

5.2 The Heap Artificial Reef

- Location: South County Reef
- Materials: Concrete – culverts, lamp posts, chunks, misc.
- Maximum Depth: 64 feet
- Reef High Point: 60 feet
- Year Created: 2007
- Monitoring Date: 9/10/2010
- Total Cost: \$14,601.50 (FWC 69% and Martin County 31%)

5.2.1 History of the Heap Artificial Reef

Nearly 2,000 tons of large concrete and steel construction waste was delivered to Harbour Pointe Park in Ft. Pierce in 2007 and early 2008 and stockpiled prior to deployment offshore of Martin County. In June 2008, the stockpiled material was shipped to the South County Artificial Reef area in three separate barge loads where one half of each barge load of material was deployed on each of the six South County Artificial Reef sites. A total of 268 tons (½ barge load) of these materials were dropped in the southwest corner of the reef area from the anchored barge to form The Heap artificial reef. The material and deployment of the material used to create this reef was funded by the FWC and Martin County for the amount of \$14,601.50. Figure 9 shows a chart with the location of The Heap.

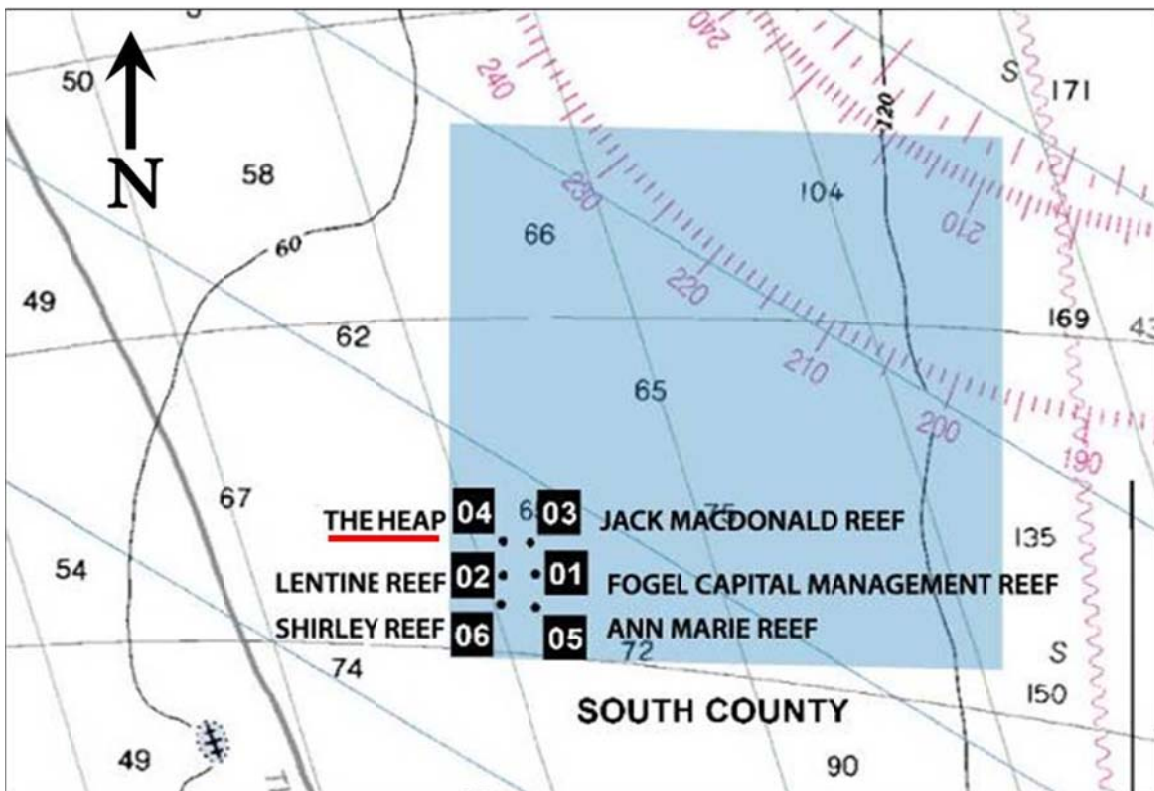


Figure 9. Chart view of The Heap in the South County Artificial Reef area.

5.2.2 Structural Summary

The maximum depth at this artificial reef site is about 64 feet with a maximum relief of about 4 feet. The footprint of the site is generally round with an irregular margin and occupies about 0.4 acres of seafloor. The deployment barge was securely moored at two points when the reef materials were deployed, this particular barge load had many smaller pieces than others and much scattering of the materials occurred resulting in a lower profile reef site. Many low profile concrete slabs were deployed here as well. The seafloor at this site is comprised of a shell/sand mixture and appears to have provided a marginally solid base for the heavy concrete and steel pieces. More scouring has occurred at this site, up to 3 feet, typically between 1 to 2 feet; therefore the overall profile is the lowest of the six South County artificial reef sites. The photographs in Figure 10 are from the monitoring dive and show general conditions of the reef and some of the species observed during the dive.



Figure 10. The Heap Artificial Reef 2010 photographs.

Identification of species in the photographs shown above in clockwise order from the upper-left photograph are (1) tomtates and ocean trigger fish, (2) juvenile black grouper and beaugregory, (3) lionfish, and (4) sheepshead.

5.2.3 Biological Survey Results

Fish surveys indicate and observed 27 species a diverse assemblage of fishes; 2010 was the second year of monitoring since deployment. Jacks, snappers, grunts and damselfish represented the most numerous species of fishes. As at most of the South County artificial reef sites, vast

schools of adult round scad were observed around and above the reef crest. Plants and invertebrates observed on the artificial reef included red, brown, green and sargassum algae, hydroids, tunicates, sea anemones, sea urchins, sea stars, sea cucumbers, arrow crabs, spiny lobsters, hermit crabs, rock snails, and encrusting sponges. Table 8 presents the fish species observed during 2010 and Table 9 presents the benthic species observed.

Table 8. The Heap Artificial Reef fish species census.

Family / Common Name	Species	2010	
		Abundance	Size
Acanthuridae			
Doctorfish	<i>Acanthurus chirurgus</i>	F	A
Apogonidae			
Twospot cardinalfish	<i>Apogon pseudomaculatus</i>	F	A
Balistidae			
Ocean triggerfish	<i>Canthidermis sufflamen</i>	M	A
Carangidae			
Amber jack	<i>Seriola dumerili</i>	M	J & A
Round scad	<i>Decapterus punctatus</i>	A	A
Centropomidae			
Common snook	<i>Centropomus undecimalis</i>	F	A
Haemulidae			
Black margate	<i>Anisotremus surinamensis</i>	F	A
Porkfish	<i>Anisotremus virginicus</i>	F	A
Tomtate	<i>Haemulon aurolineatum</i>	A	J & A
Labridae			
Bluehead wrasse	<i>Thalassoma bifasciatum</i>	M	J & A
Spanish hogfish	<i>Bodianus rufus</i>	S	J
Spotfin hogfish	<i>Bodianus pulchellus</i>	S	J
Lutjanidae			
Gray snapper	<i>Lutjanus griseus</i>	M	J & A
Lane snapper	<i>Lutjanus synagris</i>	F	A
Yellowtail snapper	<i>Ocyurus chrysurus</i>	F	J
Pomacanthidae			
Queen angelfish	<i>Holocanthus ciliaris</i>	S	J
Pomacentridae			
Beaugregory	<i>Pomacentrus leucostictus</i>	M	J & A
Blue chromis	<i>Chromis cyaneus</i>	S	A
Sergeant major	<i>Abudefduf saxatilis</i>	F	J & A
Yellowtail reeffish	<i>Chromis enchrysurus</i>	M	J & A
Sciaenidae			
Cubby	<i>Equetus umbrosus</i>	F	J & A
Scorpaenidae			
Red Lionfish	<i>Pterois volitans</i>	F (3)	A(2), J(1)
Spotted scorpionfish	<i>Scorpaena plumeiri</i>	S	A
Serranidae			
Belted sandfish	<i>Serranus subligarius</i>	F	J & A
Goliath grouper	<i>Epinephelus itajara</i>	S	A

Scamp	<i>Mycteroperca phenax</i>	F	J
Sparidae			
Sheepshead porgy	<i>Calamus penna</i>	F	A
	Total	27	

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 9. The Heap Artificial Reef benthic species census.

	Common Name	Scientific Name
Echinoderms	Rock Boring Urchin	<i>Echinometra lucunter</i>
Cnidarians	Algae Hydroid Hydroids	<i>Thyroscyphus ramosus</i> Unidentified species
Ascidians	Overgrowing Tunicates Mottled Encrusting Tunicate Giant Tunicates	<i>Didemnidae</i> <i>Distaplia bermudensis</i> <i>Polycarpa spongiabilis</i>
Poriferans	Encrusting Sponge Brown Variable Sponge White Lumpy Sponge	Unidentified species <i>Anthosigmella varians</i> <i>Ptilocaulis sp.</i>