

COASTAL RECREATIONAL FISHING LICENSE
FINAL PERFORMANCE REPORT

Recipient: North Carolina Department of Natural Resources / Division of Marine Fisheries

Grant Award #: 2H40-H002

Grant Title: Inshore fishing/oyster reefs

Grant Award Period: July 1, 2012 – December 31,2017

Performance Reporting Period: July 1, 2012– December 31,2017

Project Costs:

Expenditures for the Period:

Category

Expenditures

Total

Total Cumulative Expenditures:

Total Remaining Balance: \$137,099.03

Description of Work:

The North Carolina Division of Marine Fisheries (DMF) received a grant from the Coastal Recreational Fishing License Program (CRFL) to expand North Carolina's Oyster Sanctuary Network through the creation of three dual purpose inshore fishing oyster reefs (IFOR). These sanctuaries are located in oyster producing areas but are designed as inshore recreational fishing reefs. These sanctuaries/fishing reefs are designed using traditional reef structures (e.g. precast concrete, reef balls, and concrete mounds) to maximize recreational fishing opportunities. By placing these reefs in oyster producing areas, we are creating oyster sanctuaries. Additionally, these reefs provide further benefits through water filtration, increasing lower trophic level production, and are a known habitat for recreationally targeted finfish.

One conceptual objective of this sanctuary/reef project is to provide long-term, protected oyster habitat, which will serve as a source for oyster larvae within Pamlico Sound. A fully developed coastal oyster sanctuary can support high population density, mature

size structures, and subsequently create high reproductive output relative to non-protected areas. Larval transport through current flow distributes oyster larvae from sanctuaries to historical oyster fishing areas for future harvest. In addition, oyster reefs deliver a variety of ecosystem services, such as improving water quality through water filtration, bottom consolidation, benthic-pelagic coupling, shoreline stabilization, and essential fish habitat. Reef structures serve as nursery habitat for numerous marine and estuarine species during key phases of their life cycles. These sanctuaries will not only serve the ecosystem service and larval subsidy functions described above, but will also offer recreational fishing opportunities.

Project Status/Work Accomplished:

The first reef constructed as part of this grant was a 10-acre site in Pamlico Sound called Raccoon Island Oyster Sanctuary/Fishing Reef constructed in 2013 and 2016. The second reef was a 32-acre site in Pamlico Sound called Pea Island Oyster Sanctuary/Fishing Reef constructed in 2015. These two sites contain a variety of materials conducive to oyster settlement and growth as well as fishing opportunities. Specific information about materials used and their locations can be found in Figures 1 and 2 and Tables 1 and 2. The materials located on these reefs have been sidescanned, digitized and added to the Artificial Reef Guide and the Interactive Reef Guide for easy access by the general public. Yearly, program staff conducts biological sampling of the oyster population. The primary goals are to quantify oyster densities and population size structure.

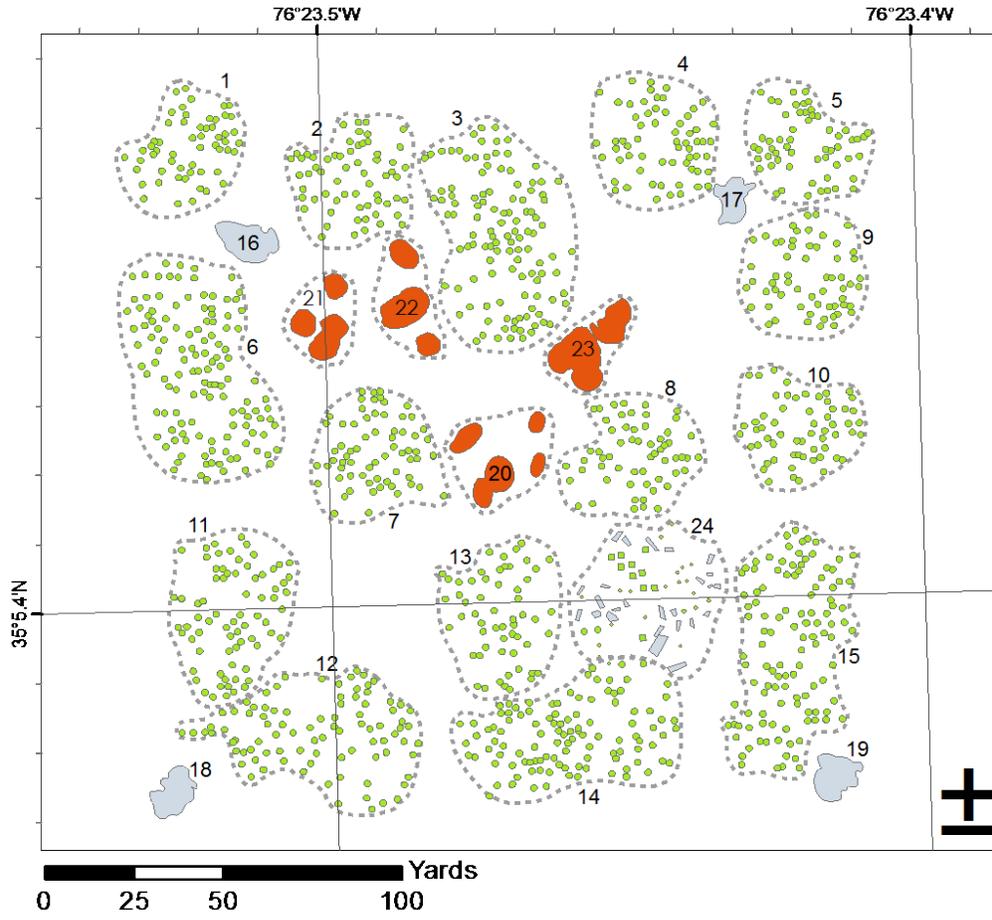
Deviations:

In early 2017, the Habitat and Enhancement Section's large deployment vessel, the M/V West Bay was sold due to mounting repair costs that could not be justified. This was the primary vessel used to construct Raccoon Island and Pea Island Oyster Sanctuary Fishing Reefs. Without the M/V West Bay, most construction activities must be conducted by external contractors. Additionally, a changing permitting climate has slowed construction activities for the Habitat and Enhancement Section. With limited funds and an uncertain timeline moving forward, program staff have decided to let the remaining funds revert to the general pool of CRFL grant funds.

Figure 1. Site map of Raccoon Island Oyster Sanctuary/Fishing Reef

OS-12

Raccoon Island Inshore Fishing Oyster Reef



 Pipe  Reef Balls  Crushed Concrete

Notes

Table 1. Material information and coordinates for Raccoon Island Oyster Sanctuary Fishing Reef

Raccoon Island Inshore Fishing Oyster Reef				
ID #	Material	Deployment Date	GPS (Decimal Minutes)	
1	43 Ultra Reef Balls	2013	35° 5.466' N	76° 23.523' W
2	55 Ultra Reef Balls	2013	35° 5.461' N	76° 23.494' W
3	100 Ultra Reef Balls	2013	35° 5.453' N	76° 23.470' W
4	59 Ultra Reef Balls	2013	35° 5.466' N	76° 23.444' W
5	55 Ultra Reef Balls	2013	35° 5.465' N	76° 23.419' W
6	120 Ultra Reef Balls	2013	35° 5.434' N	76° 23.522' W
7	64 Ultra Reef Balls	2013	35° 5.421' N	76° 23.492' W
8	55 Ultra Reef Balls	2013	35° 5.420' N	76° 23.449' W
9	59 Ultra Reef Balls	2013	35° 5.446' N	76° 23.419' W
10	56 Ultra Reef Balls	2013	35° 5.424' N	76° 23.421' W
11	65 Ultra Reef Balls	2013	35° 5.400' N	76° 23.517' W
12	79 Ultra Reef Balls	2013	35° 5.381' N	76° 23.502' W
13	53 Ultra Reef Balls	2013	35° 5.398' N	76° 23.471' W
14	98 Ultra Reef Balls	2013	35° 5.392' N	76° 23.423' W
15	98 Ultra Reef Balls	2013	35° 5.381' N	76° 23.459' W
16	12" Concrete Pipe	2013	35° 5.453' N	76° 23.513' W
17	24" Concrete Pipe	2013	35° 5.457' N	76° 23.431' W
18	15" Concrete Pipe	2013	35° 5.374' N	76° 23.528' W
19	18" Concrete Pipe	2013	35° 5.374' N	76° 23.416' W
20	4-12" Recycled Concrete	2013	35° 5.420' N	76° 23.472' W

21	4-12" Recycled Concrete	2016	35° 5.442' N	76° 23.500' W
22	4-12" Recycled Concrete	2016	35° 5.444' N	76° 23.486' W
23	4-12" Recycled Concrete	2016	35° 5.437' N	76° 23.455' W
24	33 Assorted Reef Balls	2016	35° 5.400' N	76° 23.446' W

Figure 2. Material Deployment Scheme for Pea Island Oyster Sanctuary. Geo-referenced map for Pea Island Sanctuary is located in the bottom-left corner.

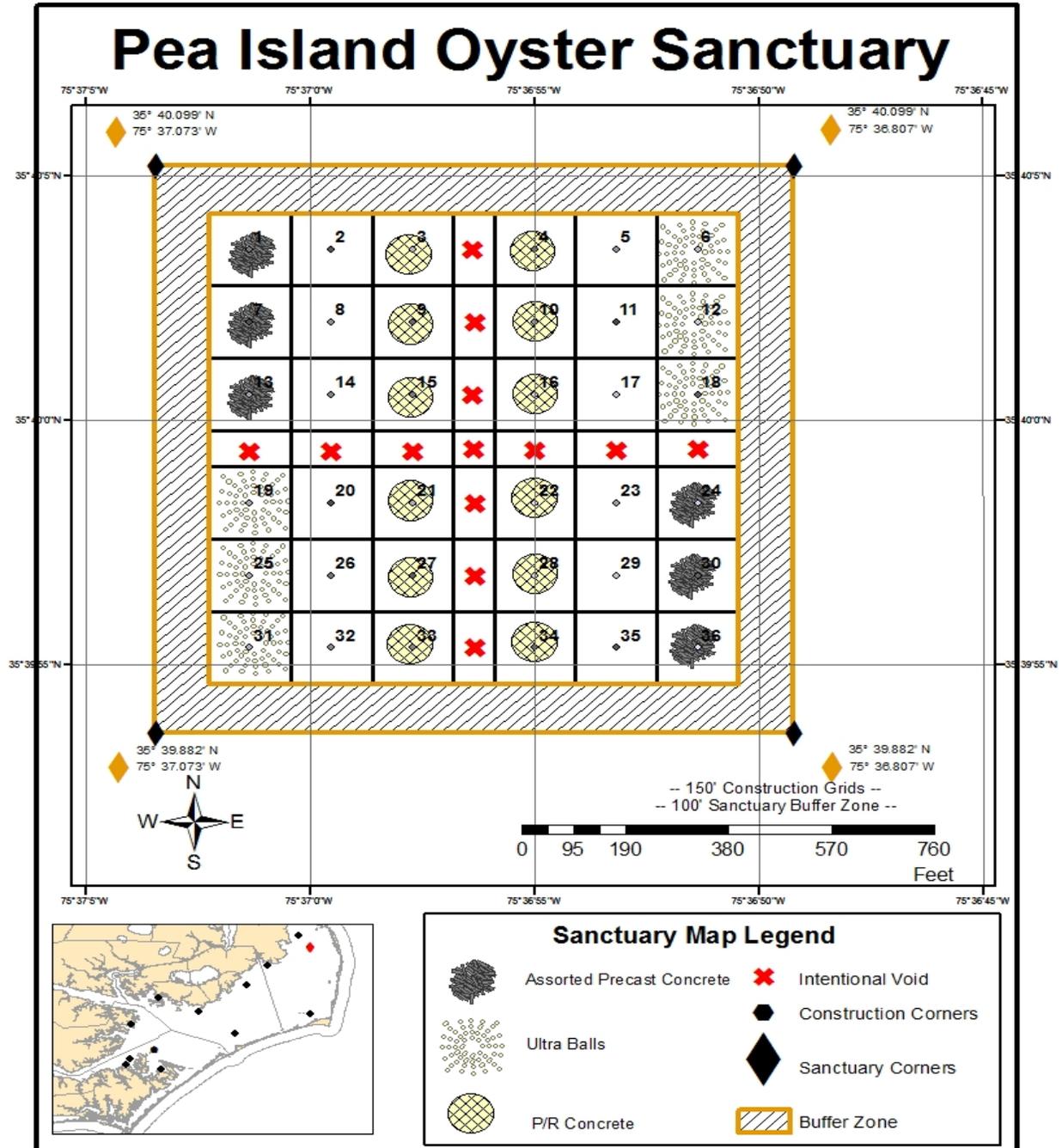


Table 1. Deployment description of date, material, amount and grid deployed on Pea Island Oyster Sanctuary.

Date	Material deployed	Grid No.
29-Jan-15	150 Tons-Precast concrete boxes	1
4-Feb-15	150 Tons-Precast concrete boxes	7
25-Feb-15	150 Tons-Precast concrete boxes	13
10-Mar-15	150 Tons-Reinforced concrete pipe	24
19-Mar-15	150 Tons-Reinforced concrete pipe	30
7-Apr-15	150 Tons-Reinforced concrete pipe	36
14-Apr-15	150 Tons-processed recycled concrete	3
21-Apr-15	150 Tons-processed recycled concrete	4
29-Apr-15	150 Tons-processed recycled concrete	9
5-May-15	150 Tons-processed recycled concrete	10
7-May-15	150 Tons-processed recycled concrete	15
19-May-15	150 Tons-processed recycled concrete	16
4-Jun-15	150 Tons-processed recycled concrete	21
18-Jun-15	150 Tons-processed recycled concrete	22
9-July-15	150 Tons-processed recycled concrete	27
16-July-15	150 Tons-processed recycled concrete	28
21-July-15	150 Tons-processed recycled concrete	33
23-July-15	60 Ultra Reef Balls	6
28-July-15	60 Ultra Reef Balls	12
30-July-15	150 Tons-processed recycled concrete	34
10-Aug-15	60 Ultra Reef Balls	18
17-Aug-15	60 Ultra Reef Balls	19
19-Aug-15	60 Ultra Reef Balls	25
12-Oct-15	60 Ultra Reef Balls	31