

5.4 TREE BARGE

- Location: Sirotkin Reef
- Materials: Steel barge & one Reefmaker unit
- Maximum Depth: 190 feet
- Reef High Point: 172 feet
- Year Created: 2002
- Monitoring Date: 9/25/2011
- Total Cost: There was no cost to Martin County

5.4.1 History of the Tree Barge Artificial Reef

The Tree barge was nicknamed such because a young Australian pine tree had grown on top of the deck while the barge lay idle for approx. 4 years in the Okeechobee waterway several miles west of the St. Lucie Locks. Martin County acquired this barge when the owner abandoned it where it was grounded on the north embankment of the waterway. On Friday April 19, 2002 the Tree barge was intentionally sunk in 188 feet of water in the northeast quadrant of the Sirotkin artificial reef site. It became the first component of the newly created deepwater extension of the Sirotkin artificial reef site which extends out to 200-foot water depths. Although these depths are not recommended for normal recreational diving, the local offshore sport fishing interests prefer these depths for their blue water angling adventures because of the specific pelagic species encountered there.

The Tree barge settled on the bottom in an upright position with the deck level; no notable listing. The bow, damaged during deployment, faces easterly at 80° and the stern faces westerly at 260°. Some minimal scouring of the sand/shell bottom has occurred, especially on the western end. There has been no apparent movement of the barge since original deployment in 2002.

The Tree barge was considered a derelict abandoned vessel and was in poor condition with holes in its deck. As a working barge this is not a favorable asset but underwater as an artificial reef the holes provide access for fish and marine life. Since the deployment this site has seen one Category 3 hurricane (2004) and two Category 2 hurricanes (2004 & 2005) pass directly over the reef which it is believed that one of these hurricanes caused part of the steel deck to lift up and fold over on itself.

In May 2005, four Reefmaker units were deployed in a line between the Tree Barge and the Wickstrom as a part of an FWC grant that placed sixty Reefmaker units throughout the Donaldson and Sirotkin artificial reef sites. Four of the Reefmaker units were placed between the Tree Barge and Wickstrom to provide a corridor between the two artificial reefs for fish and tech divers. The closest Reefmaker unit was placed approximately 72 ft NNE of the Tree Barge. Figure 11 shows the location of the Tree Barge in the Sirotkin Artificial Reef area and Figure 12 shows the locations of the nearby Reefmaker units between the Tree Barge and the Wickstrom.

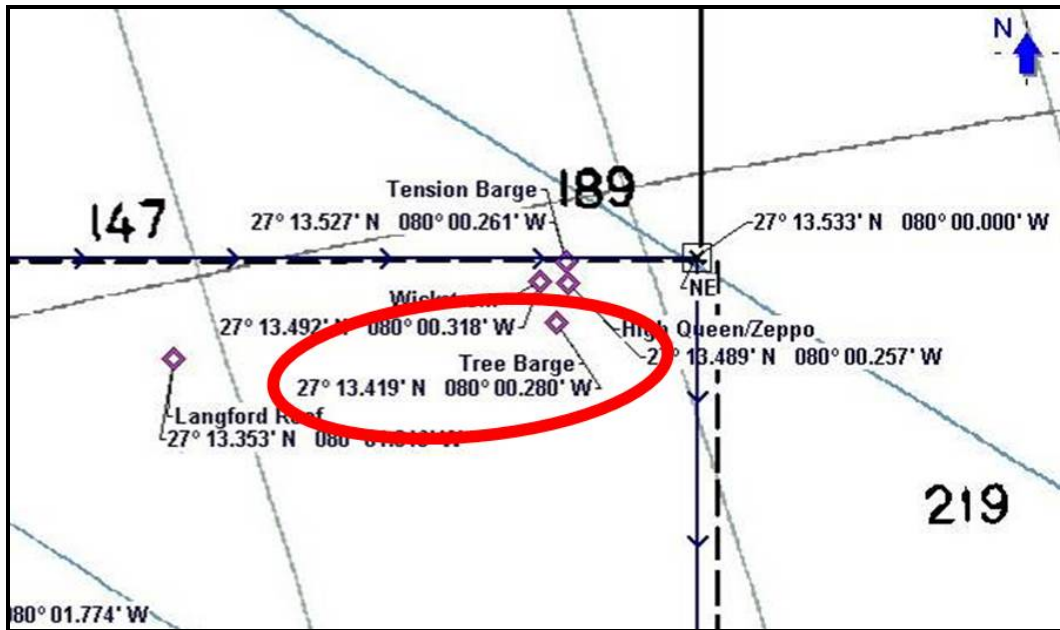


Figure 11. Sirotkin Reef site showing the Tree Barge location.

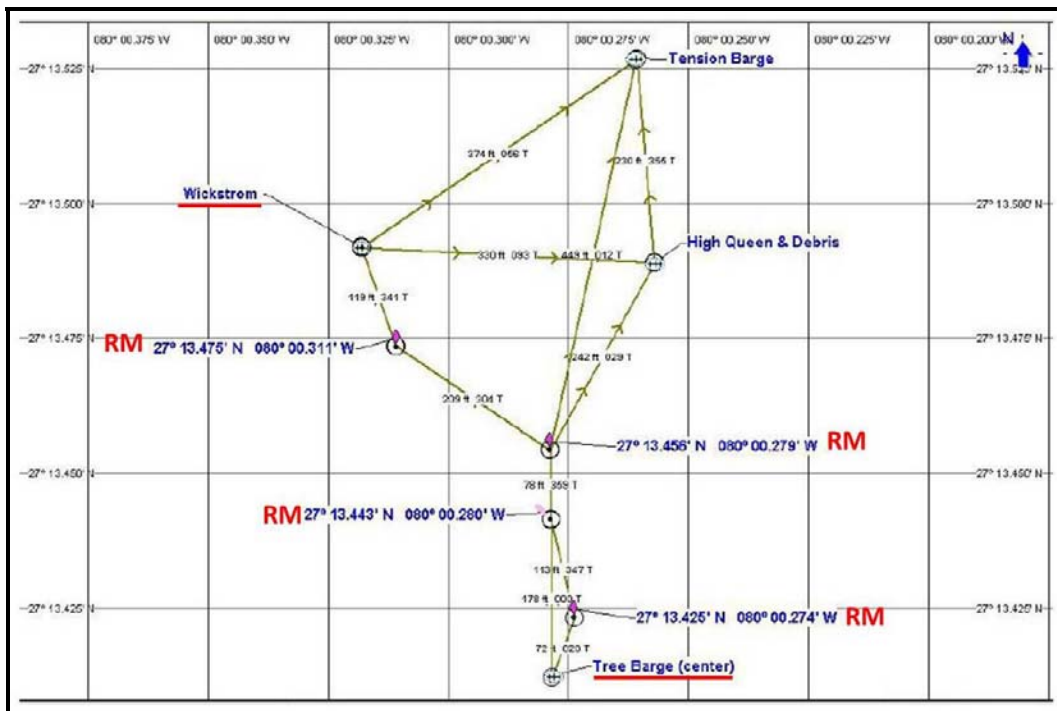


Figure 12. Sirotkin Reefmaker Corridor from the Tree Barge to the Wickstrom.

5.4.2 Structural Summary

As mentioned above, the Tree Barge shows some hurricane damage to the north center part of the steel deck plates. A large (30 ft. by 12 ft.) section of steel deck was observed having been peeled back lying on top of itself. The Tree Barge otherwise appeared structurally sound, the steel support members show little change except for some marine growth. The photographs in

Figure 13 show the general condition of the Tree Barge, the Reefmaker unit closest to the Tree Barge and some of the species observed during the monitoring dive.



Figure 13. Tree Barge Artificial Reef photographs from 2011.

5.4.3 Biological Survey Results

Several important sport fish were documented during this monitoring event including black grouper, black sea bass, gag grouper, greater amberjack, and scamp. Three adult goliath grouper, which are federally protected species, were seen and photographed. In addition, a large unidentified pelagic shark was seen and approached the divers before swimming off unconcerned. Two deepwater species rarely seen and photographed were red barbier and rough-tongue sea bass, these species are rarely seen above depths of 200 ft in Florida waters. Table 14 and Table 15 list the species/taxa, their relative abundance and size class (adult, intermediate, and juvenile) observed during the monitoring dive.

Table 14. Tree Barge Artificial Reef Fish Species Census.

Family/ Common Name	Species	2011		
		Abundance	Size	Comments
Carangidae				
Greater Amberjack	<i>Seriola dumerili</i>	M	A	
Istiophoridae				
Atlantic sailfish	<i>Istiophorus albicans</i>	S	A	

Family/ Common Name	Species	2011		
		Abundance	Size	Comments
Haemulidae				
Tomtate	<i>Haemulon aurolineatum</i>	A	A	
Pomacentridae				
Yellowtail reeffish	<i>Chromis enchrysurus</i>	M	J & A	
Sciaenidae				
Cubbyu	<i>Pareques umbrosus</i>	M	J & A	
Serranidae				
Bank sea bass	<i>Centropristis ocyurus</i>	M	J & A	
Black sea bass	<i>Centropristis striata</i>	A	J & A	
Red Barbier	<i>Hemanthias vivanus</i>	F	J & A	
Roughtongue Sea bass	<i>Pseudogramma gregoryi</i>	M	J & A	
Black grouper	<i>Mycteroperca bonaci</i>	F	J	
Belted sandfish	<i>Serranus subligarius</i>	F	J & A	
Goliath grouper	<i>Epinephelus itajara</i>	F(3)	A(5 ft)	>250 lbs
Scamp	<i>Mycteroperca phenax</i>	F	A	
Gag grouper	<i>Mycteroperca microlepis</i>	F	A	
Whitespotted soapfish	<i>Rypticus maculatus</i>	S	A	
Carcharhinidae (Requiem)				
Shark	(Unidentified Pelagic type)	S	A(6 ft)	
	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 15. Tree Barge Artificial Reef Benthic Species Census.

Common Name		Scientific Name
Echinoderms	Common Arbacia Urchin	<i>Arbacia punctulata</i>
	Sea Star	Unidentified species
Cnidarians	Sea Anemones	<i>Aptasia sp.</i>
	Algae Hydroids	<i>Thyroscyphus ramosus</i>
	Hydroids – several species	Unidentified species
Crustaceans	Sessile barnacles	<i>Thoracica</i>
Mollusca	Rock snails	<i>Muricidae (Unidentified species)</i>
Ectoprocta	Encrusting Bryozoans	Unidentified Species
Scleractinia	Large ivory coral	<i>Oculina varicose</i>

	Common Name	Scientific Name
Porifera	Sponges – several species	<i>Demospongiae</i>
Annelida	Bearded Fireworm	<i>Hermodice carunculata</i>
