Industry Involvement in the Management of Public Shellfish Areas

With Industry Involvement…

Can we move away from a put and take fishery?

How do we move closer to a more sustainable fishery?

Oyster Restoration and Aquaculture Development Plan
Proposed Regulations 2010

Regional Oyster Industry Advisory Committees

"While not specifically identified in a plan at this time, the Department is committed to enhancing and/or establishing the process to obtain advisory information pertaining to the management of Maryland's public oyster fishery from the oyster industry."

Calvert County Oyster Committee

- Met with DNR representatives to discuss the industry's funds in early 2012
- Given the option to participate in State shell reclamation → Declined
- Submitted an initial proposal to uncover silted shell in the Patuxent River PSFAs March 14, 2012
- With pressure to use our funds and no response, purchased seed
- Industry observations suggest a high spatfall in the Patuxent → a missed opportunity

In August 2012, 15,700 bushel of shell was removed from the Calvert bay shore sanctuary even though our county declined to participate in the large scale dredge project

Those affected included:
-Recreational Fishermen
-Commercial Fishermen
-Commercial Crabbers
-Sanctuary Advocates

The Calvert County Oyster Committee was contacted by each of these groups wanting to know why this area was targeted as a source of shell. Without notice from the Department, we were unable to provide answers.

On September 13, 2012 the Calvert Oyster Committee met with the Department, a second time, to ask for their help in reclaiming silted shells and expanding bars in the Patuxent River Public Fishery.

Patuxent River Industry's
Targeted Restoration Goals and Objectives

Objective

Clean shell covered with sediment to encourage a natural "strike" of spat.

Goal

Increase natural spat recruitment in the Patuxent River in order to support a more sustainable public fishery.

10 Point Oyster Restoration Plan

GOAL #1

"Set Goals to maximize ecological benefits, facilitate population recovery, and create positive outcomes for the commercial fishery."

How the Oyster Committee's goal is different from the Department's large scale dredge programs

- The proposal will not strip-mine an area by moving the shell to another bar, county, or region.
- The active Patuxent River oyster harvesters chosen to reclaim the silted shell will have a vested interest in the river and a working knowledge of the size, shape, and characteristics of the bars.
- This will be a small project with a specific goal—increase the size of productive, public oyster bars for the purpose of natural spat recruitment.

TIMING

If we want the Department's Support…

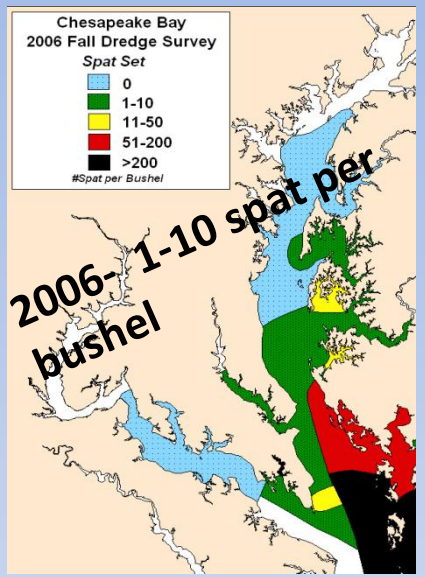
Establish Spatfall
Validate Shell Cleaning

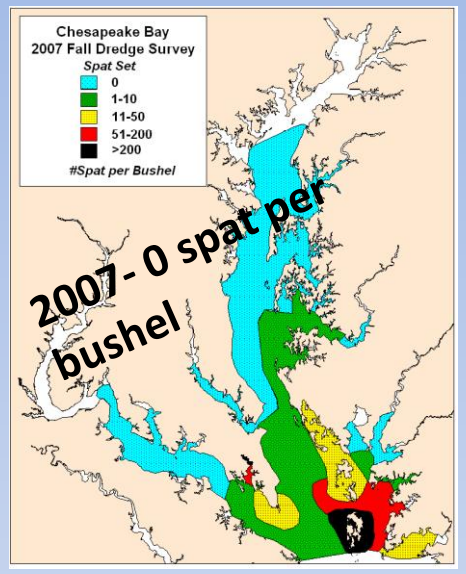
Establishing Spatfall in the Patuxent

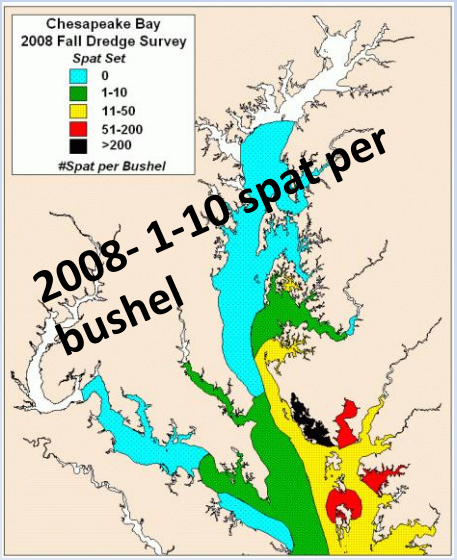
Oyster Management Plan
Patuxent River- Zone 2

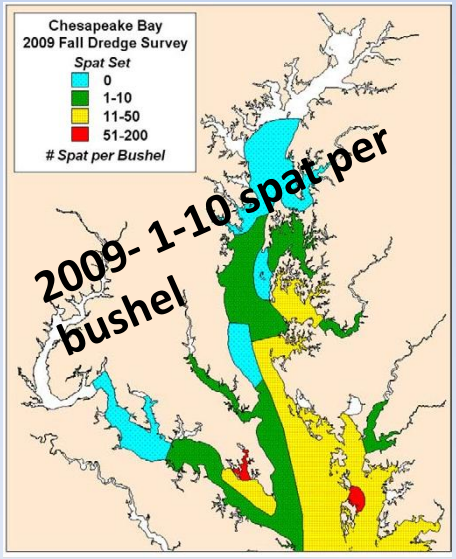
- Experiences a range of spat settlement from low to moderate to high.
- When disease mortality lessens, this zone can experience rapid recovery of populations and biomass due to increased survival in combination with successful *recruitment.*
- Public oyster grounds and restoration activities that occur within this area will have varying results depending on environmental and disease conditions.

Establishing Spatfall in the Patuxent









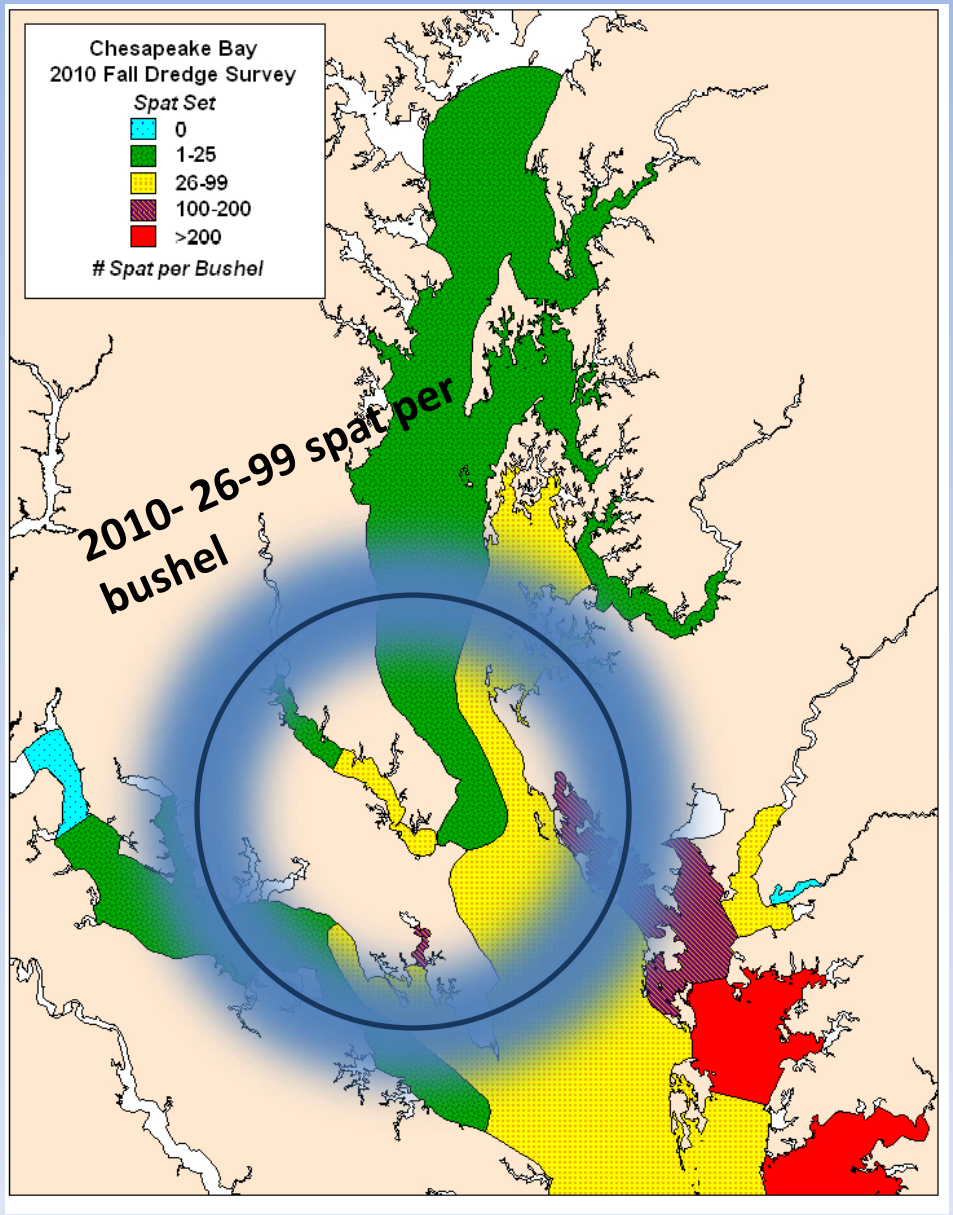
Industry's Questions

Is the fall survey a good indication of site specific potential?

What have we been harvesting on bars that were not seeded?

Would harvest records suggest the site specific spatfall in the Patuxent is higher than indicated by the fall surveys?

Establishing Spatfall in the Patuxent



Industry's Questions

Is there a correlation between worked areas and spatfall?

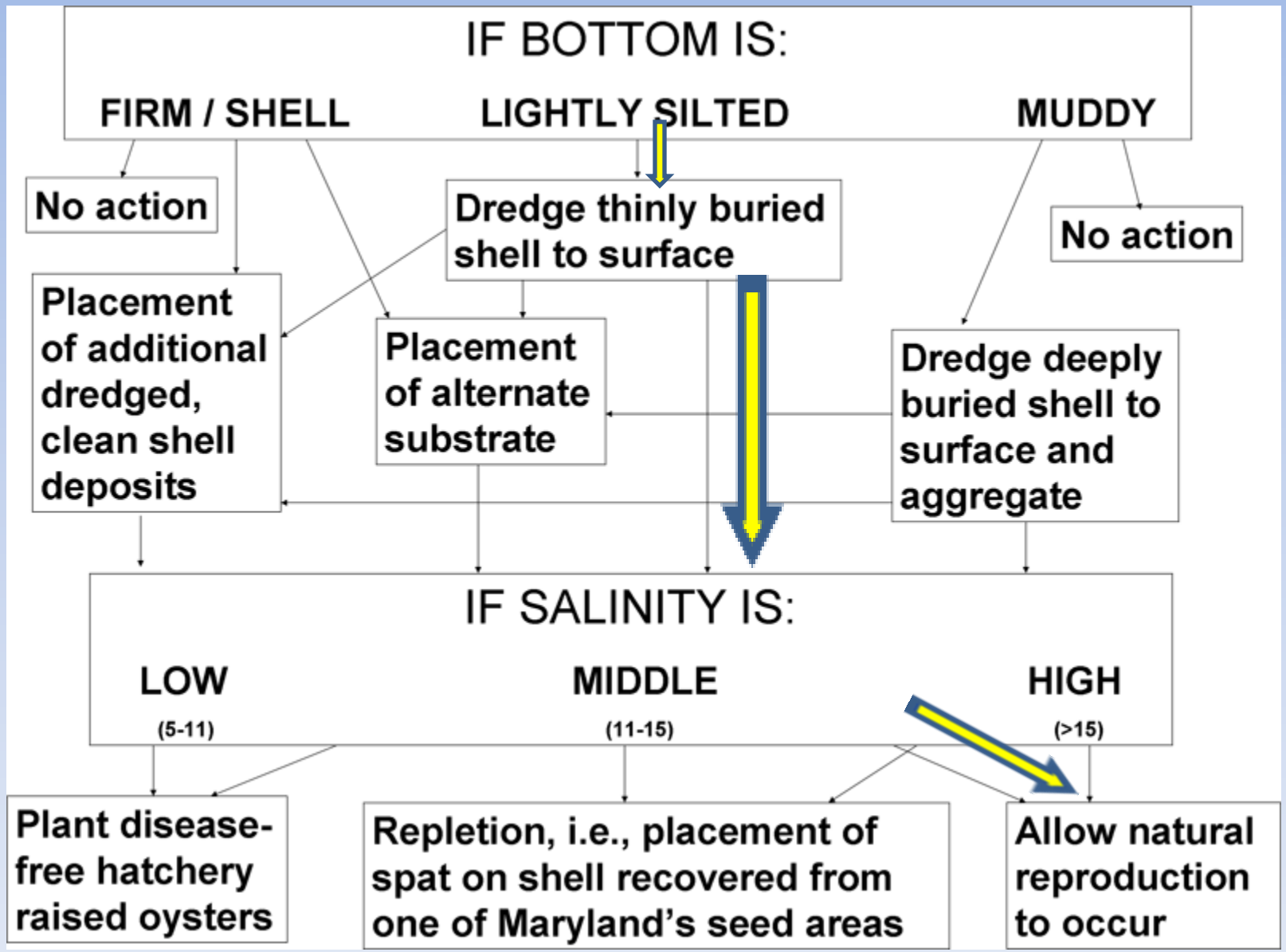
- Patent tong areas in the Patuxent
- Dredging is prohibited in the Patuxent.

Addressing the Shell Shortage

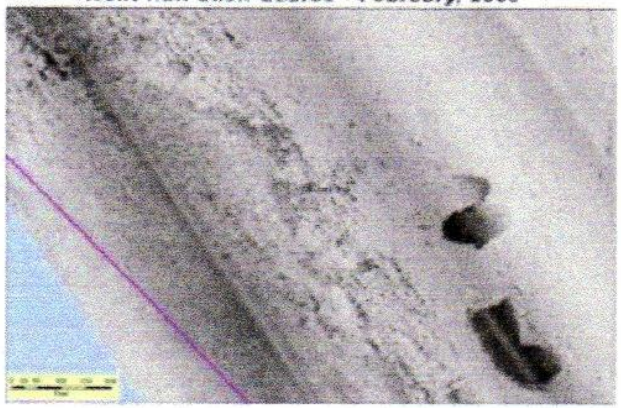
"Another source of shell is the shell already present on an oyster bar. Most of this is covered by sediment ranging from a thin layer of silt to thicker deposits of sand or mud and could be extracted and recycled in place to rehabilitate local habitat."

- 2004 Oyster Management Plan

Dredging to Recover Shell
10 Point Oyster Restoration Plan



Trent Hall Shell Source - February, 2009



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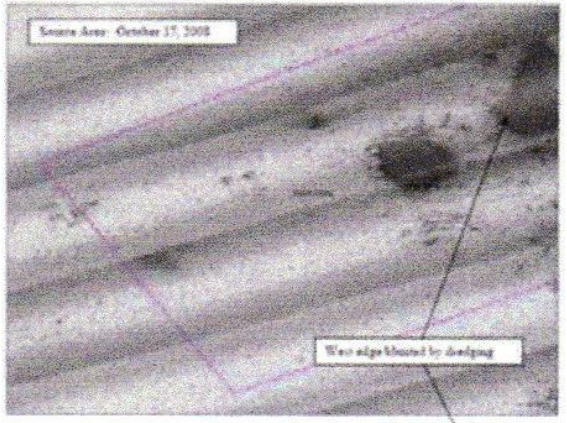
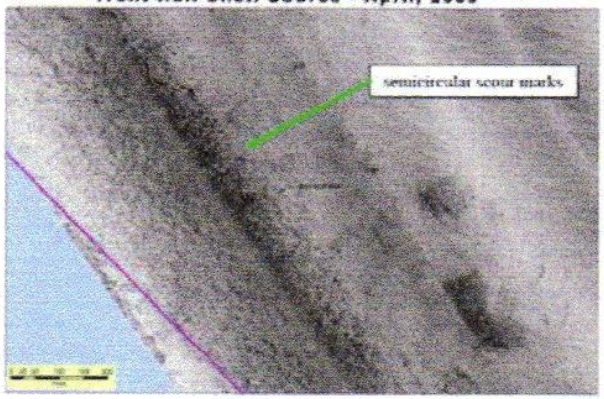


Trent Hall Shell Source - April, 2009



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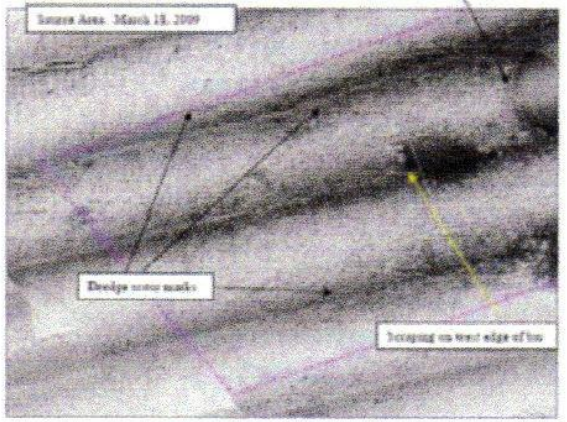

Figure 7: Pre- and post-dredge source area

The panels above demonstrate that dredging can be an effective tool for increasing hard substrate. The amount of shell exposed on the river bottom (darkened areas) has increased.

The panels above show that dredging can also be damaging to reefs. Dredging has damaged the west edge of the oyster bar in the top right corner of the photo.

Carefully targeted dredging for specific objectives can be beneficial. Widespread, uncoordinated efforts are less likely to result in real results beneficial to oysters.

Source: DNR, 10 Point Oyster Restoration Open House Presentation

OYSTER AQUACULTURE

from "**Stabilizing Oyster Ground" Maryland Sea Grant Extension**

- Grounds do not need to be spread with cultch each year. This expense is incurred only at the beginning of the initial planting process or in rehabilitating older grounds that have become overburdened with sediment or where the shells have sunk into the bottom. **Over time, grounds that are not maintained will be covered with sediment, which can smother oysters and prevent a natural "strike" of spat.**
- **In some areas rehabilitation need only occur infrequently since the bottom will be worked by planting and harvesting and the old cultch will remain fairly clean due to the dredging action.**
- Another method is to use certain agricultural equipment to turn the shell over and clean it off. In some regions of the country, agricultural harrows have been used and are highly regarded. Harrows come in various sizes. They are dragged by boat over the grounds when the tidal velocity is highest; the sediments suspended are thus carried away. This is usually done over several tidal cycles. This method is similar to "bagless dredging" which has been used for many years. Harrowing, however, is thought superior to bagless dredging for maintaining oyster bottom.
- In bagless dredging a towed dredge is used without the chain and mesh bag attached. In essence, the dredge serves as a rake with the teeth picking up shell on the bottom and allowing the sediment to be carried away with the tide. Dredges are not very wide, however, and the amount of bottom covered is limited.

Addressing the Shell Shortage

If shell cleaning is good for aquaculture,
it should be good for the public fishery.

Industry's Final Questions

How do we get the Department and stakeholders to support small scale, targeted restoration efforts in Public Shellfish Areas?

How do we work toward a more transparent management system that involves and is supported by all stakeholders?

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