

# COASTAL RECREATIONAL FISHING LICENSE FINAL PERFORMANCE REPORT

**Recipient:** Long Bay Artificial Reef Association

**Tracking #:**

**Grant Number:** 4479

**Grant Title:** Establishment of Inshore Artificial Reef (AR 430)

**Grant Award Period:** July 1, 2012 to December 31, 2013

**Project Costs:**

	<u>Budgeted</u>	<u>Expenditures</u>	
	\$220,622	\$216,010	RCFL Grant
	\$ 37,469	\$ 28,652	Matching and In-Kind
TOTAL	\$258,091	\$244,662	Total Project Costs

Description of Need and Benefit:

The Long Bay Artificial Reef Association (hereafter referred to as LBARA), in association with the NC Division of Marine Fisheries (hereafter referred to as DMF), began investigating the possibility of establishing a new near shore artificial reef site in 2005. At that time the other two reef sites closest to the Cape Fear River, AR 420 and AR 425, had been fully utilized as far as permitted area. Additionally, these two sites were severely congested with fishermen due to the close proximity to the inlet. A new site was selected and deemed AR 430 (33°52.190"N – 78°10.000"W) which is approximately 2.8 miles due south of the intersection of Beach Drive and Middleton Street in Oak Island, NC (See Chart 1 for map location).

A public hearing was held at the Oak Island Town Hall and stakeholders from the area, including commercial trawling operators from which possible objections were anticipated, were invited to attend. DMF personnel conducted the hearing and presented the proposed location. There was no opposition voiced from any attendee and support for the new reef and the site selection was universal. The site was surveyed by DMF, first by side scan sonar then by visual inspection by divers of any anomaly discovered by the side scans. Nothing was discovered that would prevent the site from qualifying as an artificial reef site.

Description of Project:

The permitting process was then initiated by DMF and final permits were received in 2011. The permitted reef site is circular in shape with a diameter of one thousand

yards. The area of the reef site is slightly more than one hundred and sixty-two (162) acres.

The initial reef development was to consist of four patch reefs of approximately one million pounds of concrete pipe each. Sizes of pipe ranged from twenty-four inches to forty-eight inches (inside diameter) and from four to eight feet in length. Two of the patch reefs were to be a single layer dispersed field configuration and two high relief piles. This was the same deployment plan used on the LBARA 2010 project to enhance AR 440 and AR 460. Anecdotal reports from users indicated this was a successful configuration to follow.

To fund the initial construction phase of AR 430, LBARA applied for a CRFL grant of two hundred twenty-five thousand eight hundred and ninety-one dollars (\$225,891) to begin construction. Matching and in-kind funding from the LBARA was estimated to be thirty-seven thousand four hundred and sixty-nine dollars (\$37,469), for a total project cost of two hundred sixty-three thousand three hundred sixty dollars (\$263,360). The grant application was made on July 20, 2011.

On January 12, 2012, LBARA received notice that the grant had been approved. The RCFL amount was not to exceed two hundred twenty thousand six hundred twenty-two dollars (\$220,622) and the in-kind and matching amounts remained unchanged.

#### Description of Work Performed and Completed:

All of the project's pipe was to be trucked into the NC State Port in Wilmington. There it would be stored until all of the quantity necessary to complete the project was acquired. Then it would be trucked from the pipe storage area to a dock in the port facility where it would be loaded onto a barge for transportation to the AR 430 reef site.

Unfortunately, due to an expansion of the wood chip facility at the port and the addition of a log export operation, the State Port in Wilmington could not spare any room for pipe storage. Since this was a critical component to the project and no viable alternative available, the project was placed on hold until space at the port was found. Due to this delay a term extension for the CRFL grant was requested and granted to December 31, 2013.

In early June, the port cleared an area for the project and the first load of pipe arrived on June 24, 2013. Receiving of reef materials continued over the next several months and the final load was received on October 1, 2013. A total of one hundred and one (101) truckloads of pipe were delivered. This consisted of one thousand one hundred and fifty-six individual pieces (1,156) which amounted to four million three hundred and twenty-seven thousand (4,327,000) pounds. This amount was approximately eight per cent over the planned four million pounds.

The barging company, Stevens Towing of N.C., Inc., was notified that all of the material was on site at the port and was ready for barging to the reef site. The barge arrived at

the port on November 11 and loading of the material for the first two patch reefs commenced. The loading process was completed on November 14, and the barge sailed down the Cape Fear River that night.

The next morning, November 15, the barge arrived at the AR 430 reef site and rendezvoused with DMF personnel. They had marked the first two patch reefs and the center of the reef. The buoy marking the center of the site was the first thing deployed by the barge crew. Work then commenced on the two patch reefs. The forecast called for a northerly wind but was out of the east instead. As a result, the wave conditions were worse than anticipated and the tug captain had a difficult time holding the barge on station. Additionally, the conditions made operation of the forklift on the barge difficult with the pitch and roll of the barge deck. Still, operations went on and deployment of the first segment of the reef was concluded and the barge returned to the port.

Loading of the pipe for the final two patch reefs started the next day, and due to good weather and a long day of work, concluded on November 18. Unfortunately, the weather turned unfavorable and conditions were not suitable for deployment activities. A weather window finally opened and on December 2, the final two patch reefs were built and the project concluded.

#### Summary of Objectives and Costs:

The total project plan was based on four million (4,000,000) pounds of concrete pipe. The actual amount of pipe acquired and subsequently deployed on the reef site was four million three hundred and twenty-seven thousand (4,327,000) pounds which is approximately eight percent over the plan. The plan objective to establish four patch reefs was achieved.

Total budget for the project was \$258,091 which was comprised of a cash grant from the CRFL in the amount of \$220,622 and matching and in kind from LBARA in the amount of \$37,469. The total funds used from the CRFL grant was \$216,010 which was \$4,612 and 2% under the grant total. Matching and in-kind were \$28,652 which is \$8,817 and 24% under budget. The total project costs came in at \$244,622 which is \$13,429 (5%) under budget.

Chart 1 – Location of AR 430.

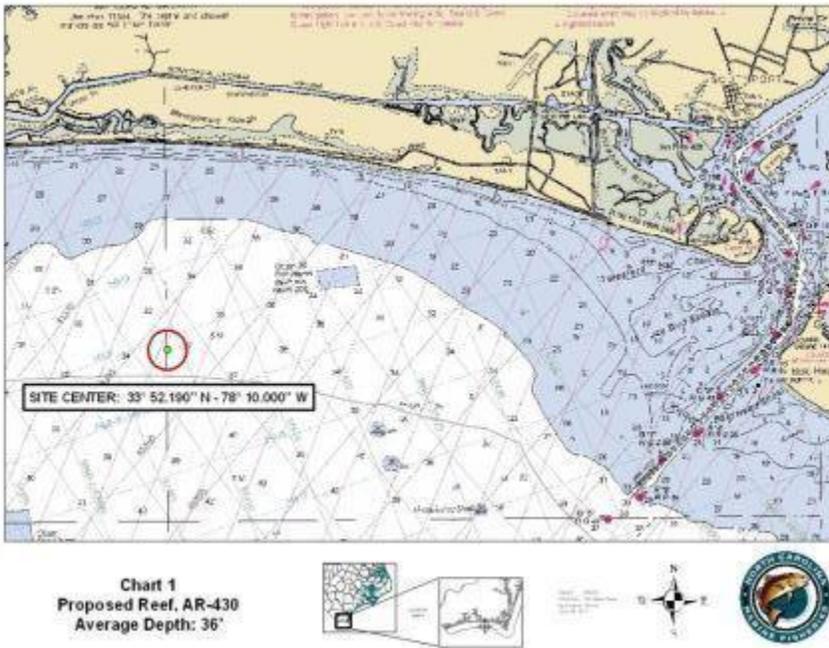


Photo 1 – Pipe storage yard at the NC State Port in Wilmington, NC.



Photo 2 – Truckload of 42" X 8' concrete pipe heading from pipe storage yard to dock for loading on barge.



Photo 3 – Loading pipe from dock to barge.



Photo 4 – Stacking pipe on barge.



Photo 5 – Pipe deployment on reef site.



Photo 6 – Tug and barge during deployment at reef site.



Photo 7: Buoy on site at AR 430.



Side Scan 1 – Images from side scan sonar of AR 430 showing the four patch reefs from this completed project.

