

5.4 Reefmaker Inlet Barge

- Location: Donaldson Reef
- Materials: Concrete, steel
- Maximum Depth: 55 feet
- Reef High Point: 46 feet
- Year Created: 2005
- Monitoring Date: 12/17/2010
- Total Cost: \$3,180 (FWC 89% and Martin County 11%)

5.4.1 History of the Reefmaker Inlet Barge Artificial Reef

In 2005 Martin County received a \$47,700 grant from FWC to enhance existing artificial reef sites by deploying sixty Reefmaker “Florida Special” units adjacent to existing reef materials in the Donaldson and Sirotkin reef sites. These modules are large three-sided pyramids fabricated using concrete and steel. Four of the Reefmaker artificial reef modules were deployed within the Donaldson Reef Site around the four sides of the Inlet Barge for \$3,180 from the FWC grant and monies from Martin County.

The Inlet Barge was deployed in the 1980’s. It was noticed that some of the older barges deployed in the 1970’s and 1980’s were partially collapsed and settled deeply into the sand substrate. It was expected that by placing the four Reefmaker Units around the Inlet barge as well as other sites would result in increased complexity and biodiversity at the artificial reef sites. Figure 13 shows the location of the Reefmaker Inlet Barge (near the center of the map) in the Donaldson Artificial Reef area.

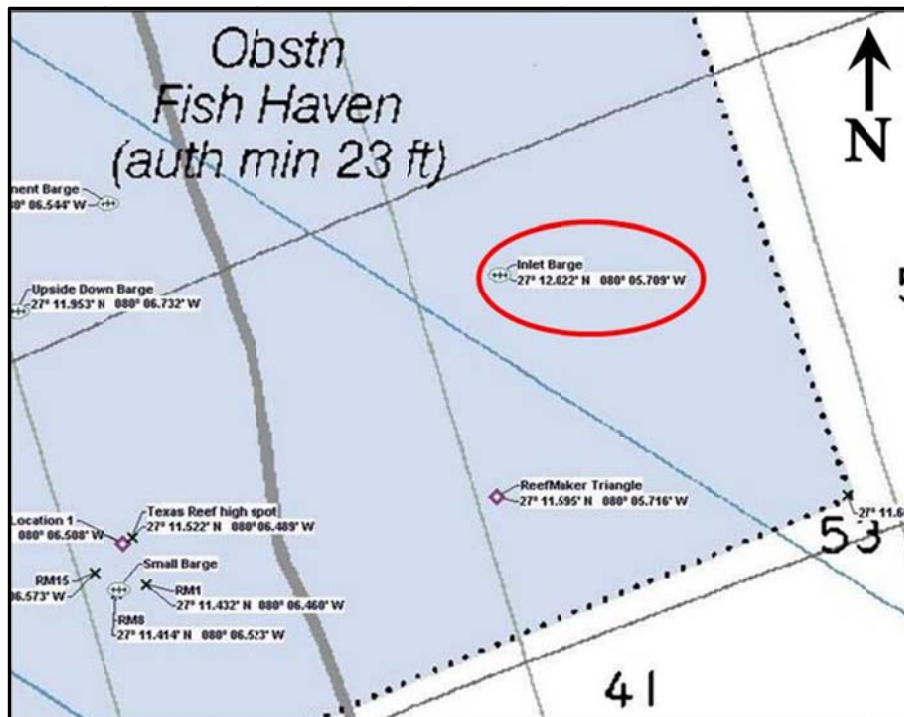


Figure 13. Donaldson Reef site showing the Reefmaker Inlet Barge location.

5.4.2 Structural Summary

Underwater measurements at each of the four units were performed; minimal settling of 1 ft has occurred and is typical of other Reefmaker Unit sites deployed by Martin County. The bases of all the units were buried resulting in increased stability. Figure 14 shows representative photographs of the Reefmaker units at the Inlet Barge site. All four of the Reefmaker units are intact and standing upright. Some of the steel bars near the base of the units have eroded/corroded through with some section loss evident as shown in the photographs of the Reefmaker steel damage; over time this erosion/corrosion is expected to worsen. In addition to showing the conditions of the reef, the photographs in Figure 14 show some of the species observed during the monitoring dive.

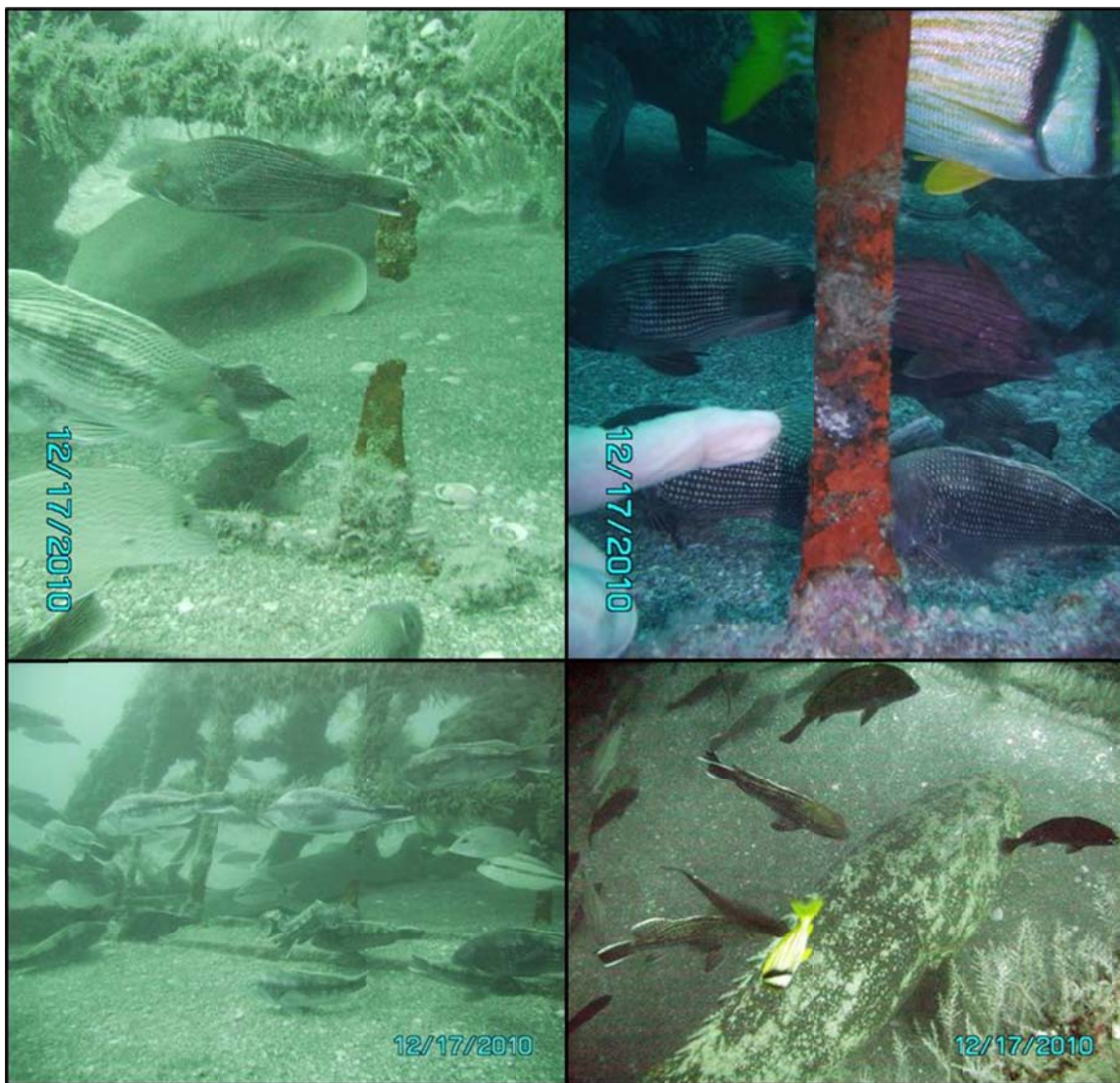


Figure 14. Reefmaker Inlet Barge Artificial Reef photographs from 2010.

Identification of species in the photographs shown above in clockwise order from the upper-left photograph are (1) black seabass & nurse shark, (2) goliath grouper, porkfish, black seabass, and cubbyu, (3) goliath grouper, porkfish, and black seabass, and (4) black seabass and tomtates.

5.4.3 Biological Survey Results

Fish surveys indicate an increasing trend in species diversity since 2005 and identified a total of 11 species. During the survey large schools of atlantic silversides (1½ to 2 in. long) and unidentified fry (¼ in. long) were observed above and around the reef site. Benthic species observed on and around the Reefmaker Units included sea urchins, encrusting sponges, barnacles and hydroids. Table 12 and Table 13 present the fish and benthic species observed during 2010.

Table 12. Reefmaker Inlet Barge Artificial Reef fish species census.

Family/Common Name	Species	2010	
		Abundance	Size
Serranidae			
Gag grouper	<i>Mycteroperca microlepis</i>	F	J
Goliath grouper	<i>Epinephelus itajara</i>	S	A
Whitespotted soapfish	<i>Rypticus maculatus</i>	F	A
Scorpaenidae			
Spotted scorpionfish	<i>Scorpaena plumeiri</i>	S	J/A
Atherinopsidae			
Atlantic Silverside	<i>Menidia menidia</i>	A	J & A
Sparidae			
Sheepshead porgy	<i>Calamus penna</i>	F	A
Haemulidae			
Porkfish	<i>Anisotremus virginicus</i>	M	J & A
Tomtate	<i>Haemulon aurolineatum</i>	A	J & A
Black margate	<i>Anisotremus surinamensis</i>	F	A
Sciaenidae			
Cubbyu	<i>Equetus umbrosus</i>	M	A
Centropomidae			
Common snook	<i>Centropomus undecimalis</i>	F	A
	Total	11	

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 13. Reefmaker Inlet Barge Artificial Reef benthic species census.

	Common Name	Scientific Name
Echinoderms	Common arbacia sea urchin	<i>Arbacia punctulata</i>
Cnidarians	Algae Hydroid Hydroids	<i>Thyroscyphus ramosus</i> Unidentified species
Crustaceans	Sessile barnacles	<i>Balanus trigonus</i>
Poriferans	Encrusting Sponge	Unidentified species