

<i>Marine Species Identified</i>	<i>2006 Quantity Observed</i>	<i>2005 Quantity Observed</i>	<i>Juvenile or Adult (2006)</i>
Spotfin Butterflyfish	2	2	A
Spotfin Hogfish	1	1	J
Spottail Pinfish	5	Not seen	A
Spotted Scorpionfish	1	1	A
Tomtate	10's	100's/10's	A
Unidentified baitfish	Not seen	100's	--
Vermilion Snapper	Not seen	3	--
Whitespotted Soapfish	Not seen	1	--
Unidentified Snapper w/black spot near gill slit	1	Not seen	A
Bo Gregory	1	Not seen	A

### 8.7 Railroad Tie Patches Reef Summary

This reef site survived the 2004 and 2005 hurricanes, with some loss of profile height as well as some scouring of the bottom sediments. Each of the 5 peaks is still at the same location as before the storms. Twenty fish species were identified at this site, which is down from 28 in 2005. The most significant sport and food fish species observed on this reef are Red Snapper, Gag Grouper, and Gray Snapper, Black Seabass, and Greater Amberjack. This is the first year spiny lobster has been seen. Lane snapper and Southern Flounder was the most significant food/sport species not observed which was previously reported at this site.

Overall this site is performing very well, benthic growth is becoming more pronounced and is now found on each of the railroad ties, especially the ones in the uppermost locations. The RRties at the base of each of the 5 mounds have slightly less attached benthic growth, most likely because of bottom sediments that tend to scrub the surfaces and at times may partially cover over the concrete surfaces.

## 9 Tree Barge

Construction date: April 19, 2002

Monitoring date: June 3, 2006

Location: Sirotkin permitted artificial reef site

GPS coordinates: 27° 13.419 North / 80° 00.270 West

Crew members: Lee Harris, Kerry Dillon, Wayne Turner, Doug Rainer

### 9.1 History of the Tree Barge

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 approximately four 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. The County

Engineering Department arranged for the sinking of the barge as the first component of the newly created deepwater extension of the Sirotkin artificial reef site. On Friday April 19, 2002 the Tree Barge was towed offshore and sunk in 188 feet of water in the northeast quadrant of the Sirotkin artificial reef site. Due to the deep depths and poor offshore conditions, this site was last monitored in the summer of 2003.

### 9.2 Dive Data

Max. depth at bottom = 188 feet

Max. depth in scour under chine = 191 feet

Underwater visibility this day = 50 feet

Bottom water temperature = 65°F

Surface water temperature = 80°F

Current speed and direction 2.0 knot to the north surface, ½ knot north @ bottom

Divers breathing mode and gases = SCUBA with Trimix 22/30 and NITROX 24%

### 9.3 Tree Barge Orientation

The Tree Barge remains on the bottom in an upright position with the deck level; no notable listing. The bow damaged during deployment faces easterly at 80 degrees and the stern faces westerly at 260 degrees. The highest profile is where the damaged bow is buckled, where a depth of 175 feet can be found. In May of 2005 four concrete/steel Florida Special ReefMakers Units were deployed between the Tree Barge and the nearby ship the Wickstrom. The southernmost ReefMaker unit landed on top of and upright at the east end of the Tree Barge. At the apex of that unit a depth of 167 feet is found. Some minimal scouring of the sand /shell bottom has occurred, under and immediately adjacent to the hull/seafloor interface. Water depths in the scoured areas were 190 feet, while surrounding water depths at the bottom were 188 feet. There seems to have been no movement of the barge since original deployment in 2002.

### 9.4 Representative Photographs

Underwater photographs of the Tree Barge are shown in Figure 16. The ReefMaker unit is shown on top of the Tree Barge in the left photo, and the right photo shows the 2-foot scour along the side of the barge, and the damaged top.



Figure 16. Tree Barge Photographs

### 9.5 Reef Components Stability

The Tree Barge was considered a derelict abandoned vessel and was in poor condition when acquired by Martin County. Before deployment offshore, some areas of the deck could not be walked on because of thinning deck plates and holes in the steel 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. On the north center section of the deck, a large area of peeled open deck plates was located and photographed, as shown in Figure 16. This damage probably occurred during one of the three major hurricanes that passed through Martin County in 2004 and 2005. This actually could be looked at as a positive thing for the overall artificial reef's productivity, as it allows marine life easier access in and out of the hull.

### 9.6 Fish Species and Abundance

Fish identification and abundance was determined utilizing the roving diver method, as previously described. Fish census is shown in Table 13

**Table 13. Tree Barge Fish Census**

<i>Marine Species Identified</i>	<i>2006 Quantity Observed</i>	<i>2003 Quantity Observed</i>	<i>Juvenile or Adult (2006)</i>
Red Snapper	10's	10's	A
Gray Snapper	10's	10's	A
Gag Grouper	2	2	A
Reef Butterfly	4	4	A
Gray Triggerfish	10's	10's	J
Black Grouper	2		A
Black Seabass	6		A
Greater Amberjack	10's		A

### 9.7 Benthic Species and Abundance

The roving diver method was used for benthic species identification, with the results shown in the following table.

**Table 14. Benthic Species identified**

Sea Urchins (Black and White)
Barnacles, Red, approximately 40 % coverage
Feather duster worms (occasional)
Brown Green algae
Arrow crabs

### 9.8 Tree Barge Summary

This reef site had not been monitored since August 2003. The barge survived the 2004 and 2005 hurricanes, but a portion of the deck was peeled back, allowing more access for fish to the interior spaces. The barge has numerous attached benthic species, and the most significant sport and food fish species observed on this reef were Black Grouper, Gray Snapper, Black Seabass, Red Snapper and Greater Amberjack.