

10 Wickstrom Artificial Reef

Construction date: January 21, 2003

Monitoring Date: June 3, 2006

Location: Sirotkin permitted reef site

GPS coordinates: N27° 13.492' / W80° 00.318'

Crewmembers: Kerry Dillon, Lee Harris, Doug Rainer, Wayne Turner

10.1 History of the Wickstrom Artificial Reef

The *Wickstrom* was previously known as the *Lady Lora*, *Taurus*, and US Army FS 553. The ship is a 168-foot long coastal freighter that had been sitting idle in the Miami River for about 4 years. The vessel was purchased from Jones shipyard in Miami, Florida with funds from Karl *Wickstrom*, the founder and chief editor of Florida Sportsman magazine, and the Martin County Anglers Club. Martin County funded the transport, administrative and deployment costs of the project.

On Tuesday January 21, 2003 the *Wickstrom* was intentionally sunk in 188 feet of water in the northeast quadrant of the Sirotkin artificial reef site. The ship was deployed resting perfectly upright located approximately 400 feet north of the previously sunk Tree Barge. Water depths were from 186 - 189 feet surrounding the ship at the sand/shell bottom. The following depths were noted on the ship following its deployment:

- Top of masthead above bridge – 117 feet depth
- Top of wheelhouse – 138 feet depth
- Deck level at bow – 155 feet depth
- Deck level at stern – 162 feet depth

During deployment the ship had a list to portside for several hours as the ship was flooded, but as it submerged completely it righted itself and sank level. During the first underwater inspection in January 2003, it appeared that the ship hit the bottom with great force. This force was enough to break steel welds along the portside at deck level where the railing and barrier wall exist, and bend the wall to the east. Also at the bottom on the east (port) side, the hull steel plates have buckled slightly where the ship hit the sand/shell bottom.

10.2 Dive Data

Max. depth at bottom in sand = 188 feet

Min. depth at top of ship = 130 feet

Underwater visibility this day = 50 feet

Bottom water temperature = 65° F

Surface water temperature = 80° F

Current direction and speed = North 2.0 knot surface, ½ knot bottom

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

10.3 Wickstrom Orientation and Components

The *Wickstrom* deployment was with the ship upright and the deck level, with no noticeable listing. The bow faced southerly at 190° and the stern faced northerly at 10°. Due to the 2004 and 2005 hurricanes, the ship is now completely broken in half just aft of the superstructure. The bow now faces SE at 120°, while the stern faces NW at 320°. The entire hull along the chine and

keel has sawed into the limestone substrate approximately 6 feet. Scour exists along the length of the ship approximately 6-8 feet deeper than the surrounding natural sand/shell seafloor.

10.4 Representative Photographs

Photographs of the *Wickstrom* are shown in Figure 17, which show the damages due to the hurricanes. The bottom two photos show the cutting into the limestone bottom that has occurred.

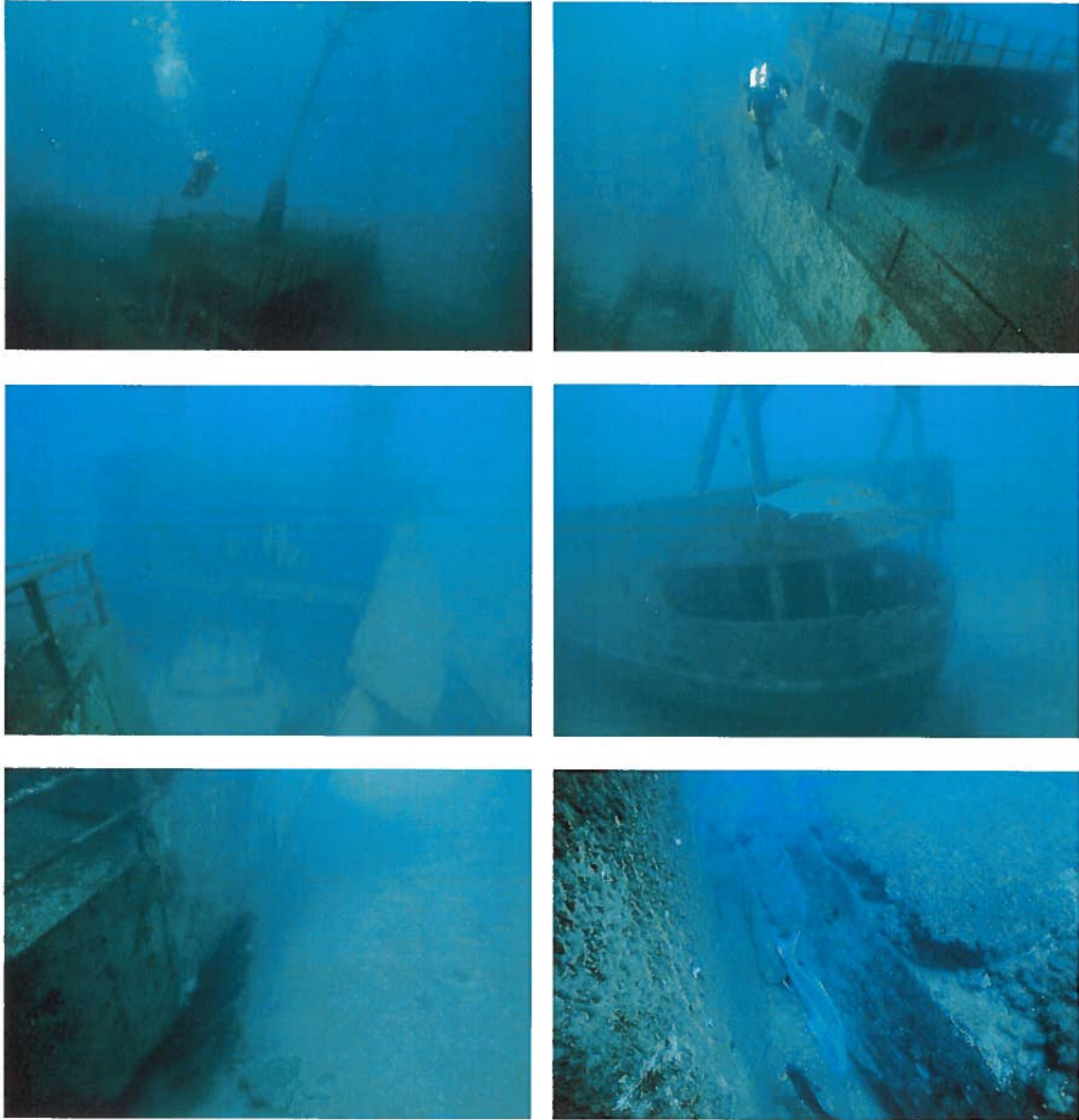


Figure 17. *Wickstrom* Photographs

10.5 Fish Species and Abundance Findings:

Table 15 presents the fish species observed and documented during monitoring on June 3, 2006 compared to the previous monitoring performed on August 18 and 27, 2004.

Table 15. *Wickstrom* Artificial Reef Fish Census

<i>Marine Species Identified</i>	<i>2006 Observed</i>	<i>2004 Observed</i>	<i>Juvenile or Adult (2006)</i>
Greater Amberjack	10's	10's	A
Red Snapper	0	7	
Black Grouper	10's	15	A
Scamp	10's	0	A
Gag Grouper	0	18	
Warsaw Grouper	0	1	
Snowy Grouper	1	2	J
Yellow Coney	1	0	J

10.6 *Wickstrom* Artificial Reef Summary

The 2004 hurricanes caused a lot of damage to the *Wickstrom*. In addition to breaking the hull into two parts, the ship has sawed itself down into the limestone substrate. Even with these changes, the *Wickstrom* still provides significant marine habitat.

11 ReefMaker Units

In 2005 Martin County received a grant from FFWC 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. Figure 18 shows the ReefMaker units, which are fabricated using concrete and steel.



Figure 18. ReefMaker "Florida Special" Artificial Reef Units