COASTAL RECREATIONAL FISHING LICENSE
FINAL REPORT

Grant Number: 002222

Grant Title: Testing alternative designs of planting seed oysters to optimize oyster reef habitat creation

Grant Award Period: 6/1/2009- 6/30/2011
Project Costs:

	Budgeted	Expenditures
	$	$
	$	$
TOTAL	$227,371	$227,371

Final Project Summary: Oyster reefs are one of the most depleted and degraded marine habitats worldwide. To reverse the current trend of oyster reef declines, North Carolina has established subtidal oyster sanctuaries in the Pamlico Sound, initiated by creating many large mounds of marl boulders. North Carolina has seeded sanctuary mounds and harvest areas with hatchery-raised juvenile oysters set on recycled adult shell to enhance development of oyster reefs. These costly restoration efforts, which are widely used for the eastern oyster, are carried out despite limited information on whether seed oysters accelerate reef development and, if so, how oyster size and time of deployment maximize oyster survival. Three sanctuaries differing abiotically and biotically were seeded during summer 2010. We experimentally manipulated mounds at each sanctuary and varied recycled shell and seed presence, seed size, and deployment date of shell and seed. Although oyster settlement varied spatially, natural recruitment swamped any measurable effect of seeding. Our findings, in combination with information from 3 additional sanctuaries seeded in 2006 and 2008, indicate that seeding does not enhance oyster reef restoration efforts in Pamlico Sound. Financial resources used for oyster seed would be better used to increase the amount of substrate for oyster settlement. Although our results may apply to areas with less natural oyster recruitment, this study highlights the need to quantify basic ecological processes on appropriate spatiotemporal scales to optimize restoration actions.