3.20 PCL Indian River Lagoon Artificial Reef

- Location: Indian River Lagoon
- Materials: Concrete, steel
- Maximum Depth: 17 feet
- Reef High Point: 8 feet
- Year Created: 2007
- Monitoring Date: 10/21/2009

3.20.1 History of the PCL Indian River Lagoon Artificial Reef

Between November 2006 and January 2007, approximately 4,400 tons of steel and concrete rubble were placed into a large scour hole in the Indian River Lagoon just west of Hutchinson Island. The 2.5 acre scour hole was created during construction of the Stuart causeway/bridge and was up to 17 feet deep in places. The materials came from the decommissioned Ernest Lyons draw bridge that spanned the Indian River Lagoon between Sewalls Point and Hutchinson Island. The new reef was named for the construction company that built the new bridge, demolished the old bridge and built the new reef, covering all costs for the new reef construction. This is the first time such an artificial reef has been constructed within an estuary in Martin County.

Figure 37. Aerial photo of Indian River Lagoon and South Hutchinson Island, showing approximate location of PCL IRL artificial reef, outlined in red.

3.20.2 Structural Summary

The materials deployed varied in size and included concrete pilings, broken rubble, concrete slabs, steel pipe, steel plates and grating, sidewalk guardrails, and Jersey barriers. The maximum profile above the lagoon bottom is 8 feet with a nominal average of 4 feet, providing a minimum clearance of 6 feet at mean low water between the reef summit and the surface. Any reef projections that were deemed too close to the surface were pulled over by divers or heavy equipment to provide at least six feet of clearance. Hydro Engineering & Mapping, Inc performed both pre and post construction bathymetric surveys to verify that the finished reef conformed to US Army Corps of Engineers permit requirements.

3.20.3 Biological Survey Results

Jacks and grunts represented the most numerous species of fishes, although lane snappers, sheepshead and puffers were quite numerous. Plant and invertebrate diversity was noted and included red, brown and green algas, barnacles, hydroids, sea anemones, arrow, blue and hermit crabs, Caribbean spiny lobsters, sea cucumbers, urchins and encrusting sponges. Poor visibility prohibited video and still photogrpahy. Table 25 presents the fish species observed during monitoring.

Family/ Common Name	Species	2009	
		Abundance	Size
Elasmobranchs			
Southern stingray	*Dasyatis americana*	F	J
Spotted eagle ray	*Aetobatus narinari*	S	J
Synodontidae			
Inshore lizardfish	*Synodus foetens*	S	J
Serranidae			
Gag grouper	*Mycteroperca microlepis*	F	J
Carangidae			
Atlantic bumper	*Chloroscombus chrysurus*	F	A
Crevalle jack	*Caranx hippos*	F	A
Lookdown	*Selene vomer*	S	J
Lutjanidae			
Lane snapper	*Lutjanus synagris*	M	J
Haemulidae			
Porkfish	*Anisotremus virginicus*	F	J
Tomtate	*Haemulon aurolineatum*	A	J
Sparidae			
Sheepshead	*Archosargus probatocephalus*	A	A, J
Sciaenidae			
Cubbyu	*Equetus umbrosus*	F	J
Ephippidae			
Atlantic spadefish	*Chaetodipterus faber*	F	A
Pomacanthidae			
French angelfish	*Pomacanthus paru*	F	J
Bothidae			
Southern flounder	*Paralichthys lethostigma*	F	A/J
Tetraodontidae			
Bandtail puffer	*Sphoeroides spengleri*	A	A,J
	Total	**16**	

Abundance Key: S=single, F=few (2-10), M=many (11-100), A=abundant (>100)
Size Key: A=adult, J=juvenile, A/J=intermediate

Table 25. PCL Indian River Lagoon Artificial Reef fish species census.