



ISSC 2009

Shellfish Restoration Committee

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Shellfish Restoration in New Hampshire

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Presentation Overview

- **Why oysters?**
- **Oyster management in New Hampshire**
- **Status of NH oyster populations**
- **Partnerships for oyster restoration**
- **Restoration and harvest issues**

Why oysters?

Human harvest

- 1,500+ oyster licenses some years
- NO commercial harvest
- Two oyster farms

Ecosystem services

- Habitat creation
- Food for other species
- Material cycling and sequestration
- Filter feeding/water quality effects

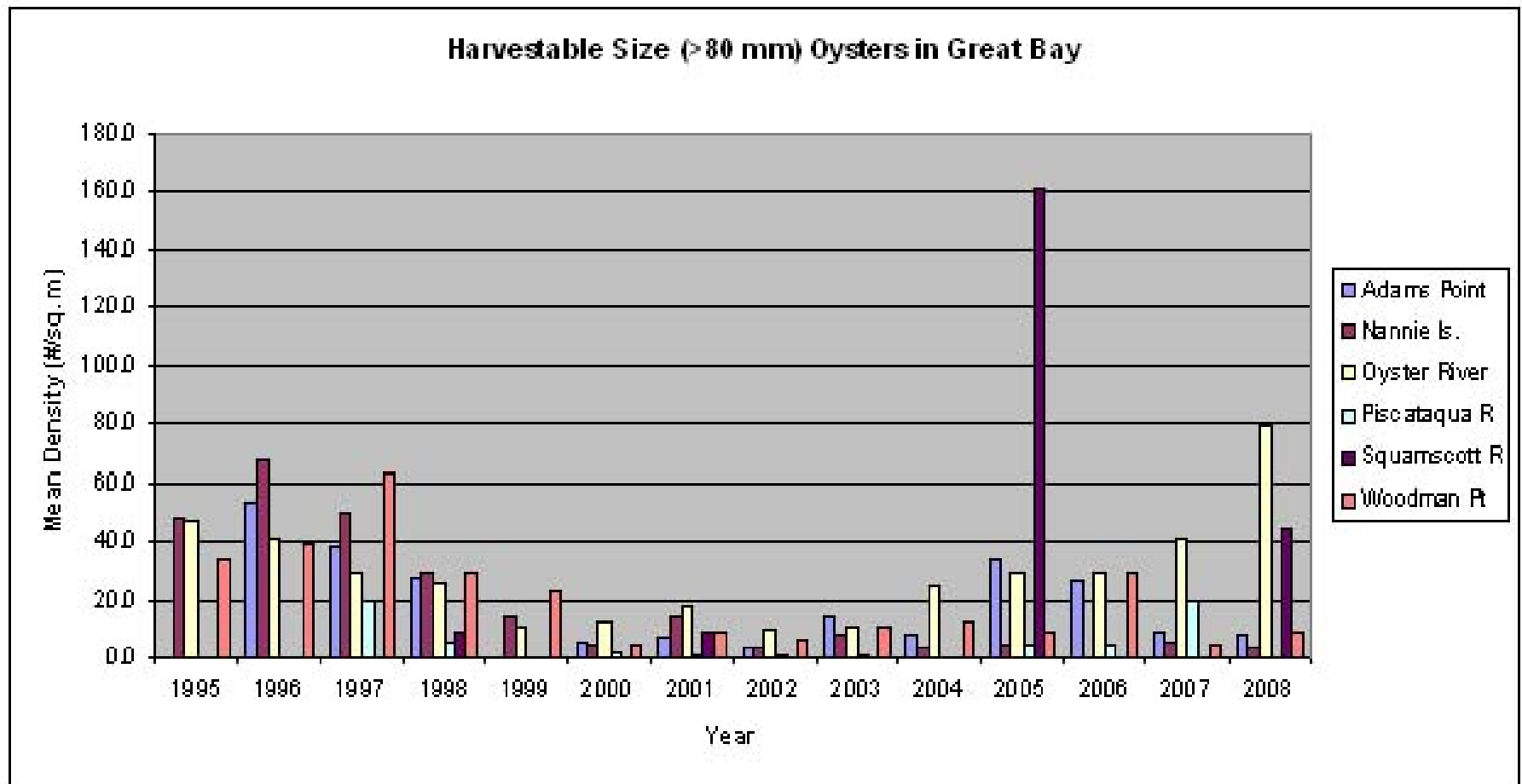


Oyster Management



- **Fish and Game Department**
 - Resource monitoring
 - Recreational harvesting
 - Aquaculture
- **Department of Environmental Services**
 - Water quality management
 - Aquaculture
- **Piscataqua Region Estuaries Partnership**
 - Restoration goals and funding
- **University of New Hampshire**
 - Restoration research and implementation

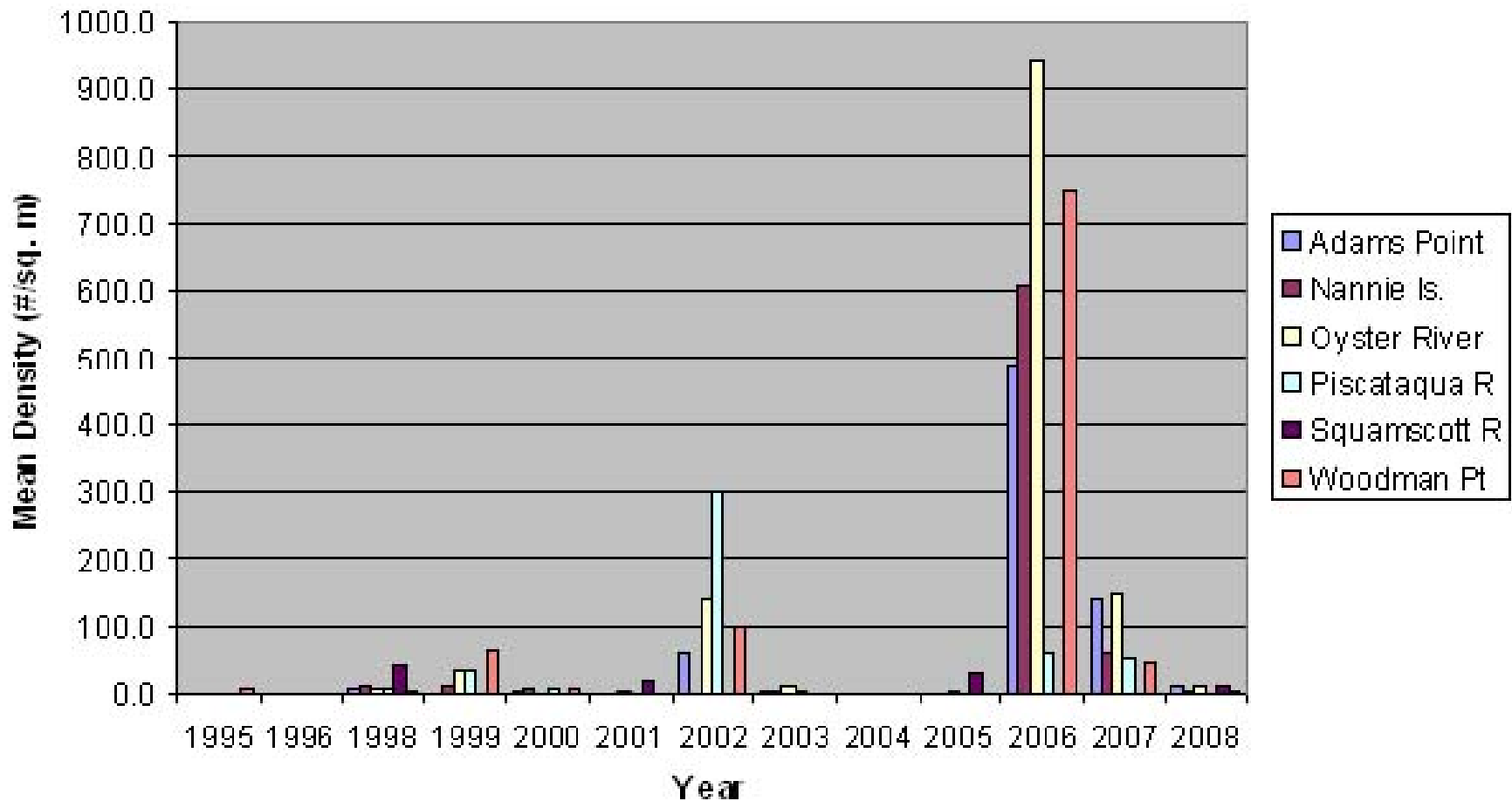
Status of NH Oysters



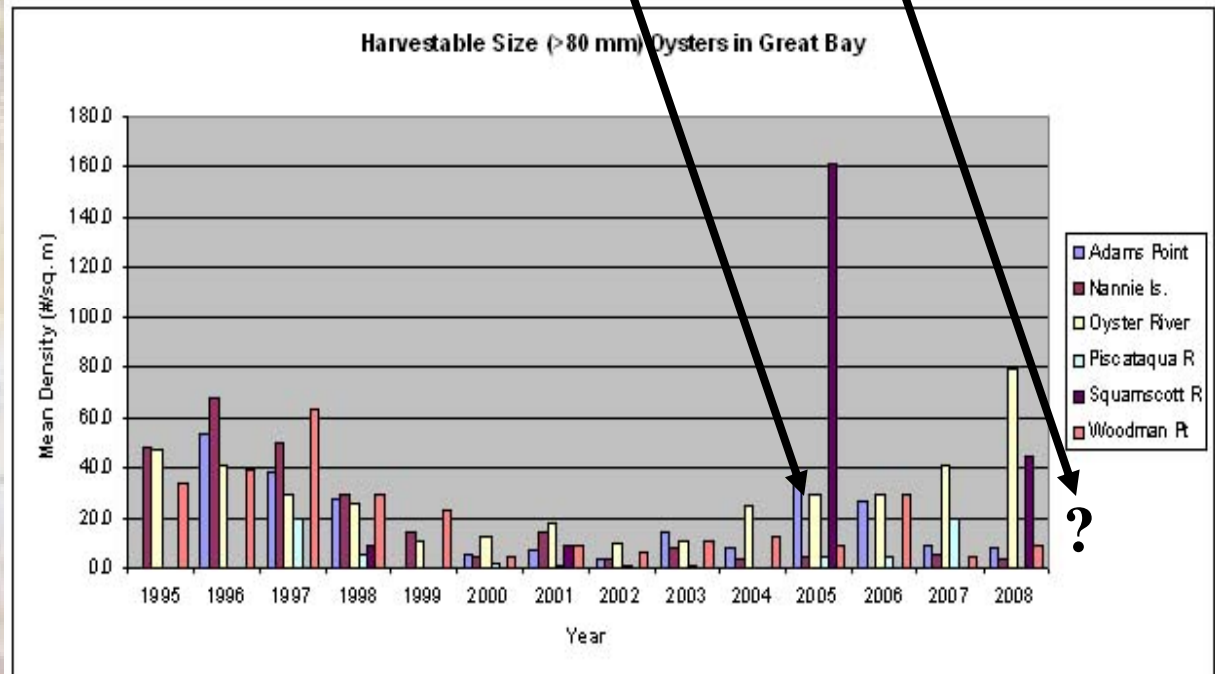
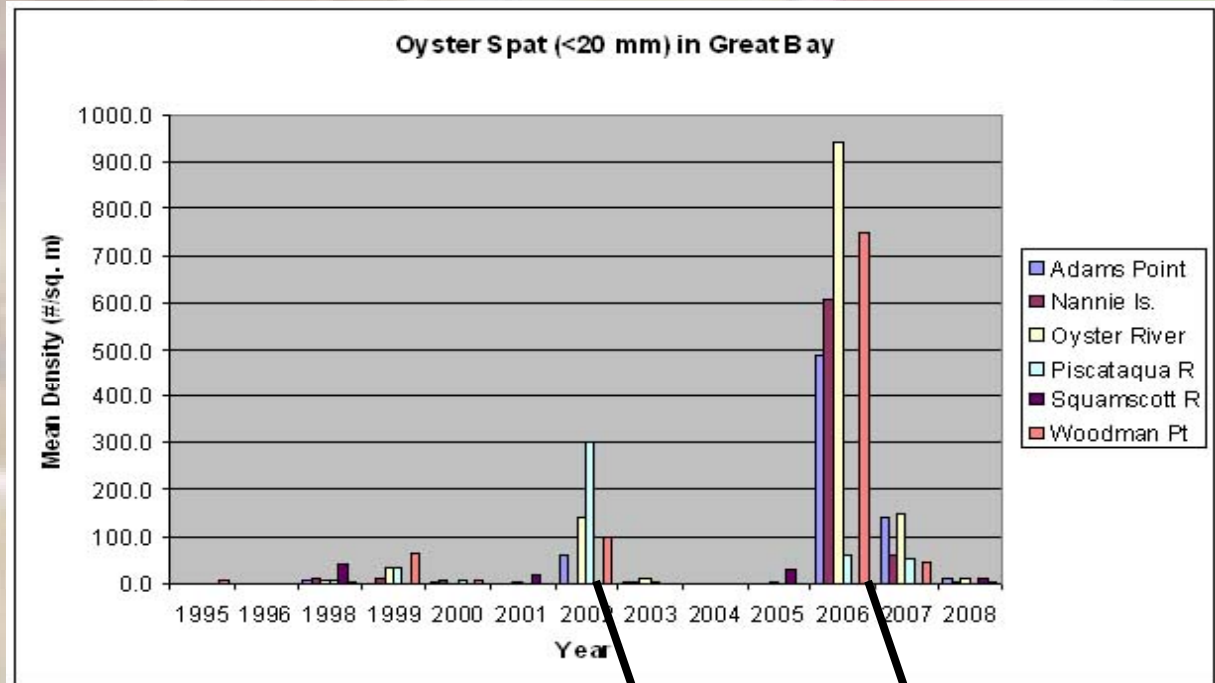
(Data from NH Fish & Game Department; graphics from Phil Trowbridge, PREP)

Status of NH Oysters

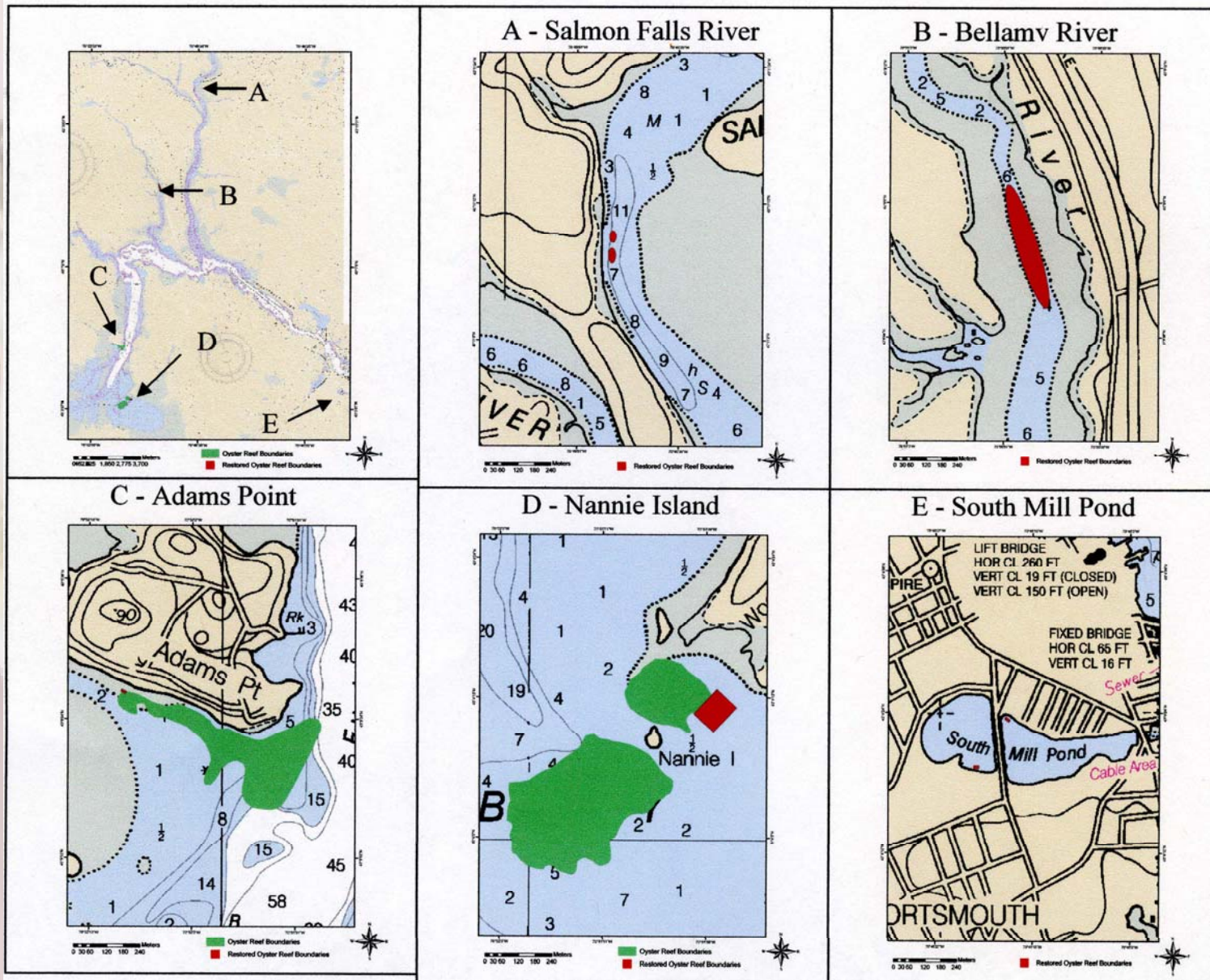
Oyster Spat (<20 mm) in Great Bay



- Good spat sets in 2002 and 2007
- 2002 spat reached harvest size in 2005
- 2007 spat *may* reach harvest size in 2010
- Extraordinary spat set in 2006
- some 2006 spat reached harvest size in 2009



Oyster Restoration Projects



New Hampshire Shellfish Restoration Summary - October 2009

Restoration Site, Size	Restoration Methods	Species Involved	Construction Date	Success Metrics	Last Observation Date	General Condition at Last Sampling
Salmon Falls River, 0.1 acre	adult transfer, spat-on-shell	<i>Crassostrea virginica</i>	2000	shellfish density & size; water filtration	2007	high oyster density from 2006 natural spat set
South Mill Pond, 0.05 acre	adult transfer, spat-on-shell	<i>Crassostrea virginica</i> ; <i>Mytilus edulis</i>	2001	shellfish density & size; water filtration	2007	~100% mortality of mussels and oyster
Adams Point (Great Bay), 0.05 acre	gravel base, spat-on-shell	<i>Crassostrea virginica</i>	2003	shellfish density & size	2006	heavy silt accumulation; ~100% oyster mortality
Nannie Island (Great Bay), 2.5 acres	gravel base, spat-on-shell	<i>Crassostrea virginica</i>	2004	shellfish density & size	2006	high oyster density from 2006 natural spat set
Bellamy River, 1.55 acres	adult transfer, spat-on-shell	<i>Crassostrea virginica</i> ; <i>Mytilus edulis</i>	2005 - 2007	shellfish density & size	2008	moderate oyster density from 2006 natural spat set; 100% mussel mortality
Nannie Island (Great Bay), 1.5 acres	spat-on-shell	<i>Crassostrea virginica</i>	2007	shellfish density & size; resident plants and	2009	~80% spat mortality; high density from 2006 natural spat set
Oyster River (TNC), 0.2 acre	shell planting, spat-on-shell	<i>Crassostrea virginica</i>	2009	shellfish density & size	2009	substantial 2009 natural spat set
Berry's Brook, 1.0 acre	shell planting, spat-on-shell	<i>Crassostrea virginica</i>	2009	shellfish density & size; water filtration; associated animals	2009	(no post-construction data)
	-- Project conducted in CLOSED waters					

Partnerships for Oyster Restoration

Management Agencies

- **New Hampshire Fish and Game Department**
- **New Hampshire Department of Environmental Services**
- **Piscataqua Region Estuaries Partnership**

Partnerships for Oyster Restoration

Citizens

- **Oyster Conservationists (TNC and NRCS)**
- **Recreational harvesters (shell recycling)**
- **Oyster farmers (NRCS)**
- **Students and teachers (Portsmouth)**



Partnerships for Oyster Restoration

Funding Agencies

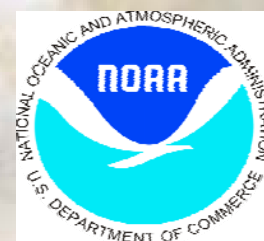
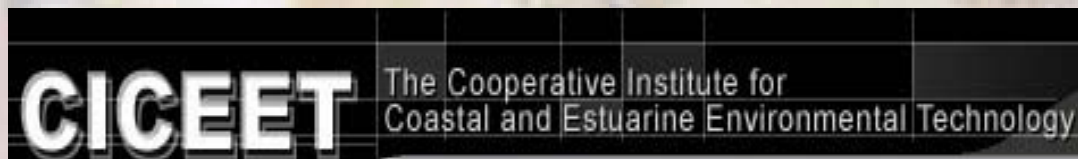
- **Piscataqua Region Estuaries Partnership**
- **US Environmental Protection Agency**
- **National Oceanic & Atmospheric Admin.**
- **Natural Resources Conservation Service**
- **Cooperative Institute for Coastal and Estuarine Environmental Technology**
- **National Estuarine Research Reserve System**
- **New Hampshire Sea Grant**
- **The Nature Conservancy**
- **City of Dover**

Restoration and Harvest Issues

- Open vs. closed waters
 - “wasting money” on oysters in closed areas
 - public health concerns
- Oyster conservationists (a.k.a. gardeners)
 - most in closed waters
- Post-restoration issues
 - resumption of harvest?
 - funding for monitoring and maintenance

Acknowledgments

- Jennifer Greene, Holly Abeels, Krystin Ward, Mark Capone
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- Bruce Smith, Phil Trowbridge, Ray Konisky
- Becky Zeiber, Tim Wacker, Molly Bolster, Barbara Maurer



Even the Governor likes oysters!

