

Oyster Sanctuaries Construction with the Aid of SCUBA Diving

Clay Caroon
North Carolina Division of Marine Fisheries
3441 Arendell St.
P.O. Box 769
Morehead City, NC 28557
Clay.Caroon@ncmail.net

Abstract

In the mid-1990's, the Artificial Reef Program and the Shellfish Rehabilitation Program cooperatively constructed five Oyster Sanctuaries/Artificial Reefs. The five sites are constructed of Class B limestone rip-rap (football-basketball sized rock) and are located in North Carolina's estuaries. Initial colonization showed promise, but later recruitment success was below expectations. Initially recruitment surveys were conducted by scuba divers sending rip-rap material to the surface for a visual inspection. Species counts were made and the material was placed back on the sanctuaries.

Several years lapsed without any inspections of the sanctuaries. In 2002, relief money was available from the National Marine Fisheries Service Grant for Hurricane Floyd damages. Three of the existing oyster sanctuaries were to be enhanced by over-planting with three different cultch materials. However, preliminary site surveys conducted by scuba divers found oyster densities high enough to prohibit over-planting. Instead of over-planting existing material, a new "leg" will be constructed on each of the three sites. The new legs will be constructed by creating mounds with class B rip-rap. While each of the mounds is being constructed, the shape, size, and height will be monitored by scuba divers. This will create a base for the cultch material over-planting. The construction of a new leg also provides the ability to leave a bare control area of fresh Class B rip-rap to be compared with the three over-planted treatments. The adjacent bottom will also receive treatments of the three cultch materials. This will provide information on the advantages of high profile construction techniques and whether the application of a veneer of cultch material will increase recruitment. The project will also help determine differences in effectiveness of various cultch materials and if it varies regionally. Each of the above plantings, as well as the control areas, will be monitored at regular intervals by scuba divers. Biological data will be recorded and comparison will be made.

This project will provide protected habitat for oysters, allowing brood stock development while providing information on methods for future sanctuaries. The next phase of the grant will provide the material to construct three new sanctuaries – utilizing information gained from the study. The last phase will be to construct three sites for harvest in the area of the sanctuaries, which could gain the benefit of sanctuary brood stock spawn.