Florida Power & Light Company
Biological Plan of Study Implementation for St. Lucie Plant EPU
Post-Uprate Event 12 Data Report

Report to
Florida Power & Light Company

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Submitted by
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INTRODUCTION

During December 2014 through February 2015, Ecological Associates, Inc. (EAI) conducted the twelfth and final post-uprate field sampling event in accordance with the St. Lucie Plant EPU Biological Plan of Study. Due to unfavorable sea conditions, sampling was conducted on five days between December 17, 2014 and February 9, 2015. 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 twelfth 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 8-25 ft, Transect B was located approximately 4,000 ft. from shore in water depths of 36-45 ft, and Transect C was located approximately 8,000 ft. from shore in water depths of 32-48 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 30 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 12 (December 2014 - February 2015), 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	1/20/2015	1-2' Swells	18.6-20.0°C	0-3 mph, W	Overcast
Trawls/ Ichthyoplankton	1/21/2015	1-3' Swells	18.4-22.7°C	0-10 mph, NE	Clear
Gill Nets	12/17/2014	1-2' Swells	19.0-23.4°C	3-7 mph, NW	Clear
Gill Nets	12/18/2014	2' Swells	17.7-21.5°C	5-10 mph, NNW	Partly Cloudy
Beach Seines	2/9/2015	1-4' Swells	19.5-27.1°C	0-7 mph, SE to NE	Partly Cloudy
Sea Turtle Transects	1/21/2015	1-2' Swells	17.8-19.3°C	4-7 mph, NNW	Clear

Table 2. Water Quality Data, Post-Uprate Sampling Event 12 (December 2014 - February 2015), 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	52.8	19.0	34.5	8.1	7.2
		Mid-Depth	52.8	19.0	34.5	8.1	7.1
		Bottom	52.8	19.1	34.5	8.1	7.0
	Middle	Surface	52.8	19.0	34.5	8.0	7.4
		Mid-Depth	52.8	19.0	34.5	8.1	7.3
		Bottom	52.9	19.1	34.5	8.1	7.2
	South	Surface	52.8	19.0	34.5	8.0	7.2
		Mid-Depth	52.8	18.9	34.5	8.1	7.3
		Bottom	52.9	19.1	34.5	8.1	7.2
Trawl SL1 B	North	Surface	52.9	19.5	34.6	8.1	7.1
		Mid-Depth	52.9	19.5	34.6	8.1	7.1
		Bottom	52.9	19.5	34.6	8.1	7.1
	Middle	Surface	52.9	19.7	34.6	8.0	7.1
		Mid-Depth	53.0	19.3	34.5	8.1	7.1
		Bottom	53.0	19.3	34.5	8.1	7.0
	South	Surface	52.9	19.8	34.6	8.0	7.1
		Mid-Depth	53.0	19.2	34.6	8.0	7.1
		Bottom	53.0	19.2	34.6	8.0	7.1
Trawl SL1 C	North	Surface	52.9	19.9	34.6	8.1	7.2
		Mid-Depth	53.0	19.3	34.6	8.1	7.2
		Bottom	53.0	19.2	34.6	8.1	7.2
	Middle	Surface	52.9	19.9	34.6	8.1	7.2
		Mid-Depth	53.0	19.2	34.6	8.1	7.2
		Bottom	53.0	19.2	34.6	8.1	7.2
	South	Surface	52.9	19.9	34.6	8.0	7.1
		Mid-Depth	53.1	19.2	34.6	8.0	7.2
		Bottom	53.0	19.2	34.6	8.0	7.1
Trawl SL2 A	North	Surface	52.9	19.3	34.5	8.1	7.0
		Mid-Depth	52.9	19.4	34.6	8.1	7.0
		Bottom	52.9	19.4	34.6	8.1	7.0
	Middle	Surface	52.9	19.3	34.5	8.1	7.1
		Mid-Depth	53.0	19.3	34.6	8.1	7.0
		Bottom	53.0	19.3	34.6	8.1	7.0
	South	Surface	53.0	19.3	34.6	8.1	7.1
		Mid-Depth	53.0	19.3	34.6	8.1	7.0
		Bottom	53.0	19.3	34.6	8.1	7.0

Transect	Station	Depth	Specific Conductivity (mS/cm)	Water Temp (°C)	Salinity (PSU)	pH	DO (mg/l)
Trawl SL2 B	North	Surface	53.3	20.5	34.9	8.2	7.1
		Mid-Depth	53.3	20.4	34.9	8.2	7.1
		Bottom	53.3	19.4	34.8	8.2	7.1
	Middle	Surface	53.4	20.7	35.0	8.2	7.1
		Mid-Depth	53.4	20.4	35.0	8.2	7.1
		Bottom	53.2	19.5	34.8	8.2	7.1
	South	Surface	53.5	21.1	35.2	8.1	7.1
		Mid-Depth	53.5	20.9	35.2	8.2	7.1
		Bottom	53.2	19.5	34.9	8.2	7.1
Trawl SL2 C	North	Surface	53.2	19.2	34.8	8.0	7.0
		Mid-Depth	53.2	19.2	34.8	8.1	7.0
		Bottom	53.2	19.2	34.8	8.1	7.0
	Middle	Surface	53.2	19.1	34.8	8.1	7.1
		Mid-Depth	53.2	19.1	34.8	8.1	7.1
		Bottom	53.2	19.1	34.8	8.1	7.1
	South	Surface	53.1	19.1	34.8	8.1	7.1
		Mid-Depth	53.2	19.1	34.8	8.1	7.1
		Bottom	53.2	19.1	34.8	8.1	7.1
Trawl SL3 A	North	Surface	53.7	22.1	35.3	8.1	6.7
		Mid-Depth	53.5	21.7	35.3	8.1	6.8
		Bottom	53.5	21.2	35.1	8.1	6.8
	Middle	Surface	53.4	21.6	35.0	8.1	6.9
		Mid-Depth	53.5	21.1	34.9	8.1	6.9
		Bottom	53.3	20.8	34.9	8.1	7.0
	South	Surface	53.4	21.1	34.9	8.0	6.8
		Mid-Depth	53.4	21.3	35.1	8.1	6.8
		Bottom	53.4	21.2	35.0	8.1	6.8
Trawl SL3 B	North	Surface	54.2	23.2	35.7	8.2	6.8
		Mid-Depth	54.1	23.1	35.7	8.2	6.8
		Bottom	54.0	23.9	35.6	8.2	6.8
	Middle	Surface	54.1	23.2	35.7	8.2	6.8
		Mid-Depth	54.1	23.2	35.6	8.2	6.7
		Bottom	54.0	23.1	35.6	8.2	6.7
	South	Surface	54.0	23.1	35.6	8.1	6.7
		Mid-Depth	53.9	23.0	35.6	8.1	6.7
		Bottom	54.0	23.1	35.6	8.1	6.7

Transect	Station	Depth	Specific Conductivity (mS/cm)	Water Temp (°C)	Salinity (PSU)	pH	DO (mg/l)
Trawl SL3 C	North	Surface	54.3	23.8	35.8	8.2	6.6
		Mid-Depth	54.3	23.7	35.8	8.2	6.6
		Bottom	54.2	23.5	35.8	8.2	6.5
	Middle	Surface	54.3	23.8	35.3	8.2	6.5
		Mid-Depth	54.3	23.7	35.3	8.2	6.6
		Bottom	54.1	23.1	35.7	8.2	6.6
	South	Surface	54.3	23.8	35.8	8.0	6.5
		Mid-Depth	54.2	23.7	35.8	8.1	6.5
		Bottom	54.1	23.3	35.7	8.1	6.5
Gill Net SL1 A	East	Surface	55.8	23.3	36.9	8.1	7.4
		Mid-Depth	55.7	23.3	36.9	8.2	7.4
		Bottom	55.7	23.2	36.8	8.2	7.3
	Middle	Surface	55.7	23.3	36.9	8.2	7.3
		Mid-Depth	55.7	23.3	36.9	8.2	7.3
		Bottom	55.7	23.0	36.8	8.2	7.2
	West	Surface	55.7	23.3	36.8	8.2	7.2
		Mid-Depth	55.7	23.3	36.8	8.2	7.2
		Bottom	55.7	22.8	36.8	8.2	7.1
Gill Net SL1 B	East	Surface	55.8	23.9	36.9	8.2	7.2
		Mid-Depth	55.7	23.9	37.0	8.2	7.3
		Bottom	55.8	23.9	37.0	8.2	7.3
	Middle	Surface	55.8	23.8	37.0	8.2	7.1
		Mid-Depth	55.7	23.9	37.0	8.2	7.0
		Bottom	55.8	23.9	37.0	8.2	7.0
	West	Surface	55.8	23.8	37.0	8.2	7.0
		Mid-Depth	55.7	23.8	37.0	8.2	6.9
		Bottom	55.7	23.7	36.9	8.2	6.9
Gill Net SL1 C	East	Surface	55.9	24.3	37.1	8.1	6.9
		Mid-Depth	55.9	24.3	37.1	8.1	7.0
		Bottom	55.9	24.4	37.1	8.1	7.1
	Middle	Surface	55.9	24.3	37.1	8.1	7.2
		Mid-Depth	55.9	24.3	37.1	8.1	7.1
		Bottom	55.9	24.3	37.1	8.1	7.2
	West	Surface	55.9	24.3	37.1	8.2	7.1
		Mid-Depth	55.9	24.3	37.1	8.2	7.2
		Bottom	55.9	24.3	37.1	8.2	7.1

Transect	Station	Depth	Specific Conductivity (mS/cm)	Water Temp (°C)	Salinity (PSU)	pH	DO (mg/l)
Gill Net SL2 A	East	Surface	55.4	22.1	35.6	8.1	7.2
		Mid-Depth	55.4	22.1	36.6	8.1	7.2
		Bottom	55.4	21.9	36.5	8.1	7.2
	Middle	Surface	55.2	22.2	36.4	8.1	7.0
		Mid-Depth	55.3	22.9	36.5	8.1	7.1
		Bottom	55.3	22.3	36.5	8.1	7.1
	West	Surface	54.9	23.8	36.3	8.0	6.9
		Mid-Depth	55.0	22.5	36.3	8.1	7.0
		Bottom	55.0	22.4	36.3	8.1	7.0
Gill Net SL2 B	East	Surface	55.9	24.4	37.1	8.0	7.1
		Mid-Depth	55.9	24.2	37.0	8.1	7.0
		Bottom	55.9	24.2	37.1	8.1	7.0
	Middle	Surface	55.9	24.2	37.1	8.1	7.1
		Mid-Depth	56.0	24.2	37.1	8.1	7.0
		Bottom	56.0	24.1	37.1	8.1	6.9
	West	Surface	56.0	24.1	37.1	8.1	7.0
		Mid-Depth	56.0	24.1	37.2	8.1	6.9
		Bottom	56.0	24.1	37.1	8.1	6.9
Gill Net SL2 C	East	Surface	56.1	24.6	37.2	8.1	7.0
		Mid-Depth	56.1	24.6	37.2	8.1	7.0
		Bottom	56.1	24.5	37.2	8.1	6.9
	Middle	Surface	56.1	24.6	37.2	8.1	6.9
		Mid-Depth	56.1	24.6	37.2	8.1	6.8
		Bottom	56.0	24.5	37.2	8.1	6.7
	West	Surface	56.1	24.6	37.2	8.2	6.8
		Mid-Depth	56.1	24.6	37.2	8.2	6.8
		Bottom	56.1	24.5	37.2	8.2	6.8
Gill Net SL3 A	East	Surface	55.7	23.4	36.8	8.0	7.4
		Mid-Depth	55.7	23.2	36.8	8.1	7.5
		Bottom	55.7	23.0	36.8	8.1	7.3
	Middle	Surface	55.7	23.3	36.8	8.1	7.5
		Mid-Depth	55.7	23.2	36.8	8.1	7.3
		Bottom	55.7	23.0	36.8	8.1	7.3
	West	Surface	55.6	23.1	36.8	8.2	7.3
		Mid-Depth	55.7	22.7	36.8	8.2	7.3
		Bottom	55.8	22.5	36.8	8.2	7.3

Transect	Station	Depth	Specific Conductivity (mS/cm)	Water Temp (°C)	Salinity (PSU)	pH	DO (mg/l)
Gill Net SL3 B	East	Surface	55.7	24.1	36.9	8.0	7.2
		Mid-Depth	55.7	23.8	36.9	8.1	7.2
		Bottom	55.7	23.5	36.9	8.1	7.1
	Middle	Surface	55.7	24.0	36.9	8.1	7.2
		Mid-Depth	55.7	23.7	36.9	8.2	7.2
		Bottom	55.8	23.4	36.9	8.2	7.1
	West	Surface	55.7	24.1	36.9	8.2	7.3
		Mid-Depth	55.7	23.7	36.9	8.2	7.2
		Bottom	55.8	23.3	36.9	8.2	7.1
Gill Net SL3 C	East	Surface	56.1	24.8	37.2	8.1	7.3
		Mid-Depth	55.9	24.6	37.2	8.2	7.2
		Bottom	55.9	24.5	37.1	8.2	7.3
	Middle	Surface	55.9	24.8	37.1	8.2	7.2
		Mid-Depth	55.9	24.6	37.1	8.2	7.3
		Bottom	55.9	24.5	37.1	8.2	7.3
	West	Surface	55.9	24.6	37.1	8.2	7.2
		Mid-Depth	55.9	24.5	37.1	8.2	7.2
		Bottom	55.9	24.4	37.0	8.2	7.2

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 12 (December 2014 - February 2015), St. Lucie Plant EPU Biological Study.

Scientific Name	Common Name
Crustaceans	
Acetes americanus	aviu shrimp
Albunea sp.*	mole crabs
*Arenaeus cribrarius**	speckled swimming crab
Callinectes sp.*	swimming crabs
Chlamydopleon dissimile	opossum shrimp
*Emerita talpoida**	Atlantic sand crab
*Farfantepenaeus duorarum**	pink shrimp
*Menippe mercenaria**	Florida stone crab
Mysida	opposum shrimp
Ovalipes sp.	lady crab
Penaeidae*	penaeid shrimp
Plagusia depressa	tidal spray crab
Portunidae	swimming crabs
Portunus gibbesii	iridescent swimming crab
Processa hemphilli	night shrimp
*Rimapenaeus constrictus**	roughneck shrimp
Squilla sp.	mantis shrimp
Synalpheus sp.	snapping shrimp
Xiphopenaeus kroyeri	seabob
Echinoderms	
Mellitidae	sand dollars
Temnopleuroida	sea urchins
Fish and Eggs	
Achiridae	American/scrawled soles
Albula vulpes	bonefish
Anchoa sp.**	anchovy
Anisotremus surinamensis	black margate
Bagre marinus	gafftopsail catfish
Blenniidae	combtooth blennies
Bothus robinsi	twospot flounder

Scientific Name	Common Name
*Brevoortia smithi***	yellowfin menhaden
Brevoortia sp.**	menhadens
Caranx hippos	crevalle jack
Caranx latus	horse-eye jack
Carcharhinus acronotus	blacknose shark
Carcharhinus brevipinna	spinner shark
Chloroscombrus chrysurus	Atlantic bumper
Citharichthys macrops	spotted whiff
Clupeidae**	herrings and sardines
Ctenogobius boleosoma	darter goby
*Cynoscion nothus***	silver seatrout
Cynoscion regalis	gray trout
Echeneis naucrates	sharksucker
Engraulidae**	anchovies
Ginglymostoma cirratum	nurse shark
Gobiidae	gobies
Gobionellus sp.	darter goby
Gymnachirus melas	naked sole
Larimus fasciatus	banded drum
*Leiostomus xanthurus***	spot
Lutjanus synagris	lane snapper
*Menticirrhus littoralis***	Gulf kingfish
Microgobius thalassinus	green goby
*Micropogonias undulatus***	Atlantic croaker
Mugil cephalus	striped mullet
Mustelus canis	smooth dogfish
Myliobatis goodei	southern eagle ray
Ophidion holbrookii	bank cusk eel
*Orthopristis chrysoptera***	pigfish
Ostraciidae	boxfishes/truckfishes
Pleuronectidae	righteyed flounders
Polydactylus virginicus	barbu
*Pomatomus saltatrix***	bluefish
Prionotus carolinus	northern searobin

Scientific Name	Common Name
Rachycentron canadum	cobia
Rhizoprionodon terraenovae	Atlantic sharpnose shark
Sciaenidae	drums and croakers
*Scomberomorus maculatus***	Atlantic spanish mackerel
Selene vomer	lookdown
Serranidae	sea basses and groupers
Sphyrna tiburo	bonnethead shark
Stephanolepis hispida	planehead filefish
Syacium micrurum	channel flounder
Synodus foetens	inshore lizardfish
*Trachinotus carolinus***	Florida pompano
Trachinotus falcatus	permit
Trachinotus goodei	palometa
*Umbrina coroides***	sand drum
Unidentified eggs	unidentified eggs
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 12 (December 2014 - February 2015), St. Lucie Plant EPU Biological Study.

Taxon	SL1			SL2			SL3			Total
	A	B	C	A	B	C	A	B	C	
Crustaceans										
*Rimapenaeus constrictus**	9	2		6		4	2	2	7	32
Acetes americanus		1	7	3	1	2				14
*Arenaeus cribrarius**	1			2						3
*Farfantepenaeus duorarum**	1			2						3
Processa hemphilli	1					1			1	3
Portunus gibbesii	2									2
Synalpheus sp.						2				2
Xiphopenaeus kroyeri	1						1			2
Chlamydopleon dissimile									1	1
Mysida			1							1
Squilla sp.	1									1
Echinoderms										
Mellitidae	33			6			5			44
Temnopleuroida								1		1
Fish										
*Umbrina coroides***	1						14			15
Anchoa sp.**	2	1	9							12
Ophidion holbrookii								3	1	4
Larimus fasciatus				1					1	2
Lutjanus synagris	2									2
Bothus robinsi					1					1

Taxon	SL1			SL2			SL3			Total
	A	B	C	A	B	C	A	B	C	
Chloroscombrus chrysurus				1						1
Citharichthys macrops				1						1
*Cynoscion nothus***									1	1
Cynoscion regalis									1	1
Gymnachirus melas								1		1
*Leiostomus xanthurus***				1						1
*Micropogonias undulatus***			1							1
Myliobatis goodei						1				1
Prionotus carolinus						1				1
Selene vomer							1			1
Syacium micrurum									1	1
Synodus foetens				1						1
Grand Total	**54**	**4**	**18**	**24**	**2**	**11**	**23**	**7**	**14**	**157**

*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 12 (December 2014 - February 2015), 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**	17.89	2.39		8.84		6.26	2.31	2.49	9.65	**4.79**
Acetes americanus		1.20	9.24	4.42	1.14	3.13				**2.09**
*Arenaeus cribrarius**	1.99			2.95						**0.45**
*Farfantepenaeus duorarum**	1.99			2.95						**0.45**
Processa hemphilli	1.99					1.57			1.38	**0.45**
Portunus gibbesii	3.98									**0.30**
Synalpheus sp.						3.13				**0.30**
Xiphopenaeus kroyeri	1.99						1.16			**0.30**
Chlamydopleon dissimile									1.38	**0.15**
Mysida			1.32							**0.15**
Squilla sp.	1.99									**0.15**
Echinoderms										
Mellitidae	65.61			8.84			5.78			**6.58**
Temnopleuroida								1.25		**0.15**
Fish										
*Umbrina coroides***	1.99						16.17			**2.24**
Anchoa sp.**	3.98	1.20	11.88							**1.80**
Ophidion holbrookii								3.74	1.38	**0.60**
Larimus fasciatus				1.47					1.38	**0.30**
Lutjanus synagris	3.98									**0.30**

Taxon	SL1			SL2			SL3			Total
	A	B	C	A	B	C	A	B	C	
Bothus robinsi					1.14					**0.15**
Chloroscombrus chrysurus				1.47						**0.15**
Citharichthys macrops				1.47						**0.15**
*Cynoscion nothus***									1.38	**0.15**
Cynoscion regalis									1.38	**0.15**
Gymnachirus melas								1.25		**0.15**
*Leiostomus xanthurus***				1.47						**0.15**
*Micropogonias undulatus***			1.32							**0.15**
Myliobatis goodei						1.57				**0.15**
Prionotus carolinus						1.57				**0.15**
Selene vomer							1.16			**0.15**
Syacium micrurum									1.38	**0.15**
Synodus foetens				1.47						**0.15**
Grand Total	**107.36**	**4.79**	**23.76**	**35.35**	**2.28**	**17.22**	**26.57**	**8.73**	**19.30**	**23.49**

*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 12 (December 2014 - February 2015), St. Lucie Plant EPU Biological Study.

Taxon	SL1			SL2			SL3			Total
	A	B	C	A	B	C	A	B	C	
Crustaceans										
Ovalipes sp.									1	**1**
Fish										
Rhizoprionodon terraenovae		15	2			8		22		**47**
Sphyrna tiburo		2					1	10		**13**
Caranx latus		3			2	3	1	3		**12**
*Scomberomorus maculatus**								10		**10**
Bagre marinus		2			1			6		**9**
*Pomatomus saltatrix**							8	1		**9**
*Brevoortia smithi**		4								**4**
Caranx hippos		4								**4**
Carcharhinus acronotus		2						1		**3**
*Micropogonias undulatus**		1						2		**3**
Mustelus canis		3								**3**
Carcharhinus brevipinna		1						1		**2**
Echeneis naucrates		1						1		**2**
*Orthopristis chrysoptera**	1						1			**2**
Albula vulpes							1			**1**
Citharichthys macrops		1								**1**
Ginglymostoma cirratum		1								**1**
Lutjanus synagris	1									**1**
Rachycentron canadum								1		**1**
Grand Total	**2**	**40**	**2**	**0**	**3**	**11**	**12**	**58**	**1**	**129**

*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 12 (December 2014 - February 2015), St. Lucie Plant EPU Biological Study. (Note: Totals in the right column represent the numbers of individuals captured per hour for all nine transects.)

Taxon	SL1			SL2			SL3			Total
	A	B	C	A	B	C	A	B	C	
Crustaceans										
Ovalipes sp.									1.58	**0.16**
Fish										
Rhizoprionodon terraenovae		15.25	3.08			11.43		25.38		**7.42**
Sphyrna tiburo		2.03					1.46	11.54		**2.05**
Caranx latus		3.05			3.43	4.29	1.46	3.46		**1.89**
*Scomberomorus maculatus**								11.54		**1.58**
Bagre marinus		2.03			1.71			6.92		**1.42**
*Pomatomus saltatrix**							11.71	1.15		**1.42**
*Brevoortia smithi**		4.07								**0.63**
Caranx hippos		4.07								**0.63**
Carcharhinus acronotus		2.03						1.15		**0.47**
*Micropogonias undulatus**		1.02						2.31		**0.47**
Mustelus canis		3.05								**0.47**
Carcharhinus brevipinna		1.02						1.15		**0.32**
Echeneis naucrates		1.02						1.15		**0.32**
*Orthopristis chrysoptera**	1.50						1.46			**0.32**
Albula vulpes							1.46			**0.16**
Citharichthys macrops		1.02								**0.16**
Ginglymostoma cirratum		1.02								**0.16**
Lutjanus synagris	1.50									**0.16**
Rachycentron canadum								1.15		**0.16**
Grand Total	**3.00**	**40.68**	**3.08**	**0.00**	**5.14**	**15.71**	**17.56**	**66.92**	**1.58**	**20.37**

*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 12 (December 2014 - February 2015), St. Lucie Plant EPU Biological Study.

Taxa	SL1			SL2			SL3			Total
	A	B	C	A	B	C	A	B	C	
Crustaceans										
Plagusia depressa						1				**1**
Fish										
Trachinotus falcatus	4	3	1	1		12	1		3	**25**
*Menticirrhus littoralis***		1	1				6		2	**10**
Trachinotus goodei				3		2		2	1	**8**
Chloroscombrus chrysurus							1		4	**5**
Polydactylus virginicus						3				**3**
Selene vomer							2		1	**3**
Stephanolepis hispida		2								**2**
Albula vulpes				1						**1**
Anisotremus surinamensis							1			**1**
Caranx hippos		1								**1**
Carcharhinus brevipinna					1					**1**
Mugil cephalus								1		**1**
*Scomberomorus maculatus***							1			**1**
*Trachinotus carolinus***							1			**1**
Grand Total	**4**	**7**	**2**	**5**	**1**	**18**	**13**	**3**	**11**	**64**

**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 12 (December 2014 - February 2015), 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
Menticirrhus littoralis	91.4	8.0	10	10								
Scomberomorus maculatus	364.0	226.5	1	1	539.5	848.5	10	10				
Trachinotus carolinus	99.9	14.1	1	1								
Pomatomus saltatrix					443.8	863.3	9	9				
Brevoortia smithi					343.0	496.3	4	4				
Micropogonias undulatus					306.7	345.0	3	3	191.0	71.4	1	1
Orthopristis chrysoptera					244.5	227.5	2	2				
Umbrina coroides									69.3	4.3	15	15
Anchoa sp.									36.5	0.2	12	12
Cynoscion nothus									221.0	117.2	1	1
Leiostomus xanthurus									189.0	81.8	1	1

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 12 (December 2014 - February 2015), 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 sp.*	Zoea		0.20			0.04		**0.048**
Callinectes sp.*	Megalops			0.02	0.02	0.15	0.04	**0.038**
*Emerita talpoida**	Zoea		0.10		0.03		0.04	**0.034**
Albunea sp.*	Zoea				0.10			**0.021**
*Menippe mercenaria**	Zoea		0.07					**0.014**
Penaeidae*	Post Larvae						0.08	**0.014**
Portunidae*	Juvenile				0.03	0.02		**0.010**
*Menippe mercenaria**	Megalops					0.02		**0.003**
Fish Eggs								
Unidentified eggs	Egg	0.52	3.63	1.64	0.43	6.02	4.12	**2.777**
Clupeidae**	Egg	1.06	1.83	0.23	0.03	3.85	1.45	**1.385**
Fish								
Engraulidae**	Post Yolk-Sac Larvae					0.07		**0.010**
Gobiidae	Post Yolk-Sac Larvae					0.07		**0.010**
Blenniidae	Post Yolk-Sac Larvae					0.02	0.02	**0.007**
Unidentified fish - damaged	Post Yolk-Sac Larvae				0.02	0.02		**0.007**
Achiridae	Post Yolk-Sac Larvae				0.02			**0.003**
Brevoortia sp.**	Post Yolk-Sac Larvae				0.02			**0.003**
Clupeidae**	Post Yolk-Sac Larvae					0.02		**0.003**

Taxa	LifeStage	SL1		SL2		SL3		Total
		A	C	A	C	A	C	
Ctenogobius boleosoma	Post Yolk-Sac Larvae					0.02		**0.003**
Gobionellus sp.	Post Yolk-Sac Larvae			0.02				**0.003**
Microgobius thalassinus	Post Yolk-Sac Larvae				0.02			**0.003**
Ostraciidae	Post Yolk-Sac Larvae	0.03						**0.003**
Pleuronectidae	Post Yolk-Sac Larvae				0.02			**0.003**
Sciaenidae	Post Yolk-Sac Larvae					0.02		**0.003**
Serranidae	Post Yolk-Sac Larvae						0.02	**0.003**
Stephanolepis hispida	Post Yolk-Sac Larvae		0.02					**0.003**
Grand Total		**1.606**	**5.847**	**1.909**	**0.733**	**10.348**	**5.776**	**4.416**

*Commercially and recreationally important (CRI)

**Representative Important Species (RIS)

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 12 (December 2014 - February 2015), 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	2	1	0	0	0