TNC Shellfish Restoration: Past, Present & Future

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Marine Initiative, April 2004
Where we work on marine projects

- 25 coastal countries
- 24 coastal states

- 1990: 15 sites
- 1995: 30 sites
- 2000: 45 sites
- 2004: 100+ sites

- 25 coastal countries & 24 coastal states
the Marine Initiative

areas of focus

• Setting priorities for marine conservation
• Building coral reef conservation to last
• Pioneering nearshore conservation strategies

mili atoll
Innovative Nearshore Marine Conservation Strategies

- Restoration
- Ownership and leasing
- Nursery area protection
- Seas to summits
- Local partnerships
- Supportive policies

Great South Bay, New York
Community-Based Restoration

2001-2003 NOAA partnership restoration sites
An Expanded Vision for Restoration

- Move beyond piecemeal restoration efforts
- Act on appropriate scales at key focus areas
  - Ecoregions where we have existing plans and capacity
  - Shellfish ecosystems nationwide
  - Catalyzing further innovations in restoration
- Leverage match opportunities
Our Shellfish Restoration

- Peconic Bay, NY
- Great South Bay, NY
- VA Coast Reserve
- Pamlico Sound, NC
- Bay St. Louis, MS
- Puget Sound, WA
- Cobscook Bay, ME
Constructing oyster reefs in Pamlico Sound

- Oyster spawning sanctuaries at two restoration sites (26 reefs in 45 acres)
- Shell-recycling program and oyster gardening with local partners
- GOAL: Enhance estuarine diversity and build citizen support for a broader, comprehensive estuarine restoration program
Sub-tidal ownership in Long Island

Benefits of ownership
• restoration
• co-management
• leverage
Bluepoints Projects

Baseline Data
• Historical data collection, GIS mapping & analysis
• Eelgrass mapping (DOS)
• Benthic mapping (DEC)
• Hard Clam distribution
• Management/restoration experiments & monitoring

Restoration, protection & use
• Eelgrass restoration and preservation
• Hard clam and scallop restoration & spawner sanctuaries
• Small-scale, eco-friendly aquaculture
• Public harvest of wild resources
Peconic Estuary: Pipes Cove

- 199 acres
- Bay bottom management plan
  - Spawner sanctuaries
  - Eelgrass restoration
  - Sustainable aquaculture
  - Research & monitoring
- Coordinated with land preservation efforts
Shellfish Spawner Sanctuaries & Scallop Release Sites
Peconic Estuary & Quantuck Bay, New York
Peconic Bay Ecosystem Restoration
A New Strategy for Marine Conservation

- Opportunity to lease/own submerged land in many states and some countries
- Can be teamed effectively with shellfish restoration to integrate action on lands, rivers and seas
- Opens door to working cooperatively with fishermen and others
- Can engage on state policy
- Uses the Conservancy’s 50 years of land acquisition and management experience
Developing a Shellfish Network: Why?

- Shellfish are at a crossroads
- Little conservation
- Most restoration fishery focused
- Ecosystem benefits understood by scientists; not public
- Goals & Scale of Problem not well articulated
- Lack of Constituency & Funding-- political & cultural
The Nascent Development of a Network

- Initial meeting (internal + CBF, NOAA Restoration & SG)
- Raise private funds to support efforts with CRP
- Compiled info on TNC sites; then CRP, SG sites
- Develop fact sheet that describes present work & future path & needs
- Commission sci. rev. to improve project design/monitoring
- Workshop-- review findings, develop specific
- Require TNC-NOAA CRP sites to test/follow
- Include additional partners/sites
Some Steps in Monitoring

• Working group TNC (MI, Measures), NOAA CRP, + others
• Identify a priori characteristics of ideal measures.
• Identify 2+ different monitoring schemes (e.g., MoS, NOAA, ANOSIM)
• Test these schemes against one another at 2+ sites; Separate funding available
• Compare results to a priori characteristics
• Publish results of comparison
Monitoring Approaches

- We can count Species Abundance and Diversity
- Often Presence/Absence will do
- Must use BACR designs (Before, After, Control, Restoration)
- Powerful, non-parametric, multivariate methods, e.g., ANOSIM (e.g., http://www.pml.ac.uk/primer/)
- Commonly used in impact studies; Aus, NZ, Europe, but not in restoration and the US
Opportunities?

There is much overlap in the activities of projects, people & groups:

- Coordinate activities; help to determine network direction
- Help develop/review recommendations for project design
- Partner with TNC Site-specific restoration
- Recommend applicants for TNC Restoration Prog. Dir.
- Identify joint monitoring methods & test sites