Date: October 29, 2002
To: Kathy Fitzpatrick, P.E., Martin County Coastal Engineer
From: Kerry Dillon
Subject: Post deployment Monitoring report for the Treebarge
Location: Confirmed GPS coordinates **N27 13.419/ W80 00.270** Approximately 10 miles offshore Martin county, Florida
Crewmembers: Boat operator Capt. Leon Morrison, Lead diver Kerry Dillon, diver Jack Glanville
Project Date: September 10, 2002

The following is a field report to document as found conditions on the recently deployed "Tree-Barge" in the Sirotkin reefsite offshore Martin County, Florida. The report will address four types of data collected. Fishlife species identification, Barge components stability, orientation and benthic species identification.

HISTORY OF THE "TREE-BARGE"

The tree barge was nicknamed such because a young Austrailan pine tree had grown on top of the deck while the barge lay idle for approx. 4 years in the okheechobee waterway several miles west of the St. Lucie Locks. The name has stuck ever since. Martin County acquired this barge when the owner basically abandoned it in place where it was grounded on the north embankment of the waterway. The land utilization department contacted Kathy Fitzpatrick of the coastal engineering department and turned it over to be sunk as the first component of the newly created deepwater extension of the Sirotkin artificial reefsite.

This area extends out to 200-foot water depths from the old boundary, which was in 110 feet of water. 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.

On Friday April 19, 2002 the tree barge was intentionally sunk in 188 feet of water in the northeast quadrant of the Sirotkin artificial reefsite. This deployment was successful and has been previously documented in written report, still photograph and video formats. The remainder of this report will focus on what has happened to the tree barge since the deployment as it is being transformed from an old derelic barge to a foundation for a marine ecosystem to thrive upon.

FISH SPECIES & ABUNDANCE FINDINGS:

Fish identification and abundance was determined utilizing the guidelines setup by The Reef Environmental Education Foundation, known as *REEF*. The roving diver method was used for a set time period of 15 minutes. The divers would roam around the barge and identify species and record data on underwater slates. Data would be double-checked once topside

using field texts with color photographs and then transferred to the *REEF* data sheets to be added to their worldwide database. Underwater video photodocumentation was also utilized to accurately document fish species and abundance. Below are the results of those findings:

Marine species identified	**Quantity observed & estimated**	**Juvenile or Adult**
Greater amberjack	50	A
Red Grouper	3	A
Scamp	1	J
Banks butterflyfish	1	A
Yellowtail reefish	10 +	A
Black Grouper (approx. 50 lb.)	1	A

In keeping with the guidelines of *Reef* fish ID training, only species that could be positively identified are listed above. However there were 12 other species noted but not positively identified. Those are roughly described below:

Fish Type	**Quantity observed & estimated**	**Juvenile or Adult**
Baitfish	100's	3 inches long
Grouper or Coney (Bright yellow)	1	J
small ovals, possible damselfish	5 different species	?
small elongated bottom dwellers, possible gobies	3 different species	?
small elongated free swimming on top of deck, possible wrasses or juvenile parrotfish	2 different species	?

Another dive was made on this barge and surrounding area as a pre-deployment dive for an upcoming ship deployment. Although it cannot officially be included with this report I felt it noteworthy to mention the following. I videodocumented a school of adult true red snappers lazily swimming around and inside the tree barge. It was estimated from reviewing the video that the school consisted of 40 individuals. We will hope to see this same species next year.

ORIENTATION:

The tree barge settled in a hull down position with the deck level, no notable listing. The damaged bow faces east at 80° and the stern faces west at 260°. Some minimal scouring of the sand /shell bottom has occurred especially on the west end. Water depths at this end were 191 feet while overall surrounding water depths at the bottom were 188 feet.

BARGE STABILITY:

Since the tree barge was considered a derelict abandoned vessel it is a known fact that she was in poor condition when acquired by Martin County. Before scuttling some areas of the deck could not be walked on because of thinning deckplates and holes that were evident in the steel deck. As a working barge this is not a favorable asset but underwater as an artificial reef foundation this is a good thing. Fish are secretive by nature and necessity and are always searching for a hiding place to escape from predators and get out of the ocean currents. This barge has many such openings in the hull and over time as more deckplates corrode and fall away the barge will become more accessible to marinelife.

The first thing we noticed as we drifted down upon the barge was the severe damage to the east end we refer to as the bow. The day it was sunk it healed up on one end and sank. Obviously it continued this angle as it descended towards the bottom and hit the bottom with a great force. This force was enough to snap steel undersupports, peel back deckplates and bend the bow hull to an abrupt angle. This can be clearly seen on the accompanying videotape. Because of the additional access to the inside of the barge providing many overhangs and crevices this is where I documented the majority of the fishlife seen this day.

Other than the above damaged bow no other damage or deterioration was observed. It will be monitored annually for stability and deterioration.

BENTHIC SPECIES IDENTIFICATION:

As of September 10, 2002 when this survey dive was conducted sparse benthic growth has occurred on the barges steel surfaces. The only type observed was a thin layer of a greenish brown algae growth, barnacles, and some small red sponges. The barge was sunk April 19, 2002 just under 5 months prior to this survey dive. At this depth even in clear water little sunlight penetrates the water column to provide the photosynthesis necessary to begin the growth cycle. It will occur; it will just be at a slower pace than with shallower artificial reefsites. I remember noticing the same slow growth on the USS Rankien only 3 miles from this site and in 130 foot of seawater. This 467 foot long huge shipwreck now harbors a prolific growth of benthic organisms including hard and soft corals, tunicates, sea fans, anemones, crustaceans, and others.

It is assumed the video footage taken this year as compared to next year's footage will show a marked increase in the amount of benthic organisms development. At that time there should be enough to document which species are making the tree barge their new home.

Conclusions:

Although biologically brand new as an artificial reef it was quite reassuring to document so many fish species on this site. Because of the depth and distance offshore it is assumed this site will very rarely be dived recreationally so little or no impact should occur from divers. I'm sure it will be fished which can be confirmed next year by the amount of monofiliment fishing line and other tackle found. So far no evidence exists of such. It is hoped that the reader will refer to the video to augment this report, as videodocumentation of deepwater artificial reefsites is rare.

Certification of findings:

I certify that the above events as listed occurred as stated and findings are true as written and occurred on Tuesday September 10, 2002.

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Kerry L. Dillon

Date – 11/1/02
Kerry L. Dillon