

North Carolina Oysters: A Workshop to Chart Future Restoration, Learning from the Past

March 12-13, 2014

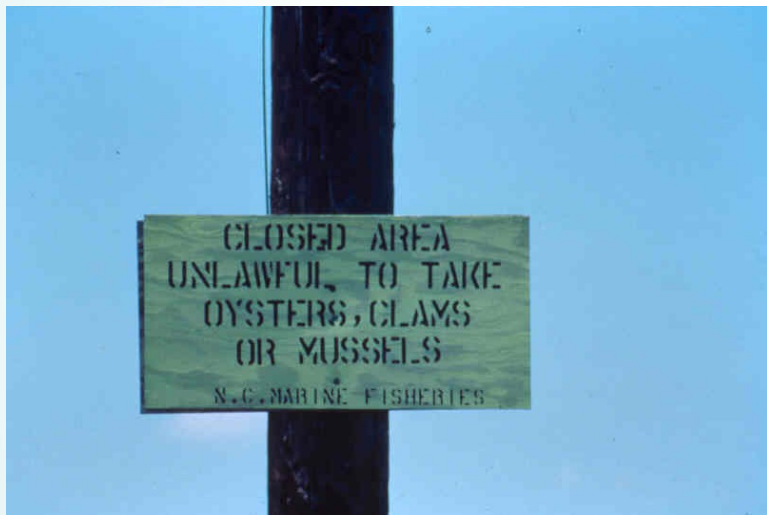


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Working Together for a Healthy Coast

Are We There Yet?

2014 Progress Report

Oyster Restoration and Protection Plan for North Carolina: A Blueprint For Action



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NC Oyster Restoration Efforts

- 1915: NC DMF started cultch plantings
 - 1915-2013 ~20 million bushels of cultch material planted
- 1947: Shellfish Rehabilitation Program began
- 1995: Blue Ribbon Advisory Council on Oysters
- 1996: Oyster sanctuary program initiated
 - 10+ sanctuaries cover 200+ acres
- 1997: Fisheries Reform Act
- 2001: Oyster Fishery Management Plan
- 2003: NGOs & research institutions ramp up efforts
- 2004: Coastal Habitat Protection Plan



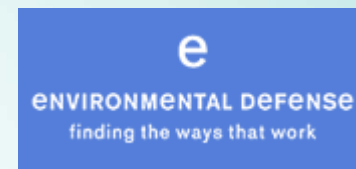
Oyster Restoration and Protection Plan for North Carolina: A Blueprint For Action

- 2003 Oyster Forum yielded compilation of suggested actions
- Incorporated recommendations from:
 - Blue Ribbon Advisory Council on Oysters
 - Fisheries Reform Act
 - Oyster Fishery Management Plan
 - Coastal Habitat Protection Plan (draft)
 - Basinwide Water Quality Plans
- Drafted into comprehensive, concerted & bold effort to take place over five years
 - 2003-2008
 - 2008-2012
- Steering Committee and Regional Workgroups engaged



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Plan Participants



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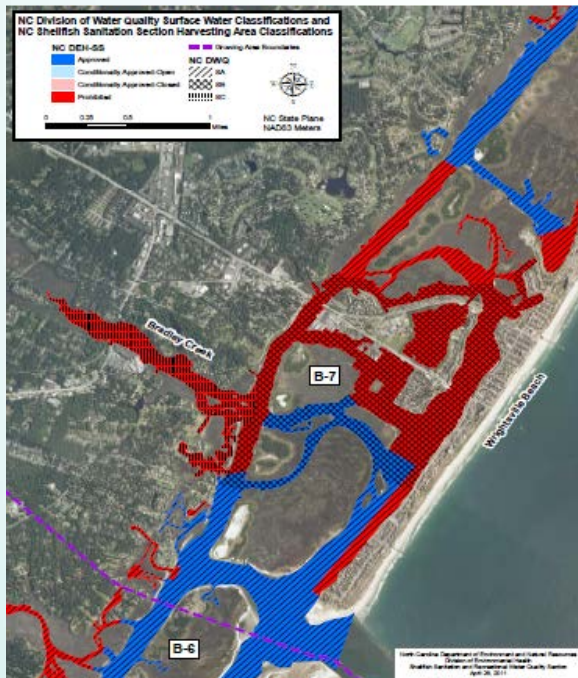
Watersheds to Reefs



➤ Rebuilding healthy oyster populations means restoring and protecting the whole coastal ecosystem

➤ Connecting watershed protection with oyster habitat protection and restoration

➤ Prioritize watersheds draining to high quality oyster habitat areas



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Oyster Restoration Blueprint

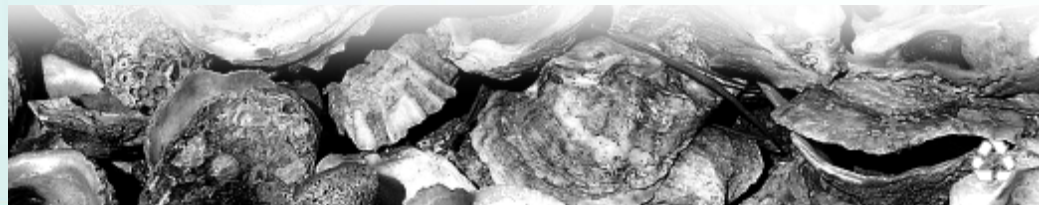
- Education and Outreach
- Research & Fisheries Development
- Oyster Habitat Protection & Restoration
- Water Quality Protection & Restoration
- Link to Ongoing Planning Efforts



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Pay Now Reap the Rewards Later

- Economic impact of commercial oyster fishery (DMF OMP)
 - 2005 Landing Value = \$1,682,857 Statewide Impact = \$2,990,588
 - 2012 Landing Value = \$2,906,267
- Oystering accounts for approx. 36% of total fishing income in southern part of the state. (DMF OMP)
- Oyster Habitat = more crabs and finfish = \$62 m/yr (DMF OMP)
- Water Quality Benefits (1acre/year) (Grabowski, Piehler, Peterson 2011)
 - nitrogen removal (denitrification) = \$2,555/year
 - nitrogen removal (filtration) = ~\$3,306/year
 - SAV habitat enhancement = ~\$1,710/year



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Oyster Habitat Protection

➤ Species of Concern - Stock Status Factors:

- Northern Area - Persistent Dermo infections & oyster habitat degradation
- Southern Area – High harvest pressure & oyster habitat degradation

➤ Shellfish Habitat Mapping

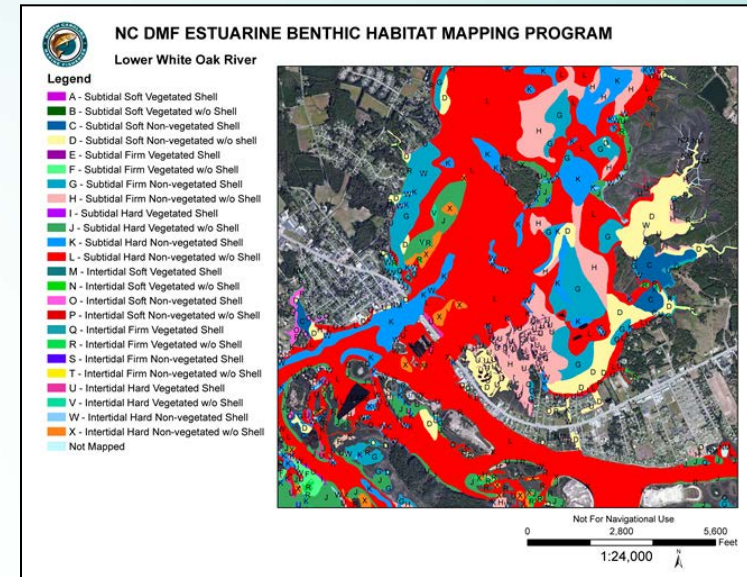
90% mapped, 15,778 acres of shell bottom

➤ SGA Priority Areas Designated

➤ CHPPs Developed

➤ Living Shorelines Legislation & Promotion

➤ APNEP Comprehensive Conservation and Management Plan



Oyster Habitat Restoration

- 2005 Oyster Restoration & Protection Act
- New DMF Oyster Sanctuaries
- Cultch planting efforts maintained
- UNCW Shellfish Research Hatchery
- Shell recycling program
 - 2003-12 = 185,866 bushels
- NGOs, research institutions, municipalities ramp up restoration
- Larval transport, distribution and spatfall monitoring programs and studies
- CRFL funding research & restoration



Water Quality Protection

- DWR, DOT, CWMTF projects to remove stormwater outfalls to shellfish waters
- CWMTF, EEP projects along the coast protecting shellfish waters and their watersheds
- Phase II NPDES Stormwater rules implemented
- Low Impact Development ordinances developed & adopted
- Shellfish Sanitation Enhanced Shoreline Survey Methodology

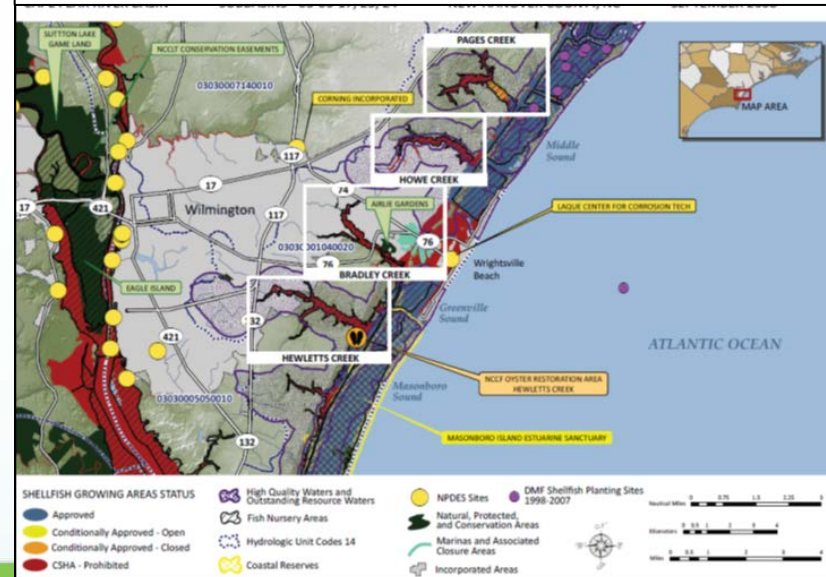


Water Quality Restoration

- Large & small scale watershed restoration projects underway
- DWR Coastal NP Source & EPA/ DWR 319 Projects
- DENR Community Conservation Assistance Program
- Onslow Bight & Cape Fear Arch conservation initiatives



Bradley & Hewletts Creek Watershed Restoration Plan



Develop Sustainable Native Fishery

- Shellfish Research Hatchery
- Sea Grant Mariculture Extension & Research Programs
- Freshness From NC Waters campaign
- Annual NC Aquaculture Conference
- U-Dock Program & Shellfish Gardeners of NC



Education and Public Involvement

- Biannual Summits and Public Forums
- Oyster U-Dock and Sea Grant education program
- Oyster shell recycling program
- Stakeholder education programs
- Volunteers engaged

Encore for Oysters: Bringing Back A Natural Resource

REGIONAL PUBLIC FORUMS


Saturday, March 25, 2006 • 10:00 am to 3:00 pm

Kure Beach: NC Aquarium at Fort Fisher
Beaufort: Duke University Marine Lab
Manteo: NC Aquarium on Roanoke Island

How are we restoring oysters in North Carolina?
What's being done to protect the quality of shellfish waters?
How can you get involved in restoring oysters
and protecting water quality?

ATTEND A MARCH 25TH REGIONAL OYSTER FORUM NEAR YOU TO FIND OUT!

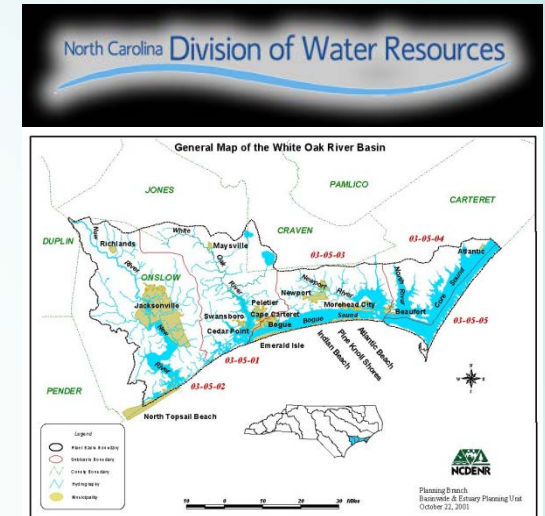
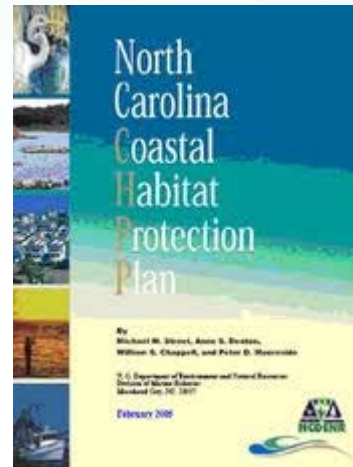
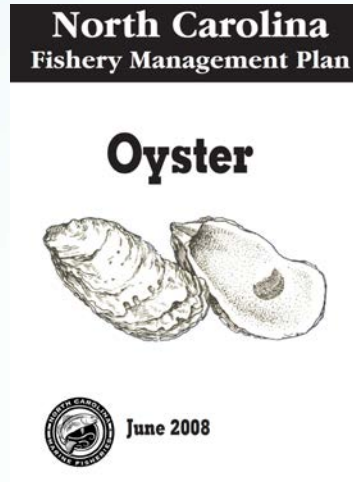
THE PUBLIC FORUM WILL FEATURE:
Educational poster displays & exhibits
Energizing field trips
Informative presentations from regional oyster experts

 Space is limited and pre-registration is required.
For a detailed agenda, field trip descriptions, and registration information contact the North Carolina Coastal Federation at 252-393-8185 or visit www.nccoast.org



Sustaining Oyster Blueprint Efforts

➤ Link to Planning Initiatives



➤ Funding

- 2005 Oyster Restoration & Protection Act
- CRFL Funding
- Federal – NOAA, ERA



Where do we go from here.....

- Clear and achievable goals and strategy for restoration and enhancement
- Updated Oyster Blueprint for 2015-20
- Resources and research needs identified
- Broad stakeholder support
- Secure federal, state and private support

