
<i>Synodus foetens</i>		1.47								0.17
Grand Total	17.65	35.29	5.13	4.35	7.70	10.67	28.57	20.65	40.83	25.42

*Commercially and Recreationally Important Crustaceans

**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 5 (October 2013), St. Lucie Plant EPU Biological Study.

Taxa	SL1			SL2			SL3			Total
	A	B	C	A	B	C	A	B	C	
Crustaceans										
<i>Emerita talpoida</i> *		1		1						2
Fish										
<i>Chloroscombrus chrysurus</i>	1	88								89
<i>Menticirrhus littoralis</i> **	4	6	2	1	5	1	4	13	5	41
<i>Trachinotus carolinus</i> **				1	4	1		6	3	15
<i>Elops saurus</i>					11			1		12
<i>Umbrina coroides</i> **	1	3	2			3	2			11
<i>Harengula jaguana</i> **			1	1			2			4
<i>Trachinotus falcatus</i>	1	1			1					3
<i>Centropomus undecimalis</i>	1						1			2
<i>Dorosoma petenense</i> **			1							1
<i>Selene vomer</i>			1							1
Total	8	99	7	4	21	5	9	20	8	181

*Commercially and Recreationally Important Crustaceans

**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 5 (October 2013), 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
<i>Dorosoma petenense</i>	102.3	9.2	1	1								
<i>Harengula jaguana</i>	98.6	10.8	4	4								
<i>Menticirrhus littoralis</i>	95.6	14.0	41	41								
<i>Trachinotus carolinus</i>	80.7	8.7	15	15								
<i>Umbrina coroides</i>	102.6	16.1	11	11								
<i>Prionotus scitulus</i>					174.0	37.0	1	1				
<i>Scomberomorus maculatus</i>					502.0	775.0	2	2				

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 5 (October 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	
Cephalopods								
Loliginidae	Juvenile						0.022	0.003
Loliginidae	Other		0.030					0.007
Crustaceans								
Penaeidae	Post Larvae				0.143	4.000		0.550
<i>Emerita talpoida</i>	Zoea	0.025	0.303	1.057	0.111	0.400	0.467	0.394
<i>Farfantepenaeus</i> sp.	Post Larvae			0.057		1.200		0.166
<i>Albunea</i> sp.	Zoea		0.227		0.159	0.100	0.444	0.160
<i>Menippe mercenaria</i>	Zoea		0.227	0.038	0.095	0.525	0.044	0.150
Portunidae	Zoea		0.106		0.111	0.100		0.059
Penaeidae	Mysis				0.016	0.275		0.039
Penaeidae	Protozoa		0.076	0.019			0.067	0.029
Portunidae	Megalops					0.200		0.026
<i>Lepidopa</i> sp.	Zoea					0.150		0.020
<i>Callinectes</i> sp.	Megalops			0.094				0.016
<i>Menippe mercenaria</i>	Megalops					0.075		0.010
<i>Menippe</i> sp.	Zoea	0.050						0.007
<i>Callinectes</i> sp.	Zoea						0.022	0.003
<i>Lepidopa websteri</i>	Zoea						0.022	0.003
<i>Menippe</i> sp.	Megalops	0.025						0.003
<i>Sicyonia</i> sp.	Post Larvae				0.016			0.003

Taxa	LifeStage	SL1		SL2		SL3		Total
		A	C	A	C	A	C	
Fish Eggs								
Unidentified eggs	Egg		4.545	0.264	3.016	0.075	3.578	2.176
Fish								
Sciaenidae	Post Yolk-Sac Larvae	0.125	0.470	0.170	0.063	0.225	0.067	0.199
<i>Anchoa</i> sp.	Post Yolk-Sac Larvae	0.075		0.038	0.254	0.625	0.022	0.153
Engraulidae	Post Yolk-Sac Larvae		0.606					0.130
Blenniidae	Post Yolk-Sac Larvae					0.525		0.068
<i>Cynoscion</i> sp.	Post Yolk-Sac Larvae		0.045			0.200		0.036
Unidentified fish	Post Yolk-Sac Larvae		0.106				0.022	0.026
<i>Gobiosoma robustum</i>	Post Yolk-Sac Larvae			0.075		0.025	0.022	0.020
Sparidae	Post Yolk-Sac Larvae			0.038	0.032			0.013
<i>Cynoscion nebulosus</i>	Post Yolk-Sac Larvae	0.050				0.025		0.010
<i>Pareques</i> sp.	Post Yolk-Sac Larvae					0.075		0.010
<i>Achirus lineatus</i>	Post Yolk-Sac Larvae	0.025				0.025		0.007
<i>Bairdiella chrysoura</i>	Post Yolk-Sac Larvae		0.015		0.016			0.007
Bregmacerotidae	Post Yolk-Sac Larvae			0.019		0.025		0.007
Carangidae	Post Yolk-Sac Larvae				0.016	0.025		0.007
Gobiidae	Post Yolk-Sac Larvae		0.030					0.007
Haemulidae	Post Yolk-Sac Larvae		0.015		0.016			0.007
<i>Microgobius gulosus</i>	Post Yolk-Sac Larvae		0.015		0.016			0.007
Myctophidae	Post Yolk-Sac Larvae			0.019		0.025		0.007
Ophidiiformes	Post Yolk-Sac Larvae		0.015		0.016			0.007
<i>Sparisoma</i> sp.	Post Yolk-Sac Larvae	0.025				0.025		0.007
Stomiiformes	Post Yolk-Sac Larvae					0.050		0.007
<i>Aluterus schoepfii</i>	Post Yolk-Sac Larvae					0.025		0.003
<i>Chloroscombrus chrysurus</i>	Post Yolk-Sac Larvae			0.019				0.003

Taxa	LifeStage	SL1		SL2		SL3		Total
		A	C	A	C	A	C	
<i>Ctenogobius boleosoma</i>	Post Yolk-Sac Larvae			0.019				0.003
Diodontidae	Post Yolk-Sac Larvae		0.015					0.003
<i>Dormitator maculatus</i>	Post Yolk-Sac Larvae			0.019				0.003
Eleotridae	Post Yolk-Sac Larvae		0.015					0.003
<i>Eucinostomus</i> sp.	Post Yolk-Sac Larvae					0.025		0.003
<i>Gobiesox strumosus</i>	Post Yolk-Sac Larvae						0.022	0.003
Labridae	Post Yolk-Sac Larvae		0.015					0.003
Lutjanidae	Post Yolk-Sac Larvae						0.022	0.003
Merlucciidae	Post Yolk-Sac Larvae				0.016			0.003
<i>Monacanthus ciliatus</i>	Post Yolk-Sac Larvae					0.025		0.003
<i>Nes longus</i>	Post Yolk-Sac Larvae					0.025		0.003
Ophidiidae	Post Yolk-Sac Larvae						0.022	0.003
Paralepididae	Post Yolk-Sac Larvae		0.015					0.003
Perciformes	Post Yolk-Sac Larvae				0.016			0.003
Scorpaenidae	Post Yolk-Sac Larvae						0.022	0.003
Stephanoberyciformes	Post Yolk-Sac Larvae		0.015					0.003
Tetraodontidae	Post Yolk-Sac Larvae	0.025						0.003
Total		0.425	6.909	1.943	4.127	9.075	4.889	4.622

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 5 (October 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
<i>Chelonia mydas</i>	2	2	0	0	0	0