

**Florida Power & Light Company
Biological Plan of Study Implementation
for St. Lucie Plant EPU
Post-Upgrade Event 3 Data Report**

**Report to
Florida Power & Light Company**

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**Submitted by
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INTRODUCTION

During June 2013, Ecological Associates, Inc. (EAI) conducted the third post-uprate field sampling event in accordance with the St. Lucie Plant EPU Biological Plan of Study. Sampling was conducted on six days between June 3 and June 27. 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 third 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 3 (June 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 and Direction	Sky Conditions
Trawls/ Ichthyoplankton	6/3/13	Flat	25.6-26.1°C	0-2 mph, NW to SE	Mostly Cloudy
Trawls/ Ichthyoplankton	6/4/12	Flat to 1-2 ft swell	26.6-27.5°C	0-5 mph, S to SSE	Mostly Cloudy
Gill Nets	6/26/13	2-3 ft swell, light chop	28.9-31.4°C	5-10 mph, SE	Partly Cloudy
Gill Nets	6/27/13	1-2 ft swell, light chop	28.7-29.8°C	1-5 mph, SE	Clear
Beach Seines	6/12/13	1-3 ft swell, light chop	28.5-32.1°C	0-7 mph, NE to SW	Clear
Sea Turtle Transects	6/4/13	Calm	28.9°C	2-3 mph, E	Overcast

Table 2. Water Quality Data, Post Uprate Sampling Event 3 (June 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	54.7	25.7	36.3	8.1	6.0
		Mid-Depth	54.8	25.7	36.3	8.1	5.9
		Bottom	54.8	25.7	36.3	8.1	5.9
	Middle	Surface	54.8	25.8	36.3	8.1	6.0
		Mid-Depth	54.8	25.7	36.3	8.1	6.0
		Bottom	54.7	25.7	36.3	8.1	5.7
	South	Surface	54.9	25.8	36.4	8.1	5.9
		Mid-Depth	55.0	25.3	36.4	8.1	5.7
		Bottom	55.0	24.9	36.4	8.1	6.3
Trawl SL1 B	North	Surface	54.7	25.5	36.2	8.2	6.1
		Mid-Depth	54.9	23.6	36.3	8.2	6.4
		Bottom	54.9	23.1	36.2	8.2	6.8
	Middle	Surface	54.7	25.5	36.2	8.2	6.2
		Mid-Depth	54.9	23.6	36.3	8.2	6.6
		Bottom	54.9	23.0	36.2	8.2	6.9
	South	Surface	55.0	25.5	36.4	8.2	6.2
		Mid-Depth	55.0	23.6	36.3	8.2	6.5
		Bottom	55.0	23.0	36.3	8.2	7.0
Trawl SL1 C	North	Surface	55.0	24.4	36.3	8.2	6.5
		Mid-Depth	55.0	23.3	36.3	8.2	6.8
		Bottom	55.0	23.1	36.3	8.2	6.9
	Middle	Surface	54.8	24.6	36.3	8.2	6.5
		Mid-Depth	54.0	23.3	36.3	8.2	6.8
		Bottom	54.0	23.1	36.2	8.2	6.9
	South	Surface	54.8	24.5	36.3	8.2	6.4
		Mid-Depth	54.9	23.2	36.3	8.2	6.8
		Bottom	54.9	23.2	36.2	8.2	6.9
Trawl SL2 A	North	Surface	54.7	25.1	36.2	8.1	6.1
		Mid-Depth	54.8	24.3	36.2	8.2	6.3
		Bottom	54.8	23.9	36.2	8.2	6.3
	Middle	Surface	54.7	24.8	36.2	8.2	6.1
		Mid-Depth	54.8	24.1	36.2	8.2	6.3
		Bottom	54.9	23.3	36.3	8.2	6.5
	South	Surface	54.8	24.5	36.3	8.2	6.3
		Mid-Depth	54.9	23.8	36.3	8.2	6.5
		Bottom	54.9	23.8	36.3	8.2	6.5

Table 2. Water Quality Data, Post Uprate Sampling Event 3 (June 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	54.8	24.2	36.2	8.2	6.6
		Mid-Depth	54.9	22.5	36.2	8.2	7.1
		Bottom	54.9	22.5	36.2	8.2	7.1
	Middle	Surface	54.8	24.2	36.3	8.1	6.7
		Mid-Depth	54.9	22.5	36.2	8.2	7.1
		Bottom	54.9	22.5	36.2	8.2	7.1
	South	Surface	55.0	24.3	36.4	8.1	6.4
		Mid-Depth	55.0	22.4	36.4	8.2	7.1
		Bottom	55.0	22.4	36.3	8.2	7.0
Trawl SL2 C	North	Surface	54.6	23.9	36.1	8.2	6.5
		Mid-Depth	54.8	23.1	36.2	8.2	6.7
		Bottom	54.8	22.8	36.2	8.2	6.9
	Middle	Surface	54.6	23.9	36.1	8.2	6.5
		Mid-Depth	54.8	22.7	36.1	8.2	6.8
		Bottom	54.8	22.7	36.1	8.2	6.8
	South	Surface	54.7	24.0	36.1	8.2	6.4
		Mid-Depth	54.9	22.7	36.2	8.2	6.8
		Bottom	54.9	22.7	36.2	8.2	6.8
Trawl SL3 A	North	Surface	54.6	25.5	36.2	8.1	6.4
		Mid-Depth	54.7	24.0	36.2	8.1	6.5
		Bottom	55.0	22.8	36.3	8.1	7.2
	Middle	Surface	54.5	25.5	36.1	8.1	6.2
		Mid-Depth	54.9	23.1	36.3	8.2	7.2
		Bottom	54.9	22.8	36.2	8.2	7.1
	South	Surface	54.5	25.5	36.1	8.1	6.2
		Mid-Depth	54.9	23.2	36.3	8.2	6.7
		Bottom	54.9	23.0	36.2	8.2	6.8
Trawl SL3 B	North	Surface	54.4	25.2	36.0	8.2	6.2
		Mid-Depth	54.9	22.5	36.2	8.2	6.7
		Bottom	55.0	22.1	36.2	8.3	6.6
	Middle	Surface	54.2	25.3	35.8	8.2	6.2
		Mid-Depth	54.8	22.4	36.1	8.2	6.8
		Bottom	54.8	22.1	36.1	8.2	6.9
	South	Surface	54.2	25.3	35.9	8.2	6.2
		Mid-Depth	54.8	22.4	36.1	8.2	6.8
		Bottom	54.8	22.1	36.1	8.2	6.9

Table 2. Water Quality Data, Post Uprate Sampling Event 3 (June 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	54.2	25.5	35.9	8.2	6.0
		Mid-Depth	54.8	22.3	36.1	8.2	6.4
		Bottom	54.8	22.2	36.1	8.2	6.2
	Middle	Surface	54.2	25.5	35.9	8.2	6.1
		Mid-Depth	54.8	22.3	36.1	8.2	6.3
		Bottom	54.8	22.2	36.1	8.2	6.3
	South	Surface	54.3	25.6	35.9	8.2	6.3
		Mid-Depth	54.9	22.3	36.2	8.2	6.4
		Bottom	54.9	22.2	36.2	8.3	6.2
Gill Net SL1 A	East	Surface	52.6	24.8	34.6	8.1	6.2
		Mid-Depth	52.5	24.0	34.6	8.1	6.1
		Bottom	52.4	23.8	34.5	8.1	5.9
	Middle	Surface	52.3	24.9	34.4	8.1	5.8
		Mid-Depth	52.3	24.2	34.4	8.1	6.0
		Bottom	52.3	24.0	34.4	8.1	5.7
	West	Surface	52.4	24.6	34.4	8.1	5.5
		Mid-Depth	52.3	24.2	34.4	8.1	5.8
		Bottom	52.2	24.2	34.4	8.1	5.9
Gill Net SL1 B	East	Surface	52.6	25.3	34.6	8.1	6.3
		Mid-Depth	52.4	24.3	34.5	8.2	6.5
		Bottom	52.4	23.5	34.5	8.1	6.0
	Middle	Surface	52.7	25.0	34.6	8.2	6.2
		Mid-Depth	52.2	24.6	34.5	8.2	6.4
		Bottom	52.4	24.0	34.4	8.1	6.0
	West	Surface	52.4	25.1	34.5	8.1	6.1
		Mid-Depth	52.3	24.3	34.4	8.1	6.0
		Bottom	52.2	24.0	34.3	8.1	6.0
Gill Net SL1 C	East	Surface	53.5	25.4	35.3	8.1	7.5
		Mid-Depth	53.6	24.4	35.3	8.1	7.8
		Bottom	53.6	23.3	35.1	8.1	6.7
	Middle	Surface	52.5	25.3	34.5	8.1	6.6
		Mid-Depth	52.6	24.4	34.7	8.1	7.0
		Bottom	52.8	23.4	34.6	8.1	6.5
	West	Surface	52.3	25.3	34.4	8.1	6.5
		Mid-Depth	52.3	24.2	34.4	8.1	6.6
		Bottom	52.5	23.4	34.5	8.1	6.3

Table 2. Water Quality Data, Post Uprate Sampling Event 3 (June 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	East	Surface	53.8	25.1	35.5	8.0	6.8
		Mid-Depth	53.8	24.5	35.4	8.1	7.1
		Bottom	53.8	23.8	35.5	8.1	6.8
	Middle	Surface	53.7	25.0	35.4	8.1	6.7
		Mid-Depth	53.4	24.5	35.4	8.1	6.9
		Bottom	53.7	23.8	35.5	8.1	6.9
	West	Surface	53.8	25.0	35.5	8.1	6.5
		Mid-Depth	53.8	24.8	35.5	8.1	6.5
		Bottom	53.9	24.0	35.6	8.1	6.4
Gill Net SL2 B	East	Surface	54.9	25.0	36.4	8.2	6.7
		Mid-Depth	54.9	23.7	36.2	8.2	6.8
		Bottom	54.6	23.3	36.1	8.2	6.6
	Middle	Surface	54.9	25.0	36.4	8.1	6.7
		Mid-Depth	54.7	23.7	36.1	8.2	6.8
		Bottom	54.5	23.3	36.0	8.1	6.6
	West	Surface	54.7	25.0	36.1	8.1	6.7
		Mid-Depth	54.5	23.9	36.0	8.2	6.8
		Bottom	54.5	23.5	36.0	8.1	6.7
Gill Net SL2 C	East	Surface	54.8	25.3	36.2	8.1	6.6
		Mid-Depth	54.7	23.8	35.9	8.2	6.9
		Bottom	54.6	23.3	36.0	8.2	7.0
	Middle	Surface	54.4	25.4	35.9	8.1	6.6
		Mid-Depth	54.1	23.8	35.8	8.2	6.9
		Bottom	54.1	23.1	35.6	8.2	6.9
	West	Surface	54.1	25.3	35.7	8.1	6.6
		Mid-Depth	53.8	24.0	35.5	8.2	6.9
		Bottom	53.9	23.1	35.5	8.2	6.8
Gill Net SL3 A	East	Surface	54.4	23.6	36.0	8.2	6.8
		Mid-Depth	54.4	22.7	35.8	8.2	7.1
		Bottom	54.3	22.7	35.7	8.2	7.2
	Middle	Surface	53.9	23.7	35.5	8.2	6.7
		Mid-Depth	53.9	22.8	35.5	8.2	7.1
		Bottom	53.8	22.8	35.4	8.2	7.1
	West	Surface	53.7	23.9	35.3	8.2	6.6
		Mid-Depth	53.6	22.9	35.2	8.2	7.0
		Bottom	53.5	22.8	35.2	8.2	7.0

Table 2. Water Quality Data, Post Uprate Sampling Event 3 (June 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	East	Surface	54.2	24.1	35.6	8.2	7.0
		Mid-Depth	54.0	23.0	35.5	8.2	7.4
		Bottom	53.9	22.0	35.4	8.2	7.4
	Middle	Surface	53.5	24.2	35.1	8.2	6.7
		Mid-Depth	53.4	23.0	35.1	8.2	7.2
		Bottom	53.3	22.2	35.0	8.2	7.2
	West	Surface	52.9	24.3	34.8	8.2	6.7
		Mid-Depth	53.0	23.0	34.8	8.2	7.2
		Bottom	53.0	22.3	34.7	8.2	7.2
Gill Net SL3 C	East	Surface	53.2	24.5	35.0	8.2	7.1
		Mid-Depth	53.3	22.7	35.0	8.2	7.3
		Bottom	53.1	21.8	34.8	8.2	7.5
	Middle	Surface	52.8	24.9	34.6	8.2	6.8
		Mid-Depth	52.9	22.6	34.7	8.2	7.1
		Bottom	52.8	21.8	34.6	8.2	7.2
	West	Surface	52.4	24.7	34.5	8.2	6.7
		Mid-Depth	52.6	22.6	34.6	8.2	7.0
		Bottom	52.6	21.9	34.5	8.2	7.1

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 3 (June 2013), St. Lucie Plant EPU Biological Study.

Scientific Name	Common Name
Crustaceans	
<i>Acetes americanus</i>	aviu shrimp
<i>Albunea</i> sp.	mole crab
<i>Arenaeus cribrarius</i> *	speckled swimming crab
<i>Calappa flammea</i>	flame box crab
<i>Callinectes</i> sp.	swimming crab
<i>Chlamydopleon dissimile</i>	opossum shrimp
<i>Emerita talpoida</i> *	Atlantic sand crab
<i>Farfantepenaeus aztecus</i> *	brown shrimp
<i>Farfantepenaeus duorarum</i> *	pink shrimp
<i>Hepatus epheliticus</i>	calico crab
<i>Latreutes parvulus</i>	sargassum 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
Paguroidea	hermit crab
<i>Panulirus argus</i> *	Caribbean spiny lobster
Penaeidae	penaeid shrimp
<i>Persephona mediterranea</i>	mottled purse crab
<i>Portunus gibbesii</i>	iridescent swimming crab
<i>Portunus</i> sp.	portunid crab
<i>Portunus spinimanus</i>	blotched swimming crab
<i>Processa hemphilli</i>	night shrimp
<i>Rimapenaeus</i> sp.*	roughneck shrimp
<i>Sicyonia brevirostris</i>	brown rock shrimp
<i>Synalpheus</i> sp.	snapping shrimp
Echinoderms	
Mellitidae	sand dollar

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 3 (June 2013), St. Lucie Plant EPU Biological Study.

Scientific Name	Common Name
Fish and Eggs	
<i>Anchoa hepsetus</i> **	striped anchovy
<i>Anchoa mitchilli</i> **	bay anchovy
<i>Anchoa</i> sp.**	common anchovy
<i>Bairdiella chrysoura</i>	silver perch
Blenniidae	blenny
Bregmacerotidae	codlets
Carangidae	jacks
<i>Caranx crysos</i>	blue runner
<i>Centropomus undecimalis</i>	common Snook
<i>Cerdale floridana</i>	pugjaw wormfish
<i>Chaetodipterus faber</i>	Atlantic spadefish
<i>Chloroscombrus chrysurus</i>	Atlantic bumper
Clupeidae	herrings and sardines
<i>Dactyloscopus crossotus</i>	bigeye stargazer
<i>Decapterus macarellus</i>	mackerel scad
<i>Diapterus auratus</i>	Irish pompano
Diodontidae	burrfishes
Engraulidae	anchovies
Gobiidae	gobies
<i>Gobiosoma robustum</i>	code goby
Haemulidae	grunts
<i>Harengula jaguana</i> **	scaled sardine
Labridae	wrasses
Labrisomidae	labrisomid blennies
<i>Larimus fasciatus</i>	banded drum
<i>Leiostomus xanthurus</i>	spot
Lutjanidae	snappers
<i>Lutjanus</i> sp.	snapper
Melanocetidae	deepsea anglerfishes
<i>Menticirrhus littoralis</i> **	Gulf kingfish

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 3 (June 2013), St. Lucie Plant EPU Biological Study.

Scientific Name	Common Name
<i>Menticirrhus</i> sp.	kingfishes
<i>Microgobius thalassinus</i>	green goby
Monacanthidae	filefishes
<i>Monacanthus ciliatus</i>	fringed filefish
<i>Opisthonema oglinum</i> **	Atlantic thread herring
<i>Parablennius marmoreus</i>	seaweed blenny
Paralichthyidae	sand flounders
Perciformes	perch-like fishes
Pomacanthidae	angelfishes
<i>Prionotus scitulus</i> **	leopard searobin
<i>Prionotus tribulus</i>	bighead searobin
<i>Rhizoprionodon terraenovae</i>	Atlantic sharpnose shark
Sciaenidae	drums and croakers
Scorpaenidae	scorpionfishes
Scorpaeniformes	scorpionfishes
<i>Selene setapinnis</i>	Atlantic moonfish
Sparidae	porgies
<i>Sphyrna tiburo</i>	bonnethead shark
<i>Trachinotus carolinus</i> **	Florida pompano
<i>Trachinotus goodei</i>	palometa
<i>Umbrina coroides</i> **	sand drum
Unidentified fragment	unidentified larval fragment
Sea Turtles	
<i>Chelonia mydas</i> **	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 3 (June 2013), St. Lucie Plant EPU Biological Study.

Taxon	SL1			SL2			SL3			Total
	A	B	C	A	B	C	A	B	C	
Crustaceans										
<i>Acetes americanus</i>	7	9		3						19
<i>Rimapenaeus</i> sp.*	3			3			5			11
<i>Farfantepenaeus duorarum</i> *	4									4
Penaeidae	1				2	1				4
<i>Arenaeus cribrarius</i> *				1			1			2
<i>Latreutes parvulus</i>				2						2
<i>Portunus gibbesii</i>								2		2
<i>Portunus</i> sp.						1	1			2
<i>Portunus spinimanus</i>								2		2
<i>Chlamydopleon dissimile</i>	1									1
<i>Hepatus epheliticus</i>					1					1
Majoidea	1									1
Paguroidea				1						1
<i>Persephona mediterranea</i>				1						1
<i>Processa hemphilli</i>				1						1
<i>Synalpheus</i> sp.				1						1
Echinoderms										
Mellitidae			11			2				13

Fish										
<i>Umbrina coroides</i> **	132	2		4			14			152
<i>Anchoa</i> sp.**	3						12			15
<i>Chloroscombrus chrysurus</i>	11									11
<i>Larimus fasciatus</i>	7	1		1						9
<i>Menticirrhus littoralis</i> **	7			2						9
<i>Prionotus scitulus</i> **			1			1				2
<i>Anchoa hepsetus</i> **	1									1
<i>Anchoa mitchilli</i> **	1									1
<i>Dactyloscopus crossotus</i>						1				1
<i>Selene setapinnis</i>	1									1
Total	180	12	12	20	3	6	33	4	0	271

*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 3 (June 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										
<i>Acetes americanus</i>	8.16	10.76		3.59						28.23
<i>Arenaeus cribrarius</i> *				1.20			2.30			2.97
<i>Chlamydopleon dissimile</i>	1.17									1.49
<i>Farfantepenaeus duorarum</i> *	4.66									5.94
<i>Hepatus epheliticus</i>					0.97					1.49
<i>Latreutes parvulus</i>				2.39						2.97
Majoidea	1.17									1.49
Paguroidea				1.20						1.49
Penaeidae	1.17				1.95	1.40				5.94
<i>Persephona mediterranea</i>				1.20						1.49
<i>Portunus gibbesii</i>								2.82		2.97
<i>Portunus</i> sp.						1.40	2.30			2.97
<i>Portunus spinimanus</i>								2.82		2.97
<i>Processa hemphilli</i>				1.20						1.49
<i>Rimapenaeus</i> sp.*	3.50			3.59			11.49			16.34
<i>Synalpheus</i> sp.				1.20						1.49
Echinoderms										
Mellitidae			17.14			2.80				19.32

Fish										
<i>Anchoa hepsetus</i> **	1.17									1.49
<i>Anchoa mitchilli</i> **	1.17									1.49
<i>Anchoa</i> sp.**	3.50						27.57			22.29
<i>Chloroscombrus chrysurus</i>	12.82									16.34
<i>Dactyloscopus crossotus</i>						1.40				1.49
<i>Larimus fasciatus</i>	8.16	1.20		1.20						13.37
<i>Menticirrhus littoralis</i> **	8.16			2.39						13.37
<i>Prionotus scitulus</i>			1.56			1.40				2.97
<i>Selene setapinnis</i>	1.17									1.49
<i>Umbrina coroides</i> **	153.90	2.39		4.78			32.16			225.85
Total	209.86	14.35	18.70	23.91	2.92	8.39	75.81	5.63	0.00	402.67

*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 3 (June 2013), St. Lucie Plant EPU Biological Study.

Taxon	SL1			SL2			SL3			Total
	A	B	C	A	B	C	A	B	C	
<i>Sphyrna tiburo</i>	209		2							211
<i>Rhizoprionodon terraenovae</i>	15								4	19
<i>Chloroscombrus chrysurus</i>	6		6							12
<i>Caranx crysos</i>						2	1			3
<i>Opisthonema oglinum</i> *			1							1
<i>Prionotus tribulus</i>								1		1
Total	230	0	9	0	0	2	1	1	4	247

*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 3 (June 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	
<i>Sphyrna tiburo</i>	137.80		3.33							32.21
<i>Rhizoprionodon terraenovae</i>	9.89								6.15	2.90
<i>Chloroscombrus chrysurus</i>	3.96		10.00							1.83
<i>Caranx crysos</i>						2.73	1.76			0.46
<i>Opisthonema oglinum</i> *			1.67							0.15
<i>Prionotus tribulus</i>								1.40		0.15
Total	151.65		15.00			2.73	1.76	1.40	6.15	37.70

*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 3 (June 2013), St. Lucie Plant EPU Biological Study.

Taxa	SL1			SL2			SL3			Total
	A	B	C	A	B	C	A	B	C	
Crustaceans										
<i>Panulirus argus</i> *				1			1			2
<i>Emerita talpoida</i> *				1						1
Fish										
<i>Harengula jaguana</i> **	11			113	2					126
<i>Umbrina coroides</i> **				2	53	1	4	7	12	79
<i>Menticirrhus littoralis</i> **	1	5		12	18		4	11		51
<i>Trachinotus carolinus</i> **			2	1	4	1	4	3	1	16
<i>Opisthonema oglinum</i> **	2			10						12
<i>Chloroscombrus chrysurus</i>								5		5
<i>Anchoa sp.</i> **		1								1
<i>Centropomus undecimalis</i>					1					1
<i>Decapterus macarellus</i>				1						1
<i>Diapterus auratus</i>								1		1
<i>Trachinotus goodei</i>					1					1
Total	14	6	2	141	79	2	13	27	13	297

*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 3 (June 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												
<i>Anchoa hepsetus</i>					59.2	1.5	1	1				
<i>Anchoa mitchilli</i>					53.1	1.1	1	1				
<i>Anchoa sp.</i>					22.7	0.05	15	15	18.1	0.1	1	1
<i>Harengula jaguana</i>									68.7	3.3	43	126
<i>Menticirrhus littoralis</i>					64.5	2.7	9	9	79.8	4.2	51	51
<i>Opisthonema oglinum</i>	237.0	125.0	1	1					65.2	2.6	12	12
<i>Prionotus scitulus</i>					152.5	33.6	2	2				
<i>Trachinotus carolinus</i>									60.9	3.6	16	16
<i>Umbrina coroides</i>					61.8	3.1	50	152	96.0	6.8	56	79

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 3 (June 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								
<i>Albunea</i> sp.	Zoea	0.020	1.425	0.042	4.755	0.982	0.840	1.380
<i>Emerita talpoida</i>	Zoea	0.449	0.025	0.146	0.189	0.053	0.040	0.152
<i>Lepidopa websteri</i>	Zoea			0.188	0.075	0.421		0.125
<i>Menippe mercenaria</i>	Zoea		0.675	0.042		0.105	0.040	0.125
<i>Callinectes</i> sp.	Megalops	0.163				0.351		0.094
Penaeidae	Protozoa		0.225	0.167	0.094	0.035	0.040	0.088
Penaeidae	Post Larvae					0.246		0.047
<i>Callinectes</i> sp.	Zoea		0.275		0.019			0.040
<i>Sicyonia brevirostris</i>	Mysis						0.020	0.003
<i>Farfantepenaeus aztecus</i>	Post Larvae			0.021				0.003
<i>Farfantepenaeus duorarum</i>	Post Larvae	0.020						0.003
<i>Lepidopa</i> sp.	Zoea						0.020	0.003
Penaeidae	Zoea		0.025					0.003
Eggs								
Unidentified eggs	Egg	25.776	6.825	12.542	5.113	16.877	4.160	12.051
Clupeidae	Egg		1.275			0.018	0.400	0.242
Fish								
Clupeidae	Post Yolk-Sac Larvae		0.050	2.875		1.509	0.020	0.764
<i>Microgobius gulosus</i>	Post Yolk-Sac Larvae		0.050	0.021	0.566			0.111

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 3 (June 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.)

Clupeidae	Yolk-Sac Larvae		0.625					0.084
Gobiidae	Post Yolk-Sac Larvae	0.020	0.025	0.021	0.283		0.100	0.077
Engraulidae	Post Yolk-Sac Larvae	0.082			0.226			0.054
<i>Lutjanus</i> sp.	Post Yolk-Sac Larvae				0.208		0.020	0.040
<i>Cerdale floridana</i>	Post Yolk-Sac Larvae				0.189			0.034
Blenniidae	Post Yolk-Sac Larvae				0.094	0.053		0.027
Sciaenidae	Post Yolk-Sac Larvae		0.050	0.104		0.018		0.027
<i>Microgobius thalassinus</i>	Post Yolk-Sac Larvae			0.042			0.100	0.024
Diodontidae	Post Yolk-Sac Larvae			0.042			0.040	0.013
<i>Monacanthus ciliatus</i>	Post Yolk-Sac Larvae	0.041				0.018		0.010
Sparidae	Post Yolk-Sac Larvae						0.060	0.010
Bregmacerotidae	Post Yolk-Sac Larvae				0.038			0.007
Carangidae	Post Yolk-Sac Larvae			0.042				0.007
<i>Chaetodipterus faber</i>	Post Yolk-Sac Larvae				0.038			0.007
<i>Gobiosoma robustum</i>	Post Yolk-Sac Larvae				0.038			0.007
Labridae	Post Yolk-Sac Larvae					0.035		0.007
Paralichthyidae	Post Yolk-Sac Larvae			0.042				0.007
Scorpaenidae	Post Yolk-Sac Larvae	0.041						0.007
<i>Bairdiella chrysoura</i>	Post Yolk-Sac Larvae			0.021				0.003
Haemulidae	Post Yolk-Sac Larvae					0.018		0.003
Labrisomidae	Post Yolk-Sac Larvae				0.019			0.003
<i>Leiostomus xanthurus</i>	Post Yolk-Sac Larvae	0.020						0.003

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 3 (June 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.)

Lutjanidae	Post Yolk-Sac Larvae					0.018		0.003
Melanocetidae	Post Yolk-Sac Larvae					0.018		0.003
<i>Menticirrhus</i> sp.	Post Yolk-Sac Larvae					0.018		0.003
Monacanthidae	Post Yolk-Sac Larvae						0.020	0.003
<i>Parablennius marmoratus</i>	Post Yolk-Sac Larvae					0.018		0.003
Perciformes	Post Yolk-Sac Larvae					0.018		0.003
Pomacanthidae	Post Yolk-Sac Larvae						0.020	0.003
Scorpaeniformes	Post Yolk-Sac Larvae		0.025					0.003
Unidentified fragment	Post Yolk-Sac Larvae		0.025					0.003
Total		26.163	10.150	16.167	7.000	19.789	5.060	14.195

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 3 (June 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>	0	0	4	2	0	0