

## 5.2 PIRATE'S COVE REEF

- Location: Sirotkin Reef
- Materials: Baffle boxes, pipe sections, bridge railings, culverts, slabs and pillings (all concrete)
- Maximum Depth: 189 feet
- Reef High Point: 174 feet
- Year Created: 2009
- Monitoring Date: 10/01/2011
- Total Cost: \$21,125 (FWC & Martin County)

### 5.2.1 History of the Pirate's Cove Reef

In the fall of 2008 the FWC awarded a \$62,068 grant to Martin County's Engineering Department. Materials of opportunity were collected and stored until summer of 2009. Three bargeloads of material, approximately 500 tons each, were deployed on the Sirotkin site to create 3 new reefs. One of these reefs was the Pirate's Cove reef (Figure 7). The funds allocated specifically for the Pirate's Cove Reef from the FWC grant in addition to monies from Martin County totaled \$21,125. On August 24, 2009 the Pirates Cove Reef was built successfully in 187 ft of water and since has become another fine deepwater artificial reef offshore Martin County, Florida. On Sept. 8, 2010 a large steel sign with concrete bases was placed on the reef with the name Pirate's Cove Reef.

Pirate's Cove Resort & Marina is a locally operated facility in the Manatee Pocket section of Port Salerno, Florida. Many of the guests at the resort and sport fishing fleet in the marina have fished the waters of Martin County for decades. Figure 7 shows a chart with the location of the Pirate's Cove Reef.

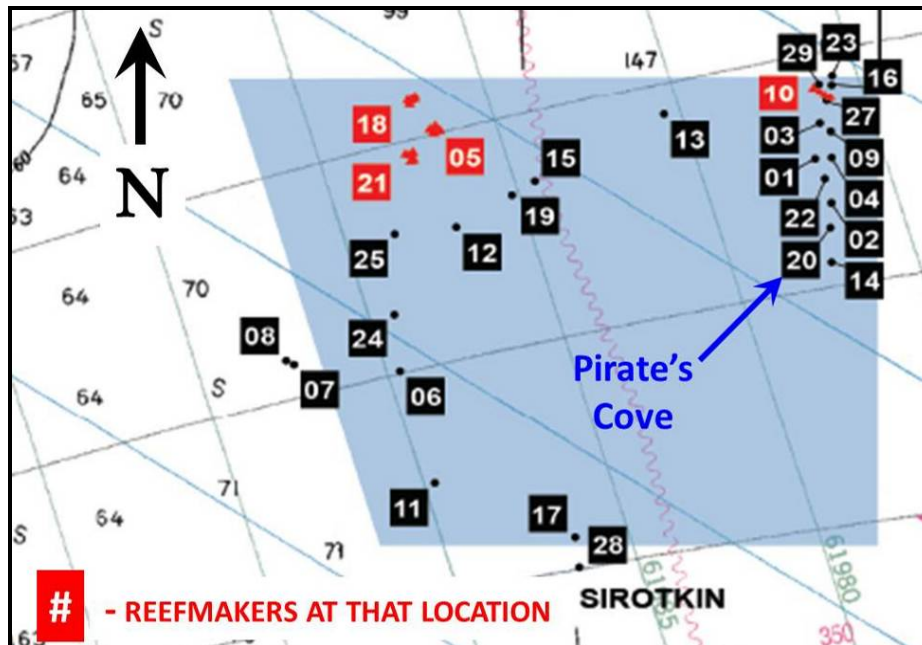


Figure 7. Chart view of the Sirotkin Reef showing the Pirate's Cove Reef location.

## 5.2.2 Structural Summary

During the 2011 monitoring no major changes were observed to have occurred since the 2010 monitoring. Baffle boxes are still stacked on top of each other providing a high profile of 15 ft. No major scouring exists at the site and materials are still in a tight grouping. As opposed to the shallower artificial reefs that can be effected by large ocean swells and seasonal sediment shifting, the deep water sites seem to only be effected by hurricanes with very large (>3 meter) long period swells. Since the construction of the artificial reef in 2009 no major hurricanes have hit the area. The photograph in Figure 8 shows the general condition of some of the materials observed during the monitoring dive of Pirate's Cove Reef.



Figure 8. Pirate's Cove Artificial Reef 2011 photograph.

## 5.2.3 Biological Survey Results

During the 2011 monitoring 10 fish species were identified. Three species observed that are specific to deepwater sites were snowy grouper, red barbier, and banks butterflyfish. The notable sport fish at this site were: gag grouper, black sea bass, and greater amberjack. As is often seen on the deeper than 130 ft deep sites less total species are documented but more quantities of each species is evident. The deeper sites still have 100's to 1000's of individual fish just less species diversification than at the shallower artificial reef sites. Table 10 and Table 11 list the species/taxa, the relative abundance and size class (adult, intermediate, and juvenile) observed during the monitoring dive.

Table 10. Pirate's Cove Artificial Reef Fish Species Census.

Family/ Common Name	Species	2011	
		Abundance	Size
<b>Carangidae</b>			
Greater Amberjack	<i>Seriola dumerili</i>	M	A
<b>Chaetodontidae</b>			
Banks butterflyfish	<i>Chaetodon aya</i>	F	A
<b>Pomacentridae</b>			
Yellowtail reeffish	<i>Chromis enchrysurus</i>	M	J & A
<b>Balistidae</b>			
Ocean Triggerfish	<i>Canthidermis maculata</i>	S	A
<b>Serranidae</b>			
Bank sea bass	<i>Centropristis ocyurus</i>	F	J & A
Black sea bass	<i>Centropristis striata</i>	M	J & A
Snowy grouper	<i>Epinephelus niveatus</i>	F	J & A
Red Barbier	<i>Hemanthias vivanus</i>	F	A
Gag grouper	<i>Mycteroperca microlepis</i>	F	A
<b>Sparidae</b>			
Sheepshead porgy	<i>Calamus penna</i>	M	A
	<b>Total</b>	<b>10</b>	

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 11. Pirate's Cove Artificial Reef Benthic Species Census.

	Common Name	Scientific Name
<b>Echinoderms</b>	Rock Boring Urchin	<i>Echinometra lucunter</i>
	3 Rowed Sea Cucumber	<i>Isostichopus badiionotus</i>
	Common Arbacia Urchin	<i>Arbacia punctulata</i>
<b>Cnidarians</b>	Sea Anemones	<i>Aptasia sp.</i>
	Hydroids	Unidentified species
<b>Ascidians</b>	Overgrowing Tunicates	<i>Didemnidae</i>
	Giant Tunicates	<i>Polycarpa spongiabilis</i>
<b>Crustaceans</b>	Yellowline Arrow Crab	<i>Stenorhynchus seticornis</i>
<b>Mollusca</b>	Rock Snails	<i>Muricidae</i> (Unidentified Species)
<b>Ectoprocta</b>	Encrusting Bryozoans	Unidentified Species

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	<b>Common Name</b>	<b>Scientific Name</b>
<b>Porifera</b>	Star Encrusting Sponge	<i>Halisarca sp.</i>
	Orange Encrusting Sponge	<i>Ulosa ruetzleri</i>
<b>Anthozoa</b>	Gorgonians	
<b>Phaeophyta</b>	Brown Algae	<i>Sargassum natans</i>
	Several Unidentified Algal Species (Green and Brown)	

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