

urchins, barnacles, sea cucumbers, arrow crabs, hermit crabs and encrusting sponges. Table 23 presents the fish species observed during 2009.

Family/ Common Name	Species	2009	
		Abundance	Size
<b>Muraenidae</b>			
Spotted moray	<i>Gymnothorax moringa</i>	S	A
<b>Serranidae</b>			
Bank seabass	<i>Centropristis ocyurus</i>	F	A
Black seabass	<i>Centropristis striata</i>	M	A,J
<b>Apogonidae</b>			
Twospot cardinalfish	<i>Apogon pseudomaculatus</i>	M	A,J
<b>Carangidae</b>			
Amberjack	<i>Seriola dumerili</i>	M	A
Blue runner	<i>Caranx chrysos</i>	A	A
Round scad	<i>Decapterus punctatus</i>	A	A
<b>Lutjanidae</b>			
Lane snapper	<i>Lutjanus synagris</i>	F	A
Vermillion snapper	<i>Rhomboplites aurorubens</i>	M	A
Yellowtail snapper	<i>Ocyurus chrysurus</i>	F	A
<b>Haemulidae</b>			
Tomtate	<i>Haemulon aurolineatum</i>	A	A,J
<b>Sparidae</b>			
Sheepshead porgy	<i>Calamus penna</i>	M	A
<b>Sciaenidae</b>			
Cubbyu	<i>Equetus umbrosus</i>	M	A,J
<b>Mullidae</b>			
Yellow goatfish	<i>Mulloidichthys martinicus</i>	F	A
<b>Chaetodontidae</b>			
Reef butterflyfish	<i>Chaetodon sedentarius</i>	F	A
<b>Pomacentridae</b>			
Beaugregory	<i>Pomacentrus leucostictus</i>	M	A,J
Blue chromis	<i>Chromis cyaneus</i>	M	A,J
Yellowtail reeffish	<i>Chromis enchrysurus</i>	A	A,J
<b>Labridae</b>			
Clown wrasse	<i>Halichoeres maculipinna</i>	S	A
Slippery dick	<i>Halichoeres bivittatus</i>	M	A,J
<b>Opistognathidae</b>			
Moustache jawfish	<i>Opistognathus lonchurus</i>	S	A
<b>Tetraodontidae</b>			
Bandtail puffer	<i>Spherooides spengleri</i>	F	A,J
Sharpnose puffer	<i>Canthigaster rostrata</i>	F	A,J
	<b>Total</b>	<b>23</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 23. Lentine Artificial Reef fish species census.**

### 3.19 Ann Marie Artificial Reef

- Location: South County Reef
- Materials: Concrete
- Maximum Depth: 67 feet

- Reef High Point: 59 feet
- Year Created: 2007
- Monitoring Date: 8/31/2009

### 3.19.1 History of the Ann Marie 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, it was loaded on barges and shipped to the South County Artificial Reef area. A total of 260 tons of these materials were dropped in the southwest corner of the reef area from the anchored barge to form the Ann Marie Artificial Reef.



**Figure 36. Ann Marie Artificial Reef 2008 and 2009 photographs.**

### 3.19.2 Structural Summary

The maximum depth at this artificial reef site is about 67 feet with a maximum relief of about 8 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 dropped and the large concrete components settled in a single pile, although a few pieces settled to the bottom a short distance from the reef pile. Several large culvert sections provide cavernous recesses that are used extensively by large and small fish alike. The seafloor at this site is comprised of a shell/coarse sand mixture and appears to provide a solid base for the

heavy concrete and steel pieces, as scouring is not significant. Figure 31 shows a chart with the location of the Ann Marie Reef.

### 3.19.3 Biological Survey Results

Fish surveys indicate a diverse assemblage of fishes, although 2009 was only the first year of monitoring since deployment. Seabasses and grunts represented the most numerous species, although jacks were abundant due to the vast schools of adult and juvenile round scad observed around and above the reef crest. Plants and invertebrates observed on the artificial reef included red, brown and green algae, hydroids, sea anemones, sea urchins, barnacles, sea cucumbers, arrow crabs, hermit crabs and encrusting sponges. Table 24 presents the fish species observed during 2009.

Family/ Common Name	Species	2009	
		Abundance	Size
<b>Elasmobranchs</b>			
Spotted eagle ray	<i>Aetobatus narinari</i>	S	A
<b>Centropomidae</b>			
Common snook	<i>Centropomus undecimalis</i>	F	A
<b>Serranidae</b>			
Black seabass	<i>Centropristis striata</i>	M	A,J
Goliath grouper	<i>Epinephelus itajara</i>	F	A
Scamp	<i>Mycteroperca phenax</i>	F	A/J
Snowy grouper	<i>Epinephelus niveatus</i>	S	J
Tobaccofish	<i>Serranus tabacarius</i>	S	A
<b>Carangidae</b>			
Amberjack	<i>Seriola dumerili</i>	F	A
Round scad	<i>Decapterus punctatus</i>	A	A
<b>Lutjanidae</b>			
Gray snapper	<i>Lutjanus griseus</i>	F	A,J
Yellowtail snapper	<i>Ocyurus chrysurus</i>	F	J
<b>Haemulidae</b>			
Porkfish	<i>Anisotremus virginicus</i>	F	A,J
Tomtate	<i>Haemulon aurolineatum</i>	M	A,J
White margate	<i>Haemulon album</i>	F	A,J
<b>Sparidae</b>			
Sheepshead	<i>Archosargus probatocephalus</i>	F	A,J
Sheepshead porgy	<i>Calamus penna</i>	F	A,J
<b>Sciaenidae</b>			
Cubby	<i>Equetus umbrosus</i>	M	A,J
<b>Pomacentridae</b>			
Beaugregory	<i>Pomacentrus leucostictus</i>	F	A,J
<b>Scorpaenidae</b>			
Spotted scorpionfish	<i>Scorpaena plumeiri</i>	S	A
<b>Balistidae</b>			
Gray triggerfish	<i>Balistes capriscus</i>	F	A
<b>Tetraodontidae</b>			
Sharpnose puffer	<i>Canthigaster rostrata</i>	S	A
<b>Total</b>		<b>21</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 24. Ann Marie Artificial Reef fish species census.**