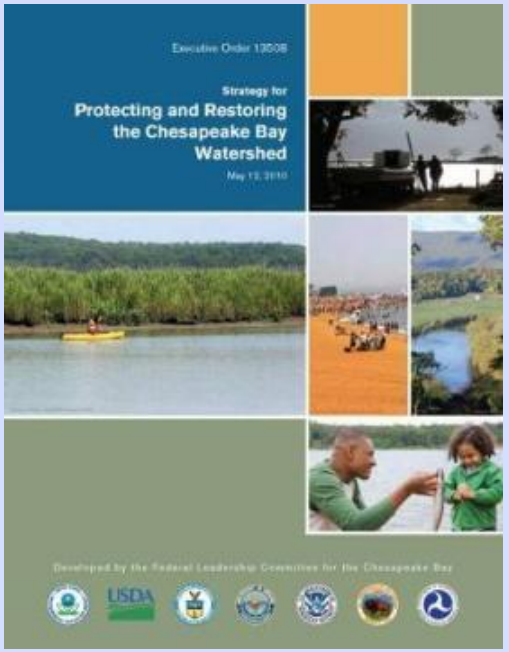
Collaborative, Tributary-scale Oyster Restoration

Peyton Robertson

STAC Meeting 12-14-11

Executive Order Oyster Outcome

Outcome: Restore native oyster habitat and populations in 20 out of 35-40 candidate tributaries by 2025.
(Current condition: 0 tributaries with fully restored oysters populations; several with successful living oyster reef habitat)



Actions:

1. Launch a Bay-wide oyster strategy using scientific support for decision-making
2. Restore priority tributaries
3. Expand commercial aquaculture
4. Collect and Organize information to identify and prioritize oyster restoration tributaries
5. Use science to evaluate oyster restoration progress

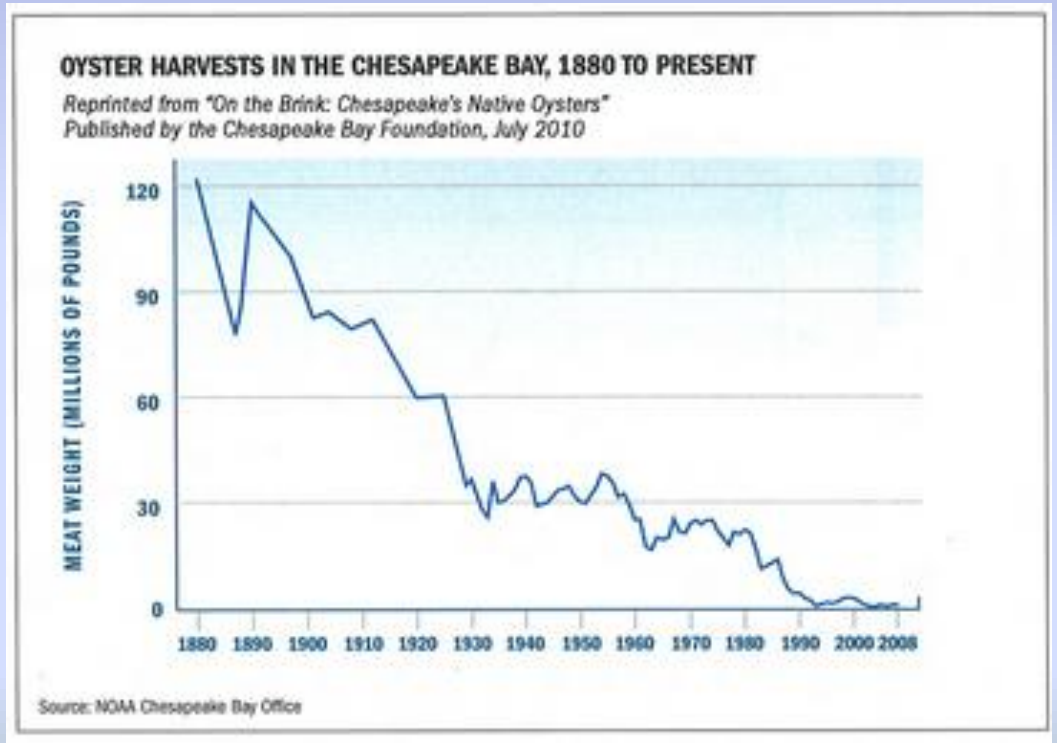
Background: Ecological Value

- Oysters as filters = water clarity
- Oyster reef structure = habitat
- Food source for humans and fish

Background: Status of the Resource

- Disease, overfishing, habitat degradation have reduced oyster populations to less than 1% historical abundance

- Economic and ecological value are similarly diminished.

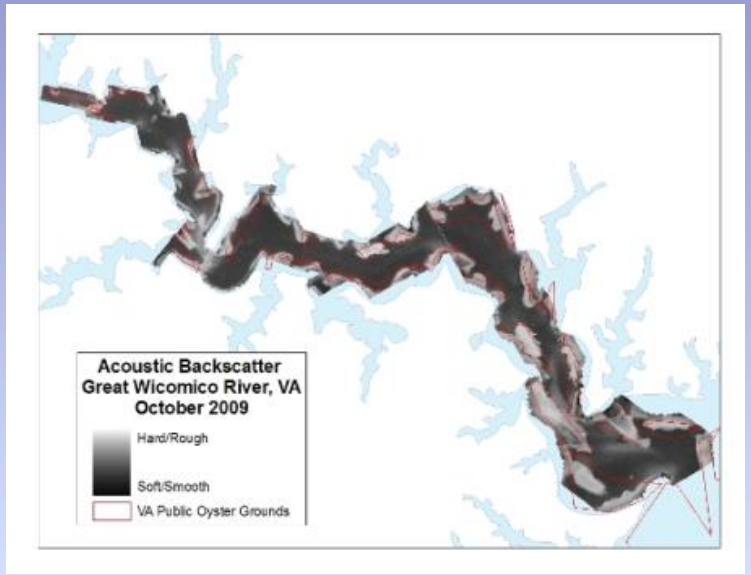


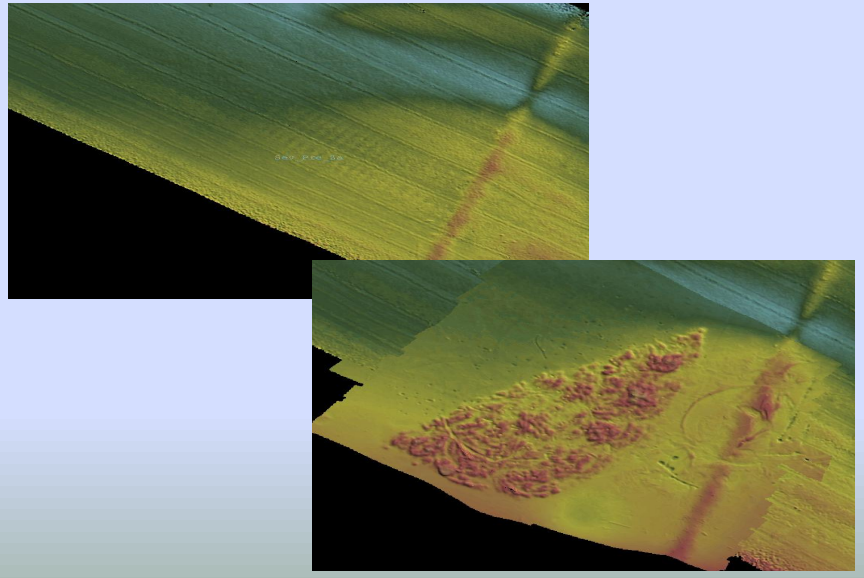
Action 1: Launch Bay-wide Oyster Strategy

- Bay-wide coordination and oversight for native oyster restoration:
  - Strengthened federal partnership between NOAA and the U.S. Army Corps of Engineers
  - A roadmap for the Sustainable Fisheries Goal Implementation Team that integrates:
    - ecological restoration
    - sustainable public fishery
    - aquaculture
  - Coordinated Federal and State planning
    - Maryland and Virginia Interagency Technical Teams
    - USACE Master Plan

Action 2: Restore priority tributaries

- Tributary selection: Provide high resolution mapping to inform trib selection (side scan, multibeam sonar and video)
  - In MD: Harris Creek selected; Little Choptank tentatively selected
- Site selection for restoration projects within a selected trib: provide mapping
- Post-construction evaluation: use sonar to determine change in reef footprint, spatial complexity, paired with analysis of oyster recruitment, survival, growth





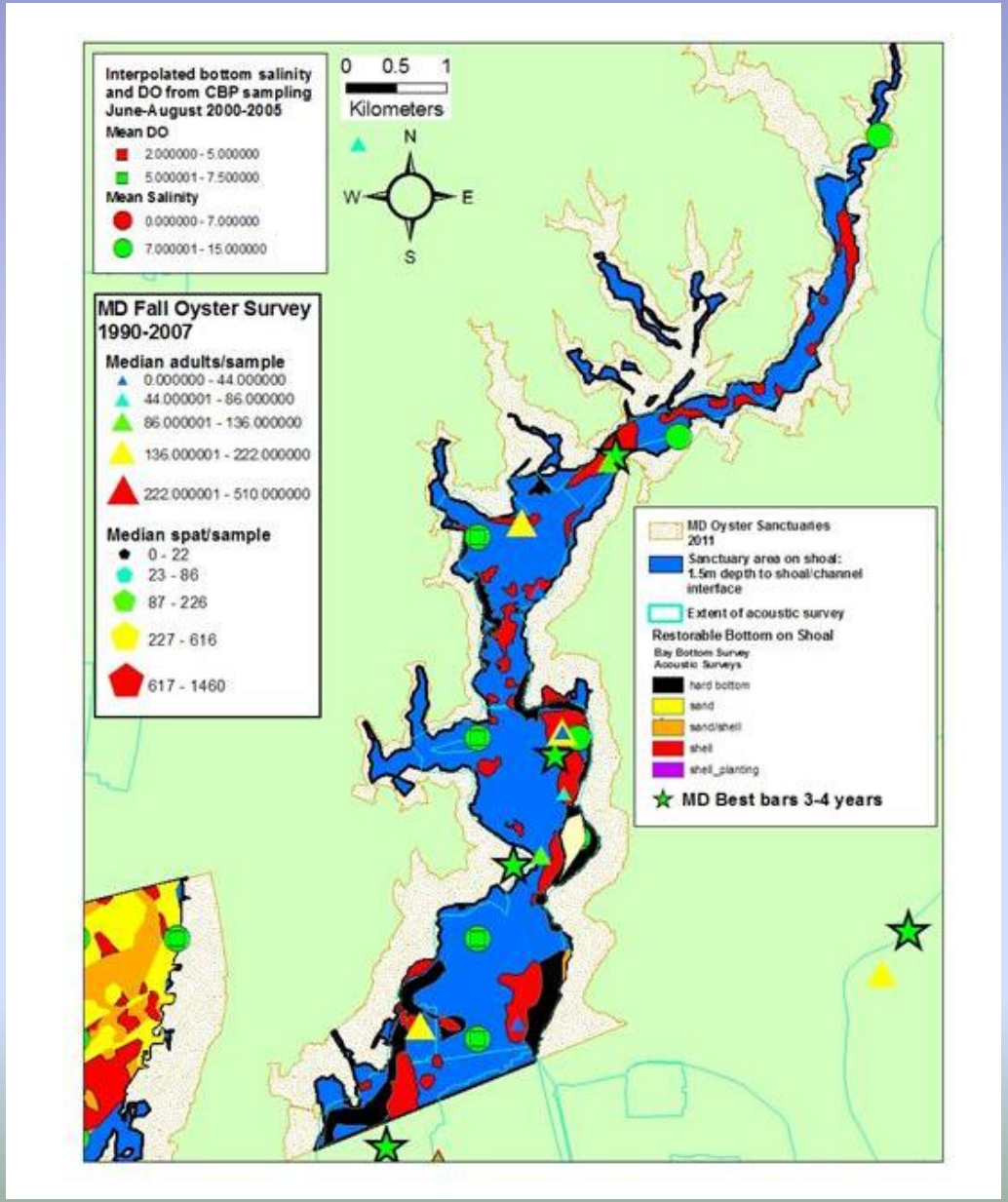
Action 3: Expand Commercial Aquaculture

- Funding assistance to support watermen
- Training and extension services
- Oyster Data Tool for site selection

Action 4: Collect and Organize Information

Develop Oyster Data Tool

- Spatial visualization of oyster data (population surveys, harvest, disease, bathymetry, habitat, and restoration activities)
- Managers can pull up information for a given bar at the click of a mouse
- Facilitates targeting of new restoration and evaluation of past projects

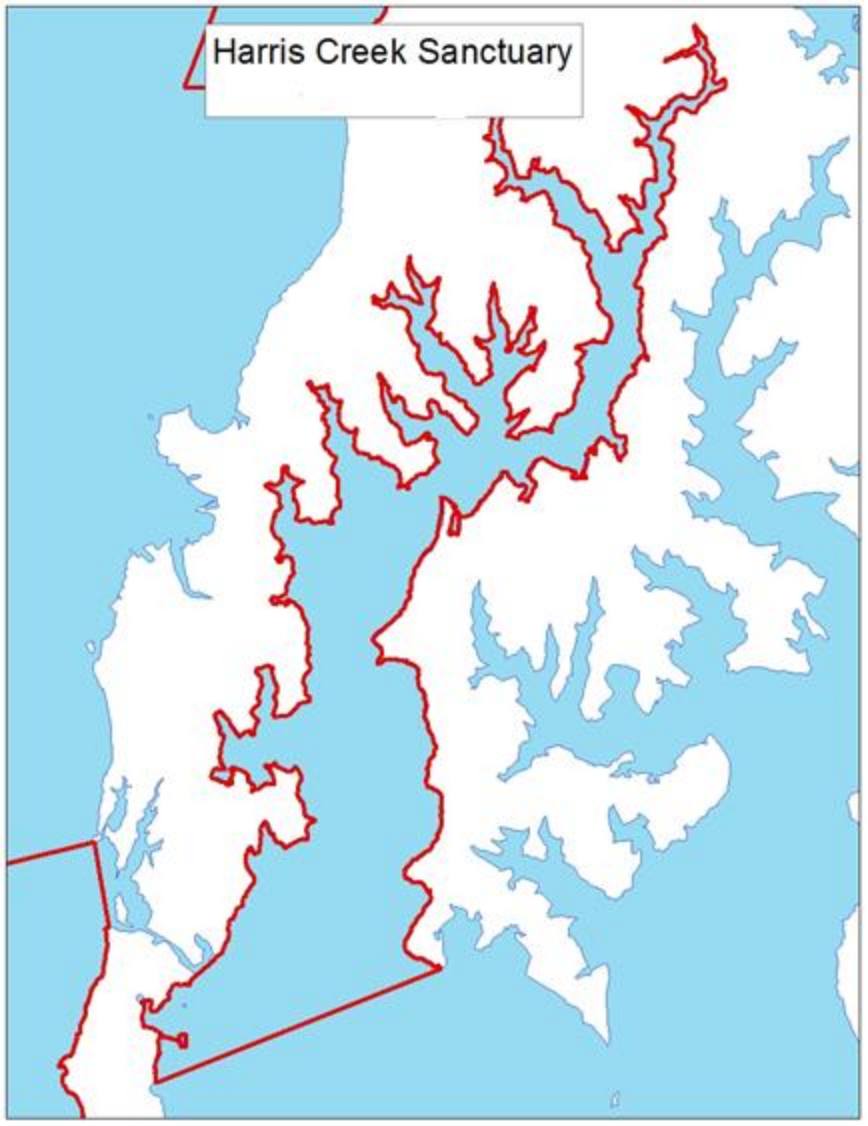


Action 5: Use science to evaluate progress

- Developed common success/ performance metrics via Bay-wide, interagency "Oyster Metrics Team"
  - NOAA, Army Corps, DNR, VMRC, advised by academics
  - Reef and tributary-level targets
  - *Functional* goals:
    - a greatly enhanced oyster population
    - increased ecosystem services
    - a sustainable fishery
  - *Operational* goals*:*
    - Quantity of shell or spat-on-shell to plant
    - how many reefs in a tributary
    - oyster abundance after a few years

An Example: Harris Creek

- MD Sanctuary
- Meets USACE Master Plan criteria
- Mapped by NOAA
- 600 restorable acres (300 acre minimum goal per Oyster Metrics)
- USACE plans to build 22 acres of new reefs in 2012
- NOAA has funded ORP to plant spat-on-shell on those acres in 2012
- NOAA-funded population survey under way to inform where to plant additional spat-on-shell on existing good-quality bottom in 2012.



Next Steps

- Develop list of priority tributaries using science-based tools
- Support oyster research
- Quantify ecosystem services
- Address substrate limitations (decline in available shell)
- Consider other management options (e.g., fishing restrictions)
- …Be Adaptive!