MARYLAND DEPARTMENT OF NATURAL RESOURCES

Review of the

Five Year Oyster Review Report

Presentation Outline

- Appendix A – Sanctuary Areas
- Appendix B – Public Fishery (NOAA Code Harvest) Areas
  (The information in the appendices are utilized in chapters 4 and 5 of the report)

- Chapter 4
  - Results towards meeting objectives of each management area type

- Chapter 5
  - Metrics used to develop tiers
  - Tier results
  - Future alternatives for tiers

Appendix A - Sanctuaries

Information included:

- Acreage
- Salinity region
- Map of area: oyster bars, Fall Survey Oyster Dredge sample sites, MDE conditional and restricted areas
- Bottom Survey – Bay Bottom Survey (1974-1983) and more recent side sonar surveys
- Replenishment and restoration planting activities
- Oyster population information
  - Annual Fall Survey Oyster Dredge
    - Number of spat, smalls, and markets
    - Oyster size structure
    - Oyster biomass
    - Mortality
    - Disease – Dermo and MSX
  - Patent Tong Population Survey
    - Density of live oysters
    - Oyster size structure
    - Shell volume
- Harvest prior to becoming a sanctuary
- Water quality information

MDE = Maryland Department of the Environment

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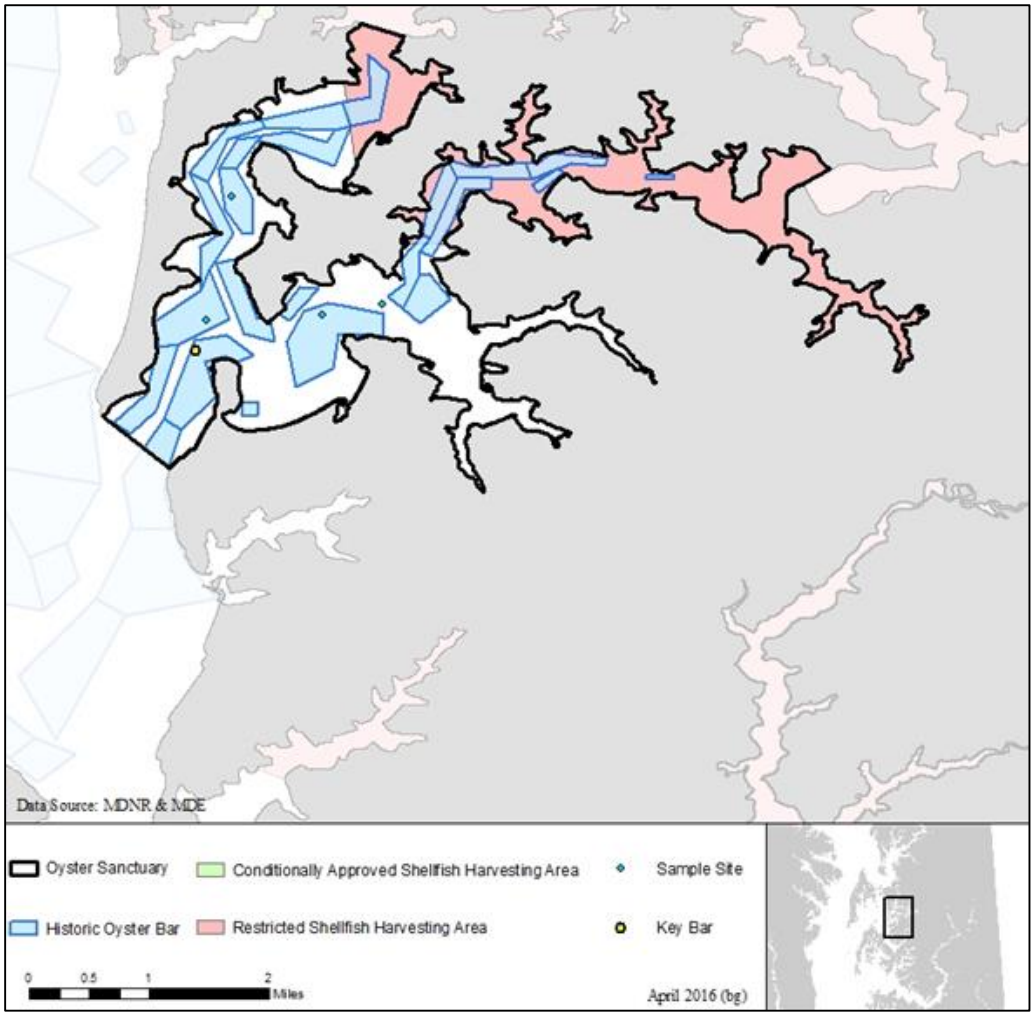
Appendix A – Wye River Sanctuary Example

Only presented information collected in the area that is now established as a sanctuary regardless of past designation

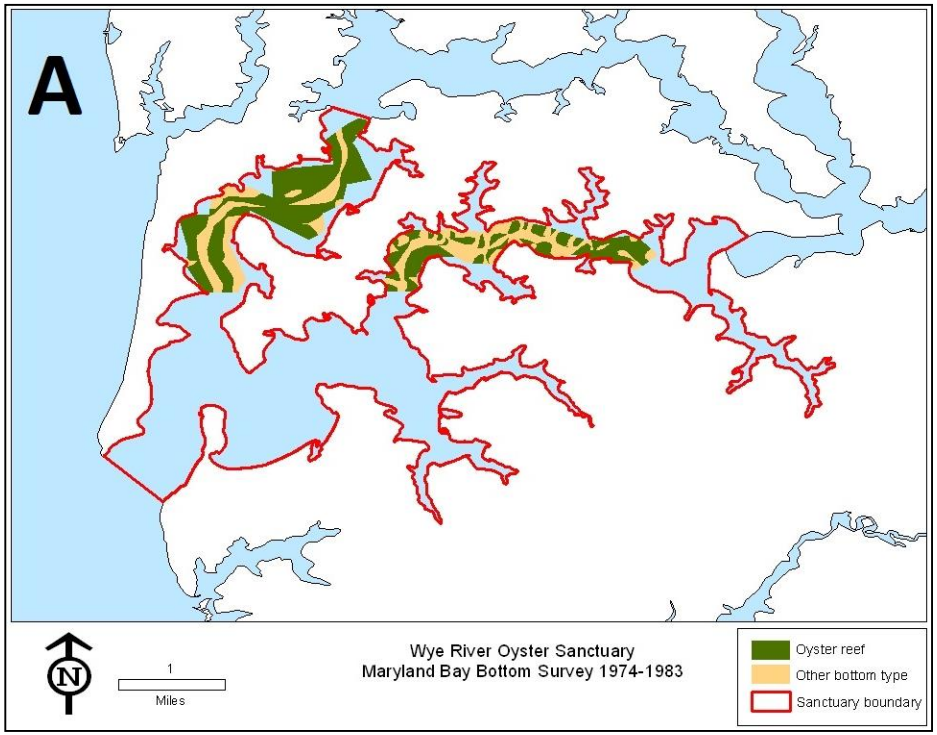
Overview map shows:

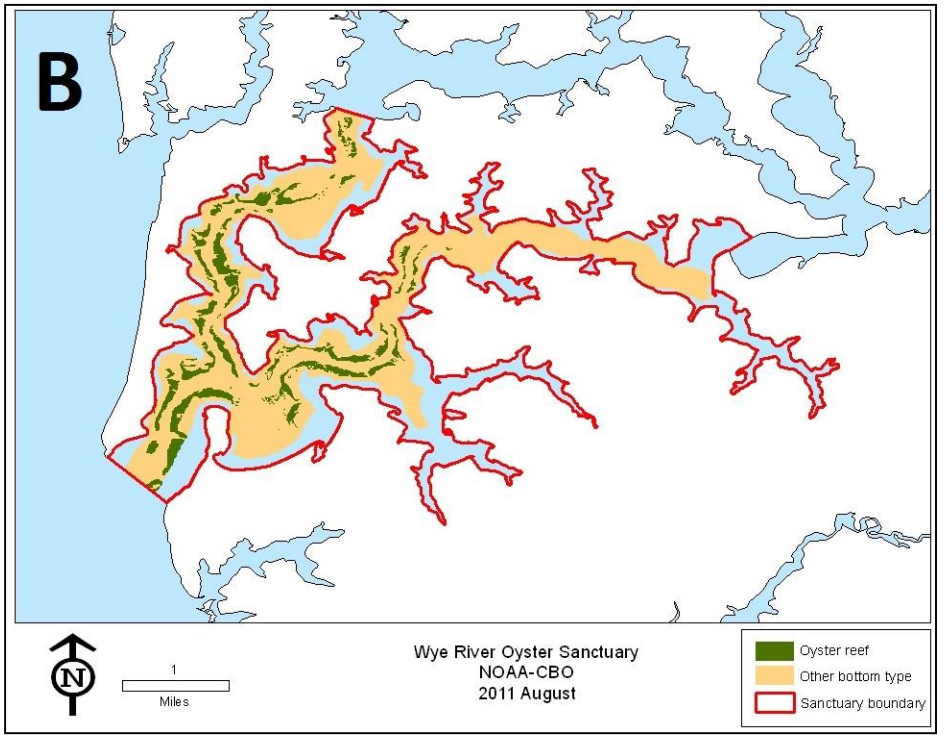
- Sanctuary boundary
- Historic, charted bars
- MDE Shellfish Areas
- Fall Survey sample sites
  - Regular samples
  - "Key" bar samples



Appendix A – Wye River Sanctuary Example

Bay Bottom Survey Maps





Maps shows:

- Surveyed bottom (green/tan areas)
- Extent of oyster bottom (green areas)

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Appendix A – Wye River Sanctuary Example

Table showing planting activities in the area:

- Replenishment plantings for fishery prior to the area becoming a sanctuary
- Restoration plantings after becoming a sanctuary
- Main activity types include: fresh shell, dredged shell, hatchery spat-on-shell, & natural wild seed

Planting activities occurring since 1990 in the area now established as the Wye Sanctuary in 2010.

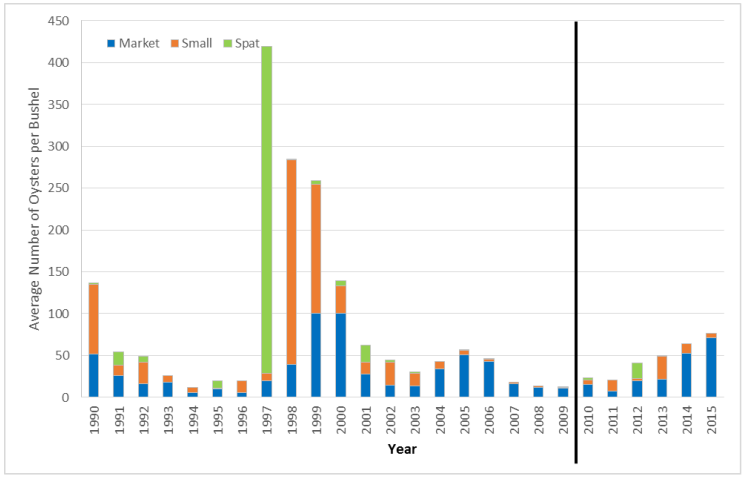
Year	Planting Substrate Type	Area Planted (acres)	Thousands of Bushels Planted	Millions of Spat Planted
1990	Wild Seed	23.8	11.23	-
1998	Wild Seed	12.9	8.81	-
2001	Fresh Shell	10.9	62.75	-

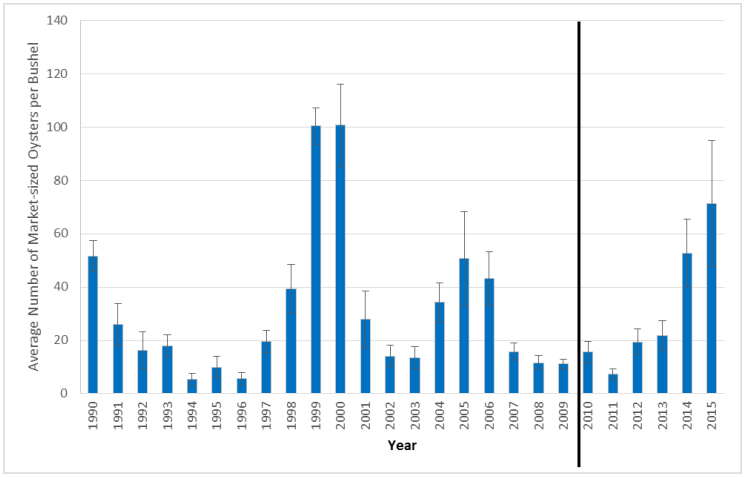
Marylanders Grow Oysters Activity

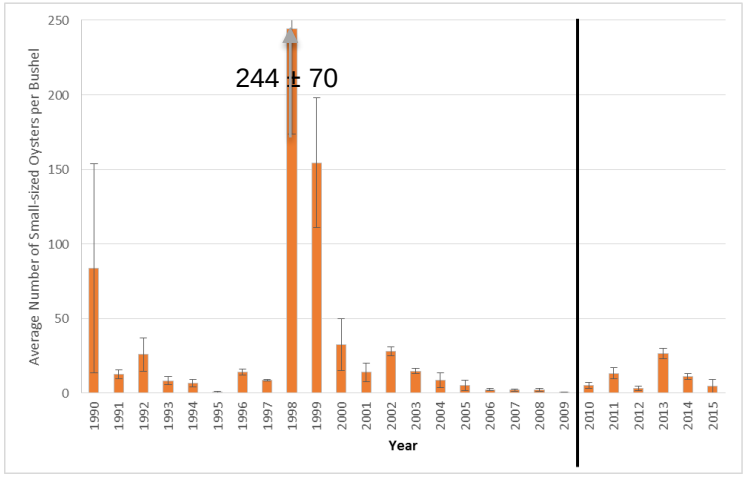
- 2016: 100 cages, 30,000 oysters planted

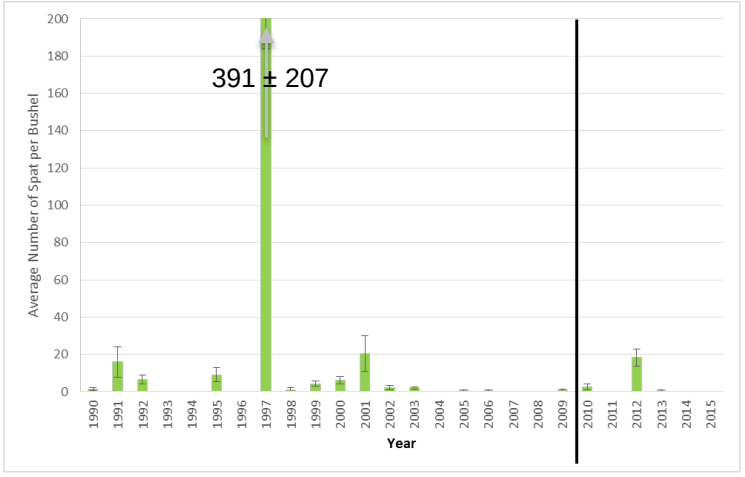
Appendix A – Wye River Sanctuary Example

Average number of oysters per bushel per size class since 1990 (Fall Survey)









Black line denotes when the sanctuary was established

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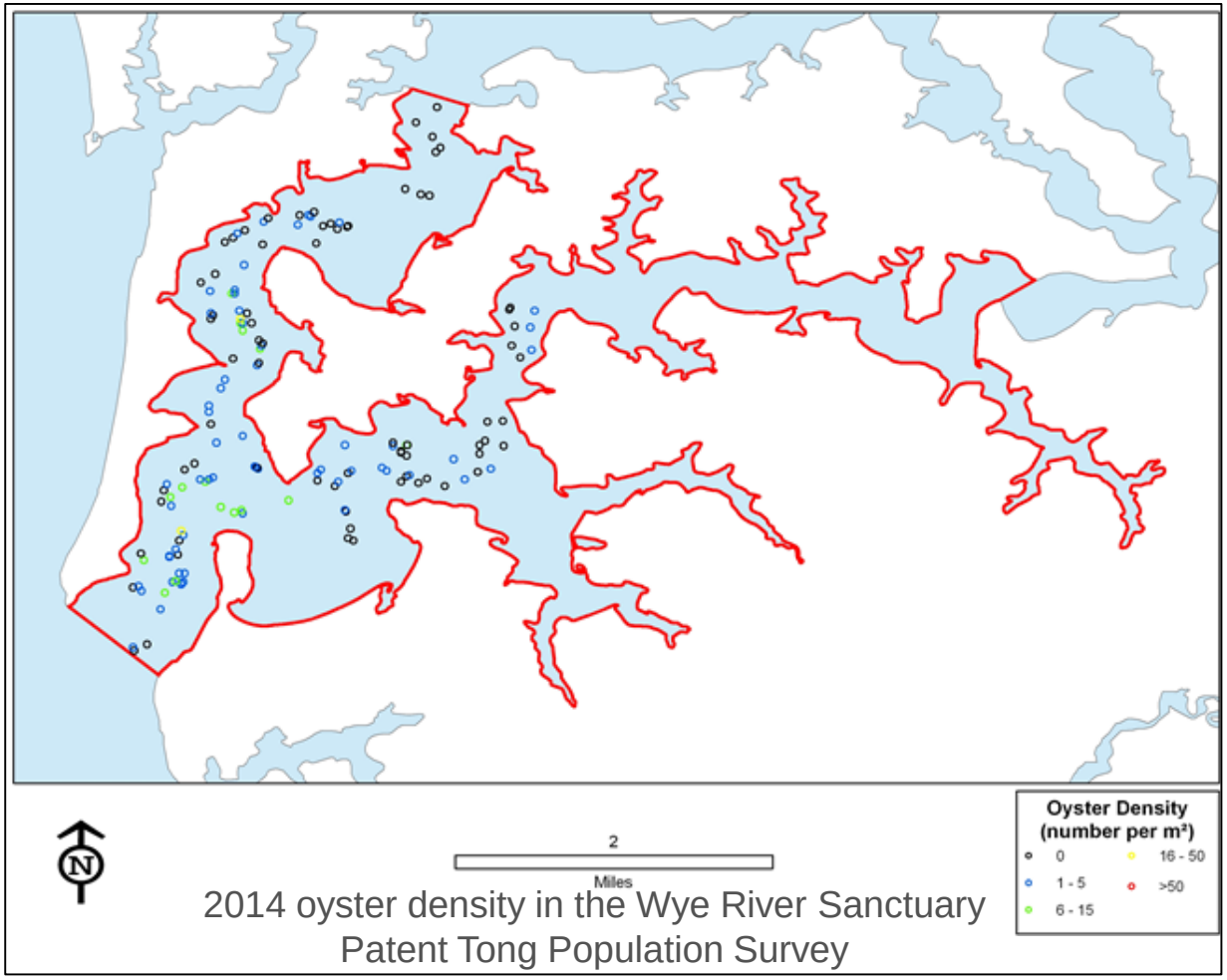
Appendix A – Wye River Sanctuary Example

Density of oysters from patent tong population survey



2014 oyster density in the Wye River Sanctuary
Patent Tong Population Survey

Restoration criteria:

Minimum Threshold
> 15 oysters/m^2
yellow circles

Target Goal
> 50 oysters/m^2
red circles

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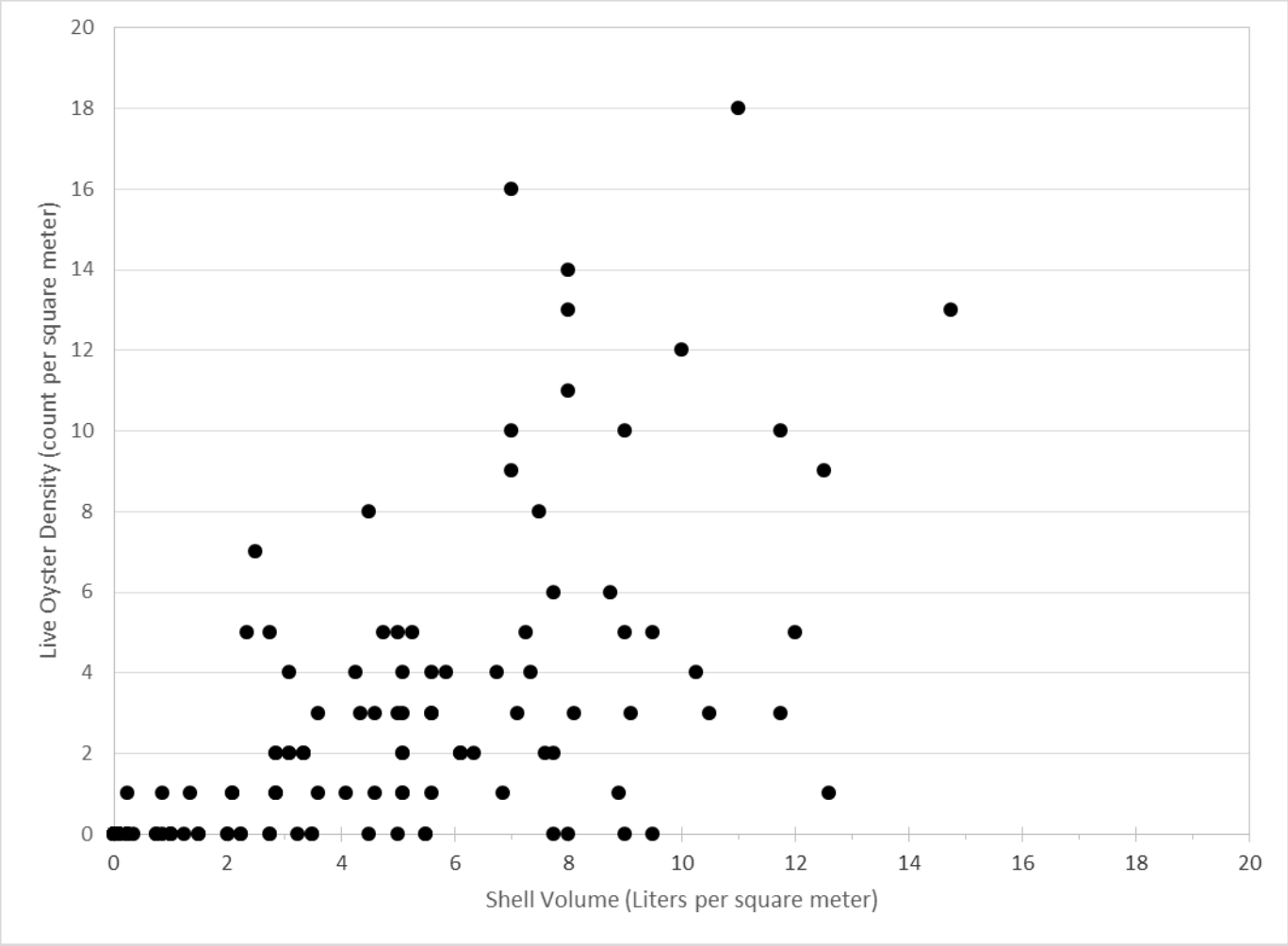
Appendix A – Wye River Sanctuary Example

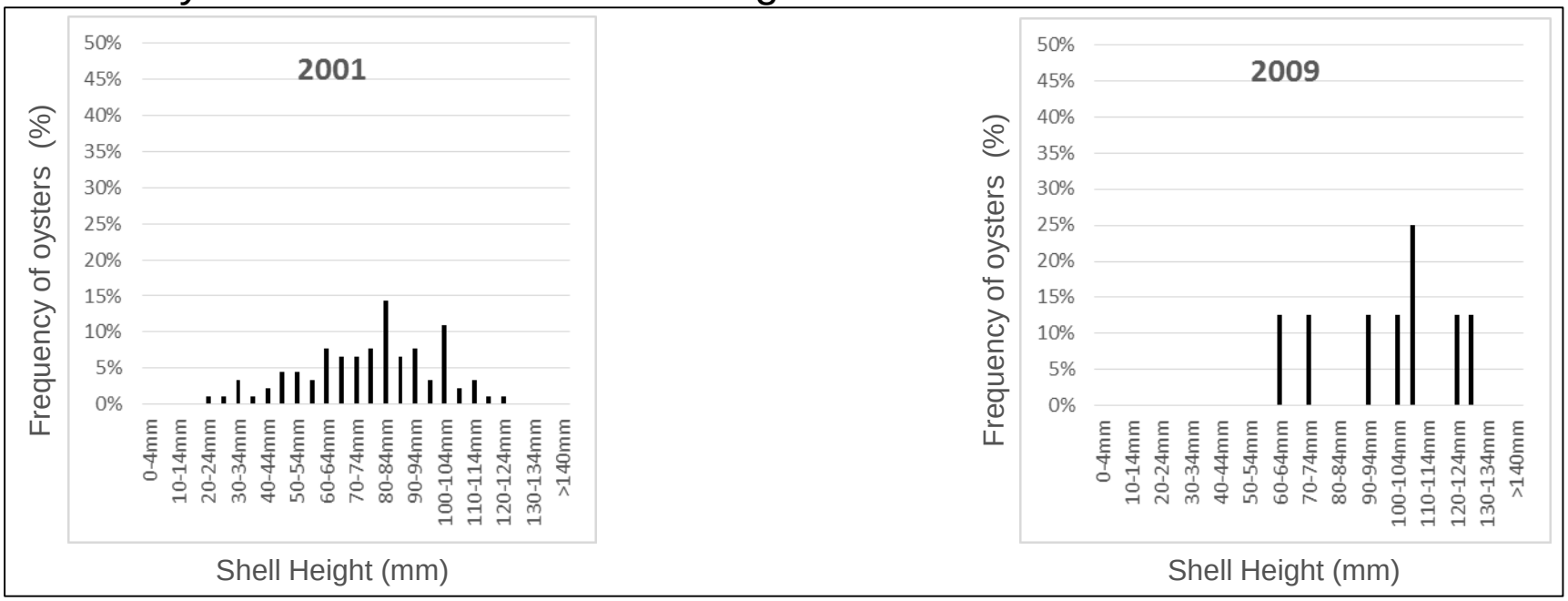
Shell volume and live oyster density



MARYLAND DEPARTMENT OF NATURAL RESOURCES

Appendix A – Wye River Sanctuary Example

Annual oyster size structure – shell height distribution



- All size classes
- Spat present = new recruitment
- Smalls present = past recruitment
- Larger oysters = increased egg production

- Few size classes
- No spat present
- Few small oysters present
- Larger oysters = increased egg production

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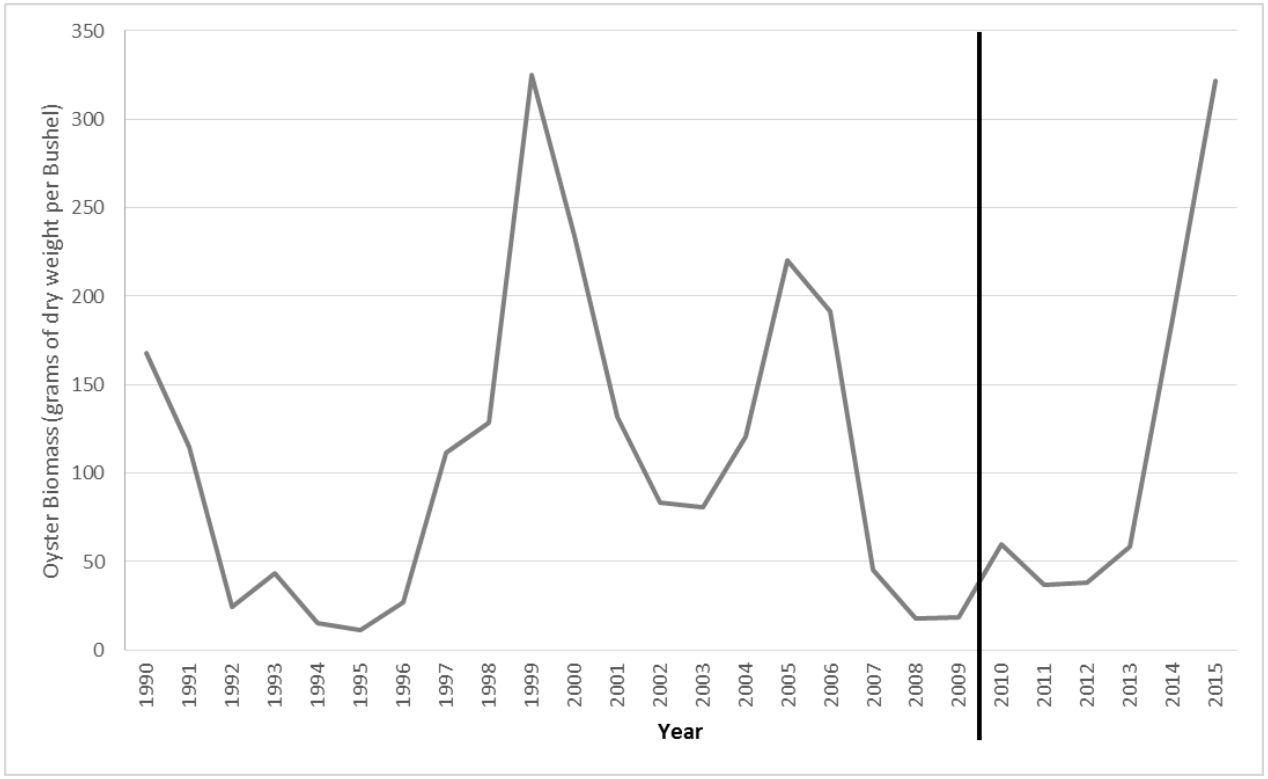
Appendix A – Wye River Sanctuary Example

Annual biomass



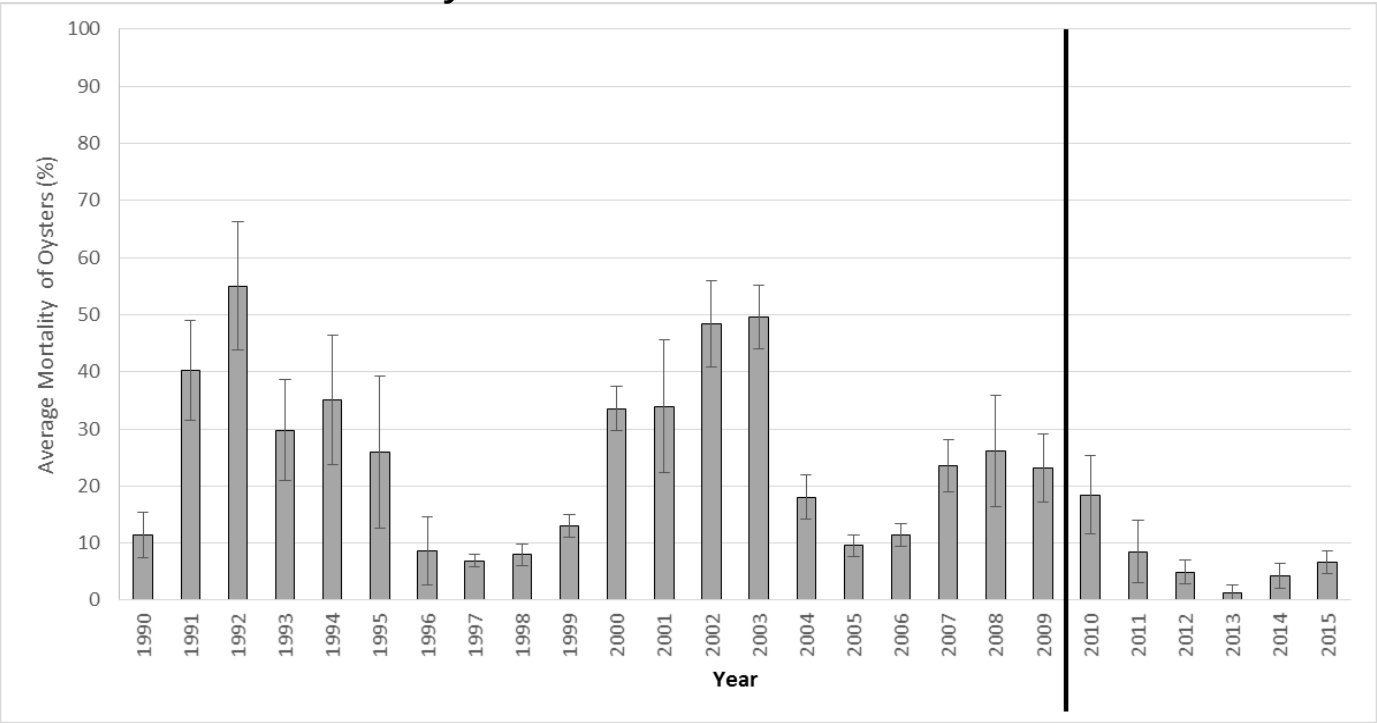
Larger sized oysters have higher biomass

High biomass could be due from:

- Lots of small oysters
- Very large oysters
- Combination of both

Appendix A – Wye River Sanctuary Example

Annual mortality



- Based on small and market sized oysters
- Includes both old boxes and recent boxes
- 23.3% = baywide 31yr average mortality

Box = dead oyster with the two shells still attached together

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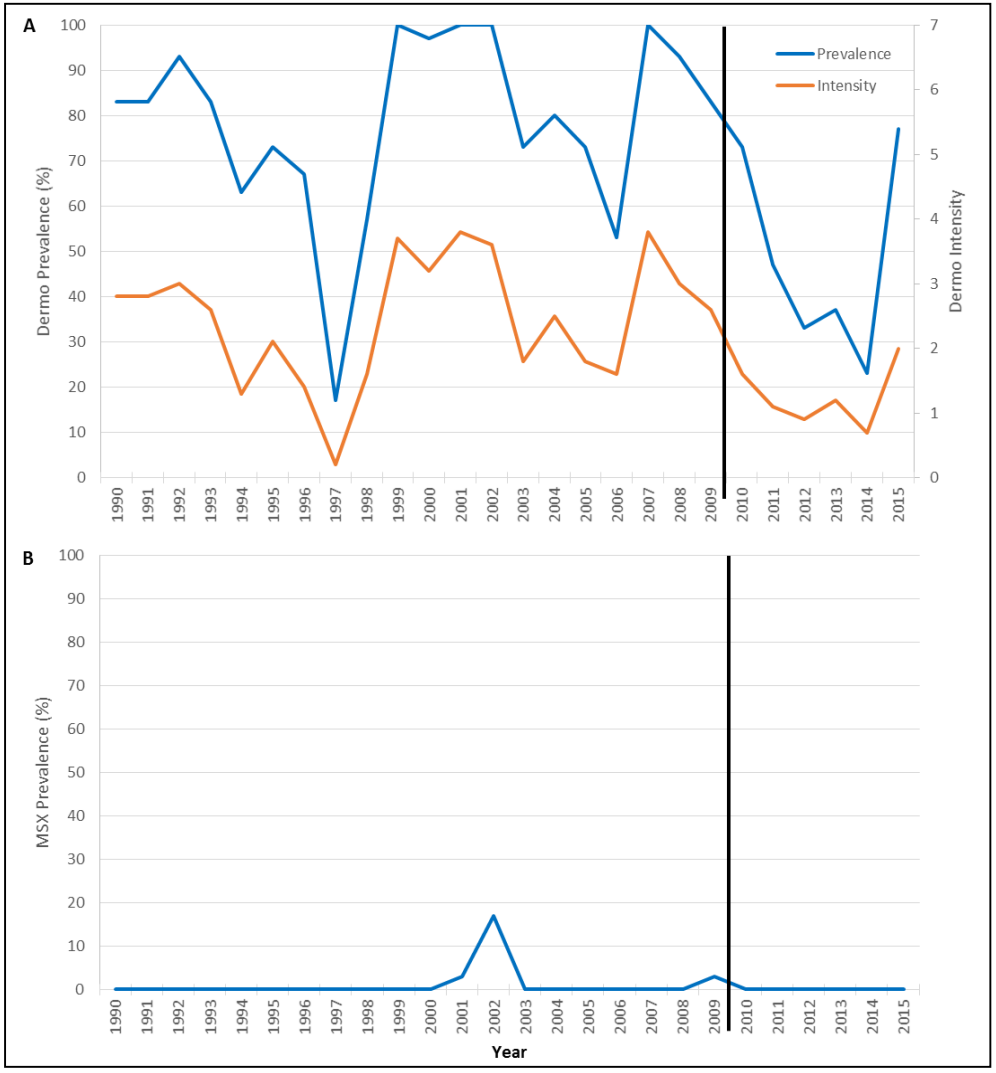
Appendix A – Wye River Sanctuary Example



30 oysters are tested for disease ("key" oyster bars samples only)

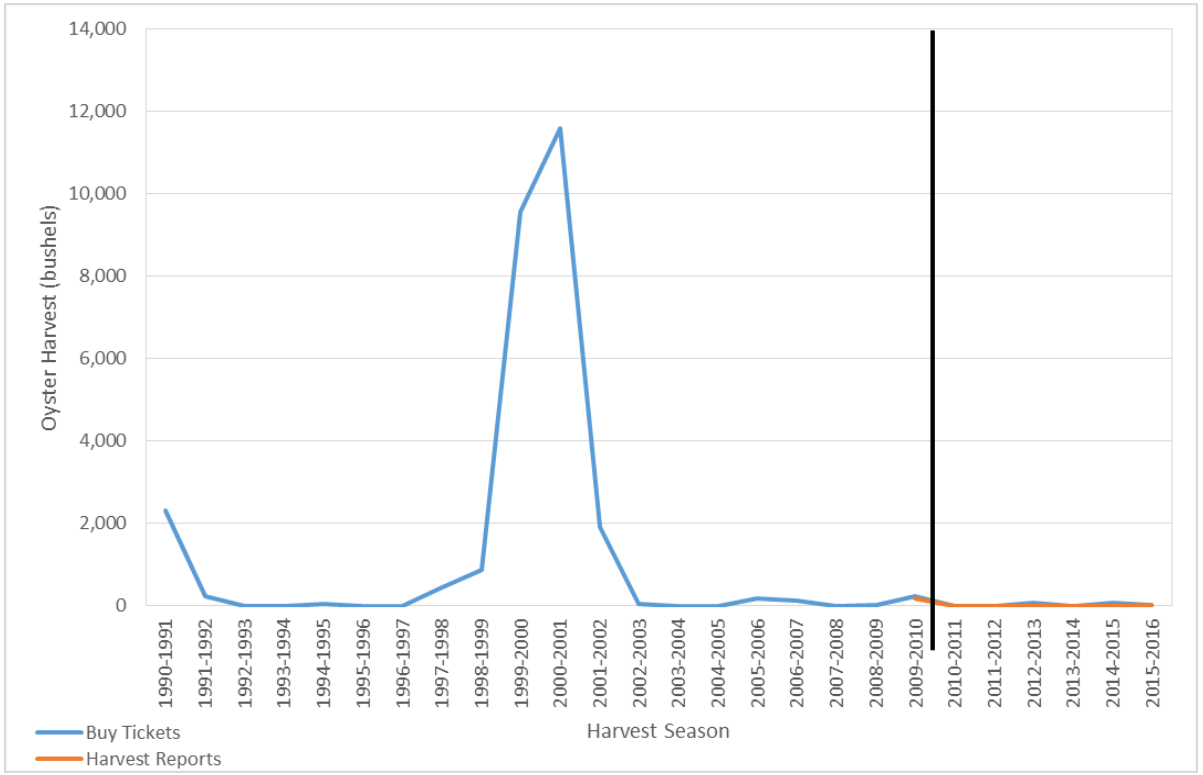
Chart showing Dermo prevalence and intensity:

- Prevalence = if oyster has the parasite
- Intensity = how severe is the infection

Chart showing MSX prevalence

Appendix A – Wye River Sanctuary Example

Harvest over time



Harvest reported by NOAA Code Area

Buy Tickets =
- Harvest reported by dealers

Harvest Reports =
- Harvest reported by watermen
- Started in 2009

The Wye River Sanctuary encompasses 54% of the 6,493 acres in NOAA Code 099, however all oysters bars are located in the sanctuary with the exception of one (90% of the historic oyster bottom within NOAA Code 099 is located in the sanctuary).

Appendix B – Public Fishery Areas

Information included:

- Acreage
- Salinity region
- Map of area: oyster bars, Fall Survey Oyster Dredge sample sites, MDE conditional and restricted areas, Public Shellfish Fishery Areas (PSFA – where no aquaculture leasing can occur)
- Replenishment planting activities
- Oyster population information
  - Annual Fall Survey Oyster Dredge
    - Number of spat, smalls, and markets
    - Oyster size structure
    - Oyster biomass
    - Mortality
    - Disease – Dermo and MSX
- Harvest

- No bottom survey or patent tong population survey

MARYLAND DEPARTMENT OF NATURAL RESOURCES

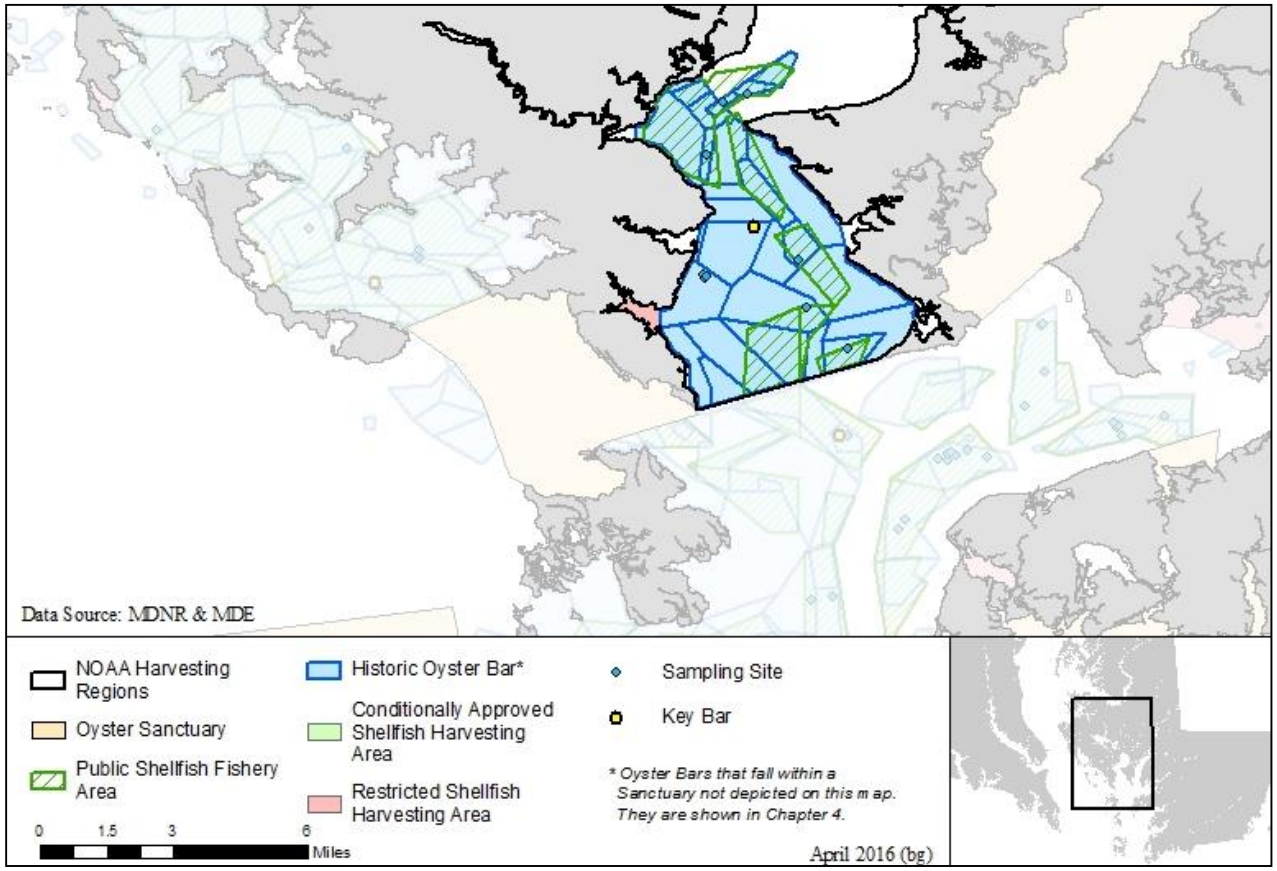
Appendix B – Fishing Bay (NOAA Code 043) Example

Information presented by NOAA Code Harvest Areas:

- 39 areas
- Codes used when reporting harvest

Overview map shows:

- NOAA boundary
- Sanctuary areas
- Historic, charted bars
- MDE Shellfish Areas
- PSFA
- Fall Survey sample sites
  - Regular samples
  - "Key" bar samples



PSFA = Public Shellfish Fishery Areas

MARYLAND DEPARTMENT OF NATURAL RESOURCES

Appendix B – Fishing Bay (NOAA Code 043) Example

Table showing planting activities in the area:

- Replenishment plantings for fishery
- Main activity types include: Fresh shell, dredged shell, hatchery spat-on-shell, & natural wild seed

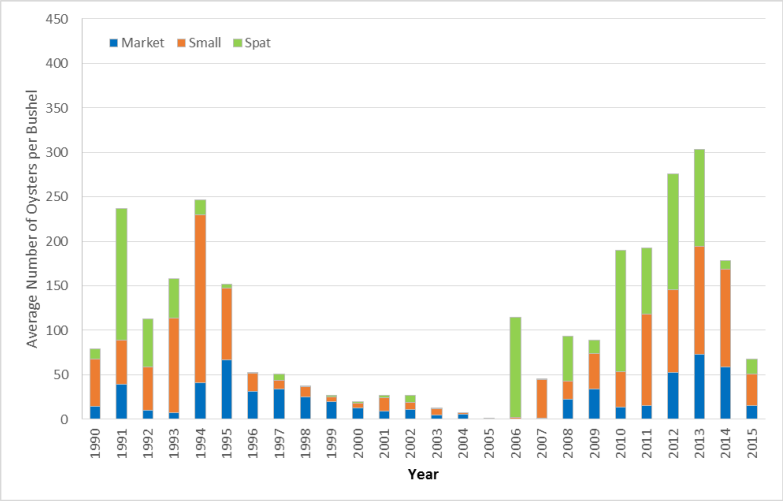
Replenishment planting activities occurring since 1990 in NOAA Code 043 (Fishing Bay).

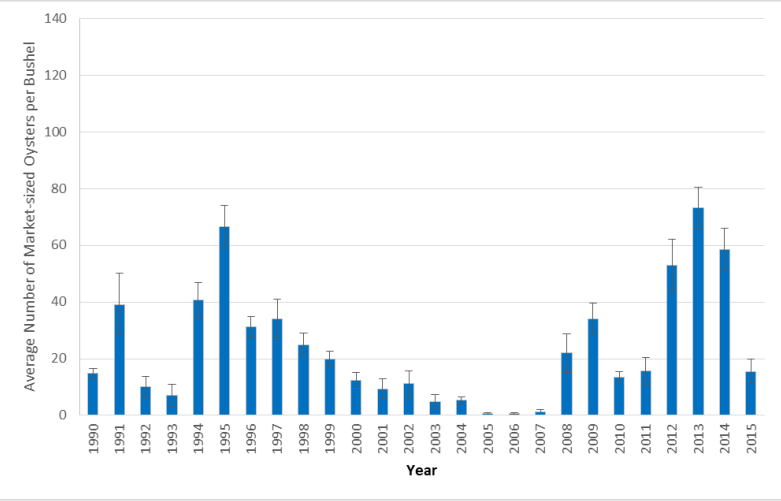
Year	Planting Substrate Type	Area Planted (acres)	Thousands of Bushels Planted	Millions of Spat Planted
1990	Dredged Shell	19.5	79.8	-
1990	Fresh Shell	1.5	2.0	-
1991	Wild Seed	6.7	2.3	-
1992	Wild Seed	38.9	12.7	-
1996	Dredged Shell	26.3	43.4	-
2001	Wild Seed	8.6	5.1	-
2013	Fresh Shell	6.0	11.9	-
2014	Fresh Shell	20.0	20.2	-
2014	Hatchery Spat-on-Shell	8.7	-	19.0
2015	Fresh Shell	14.7	20.4	-

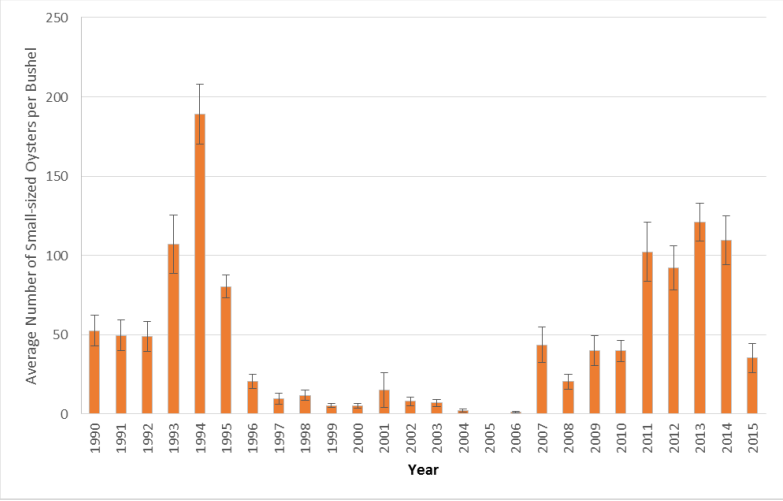
MARYLAND DEPARTMENT OF NATURAL RESOURCES

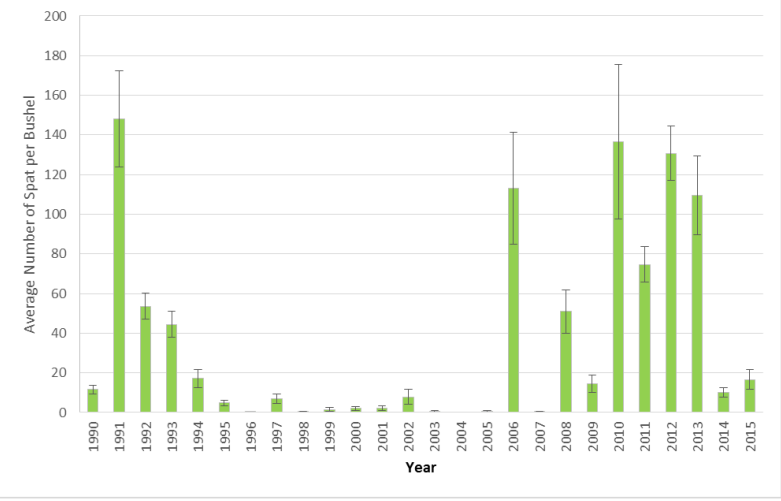
Appendix B – Fishing Bay (NOAA Code 043) Example

Average number of oysters per bushel per size class since 1990 (Fall Survey)









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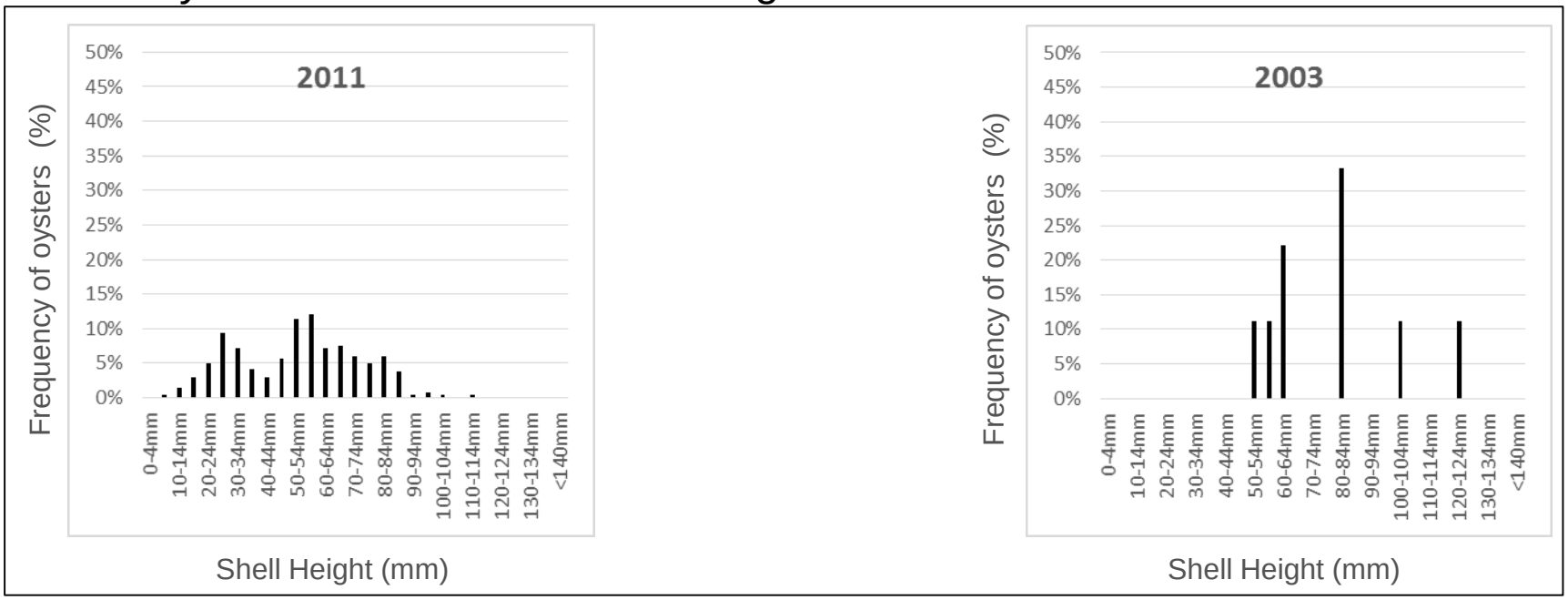

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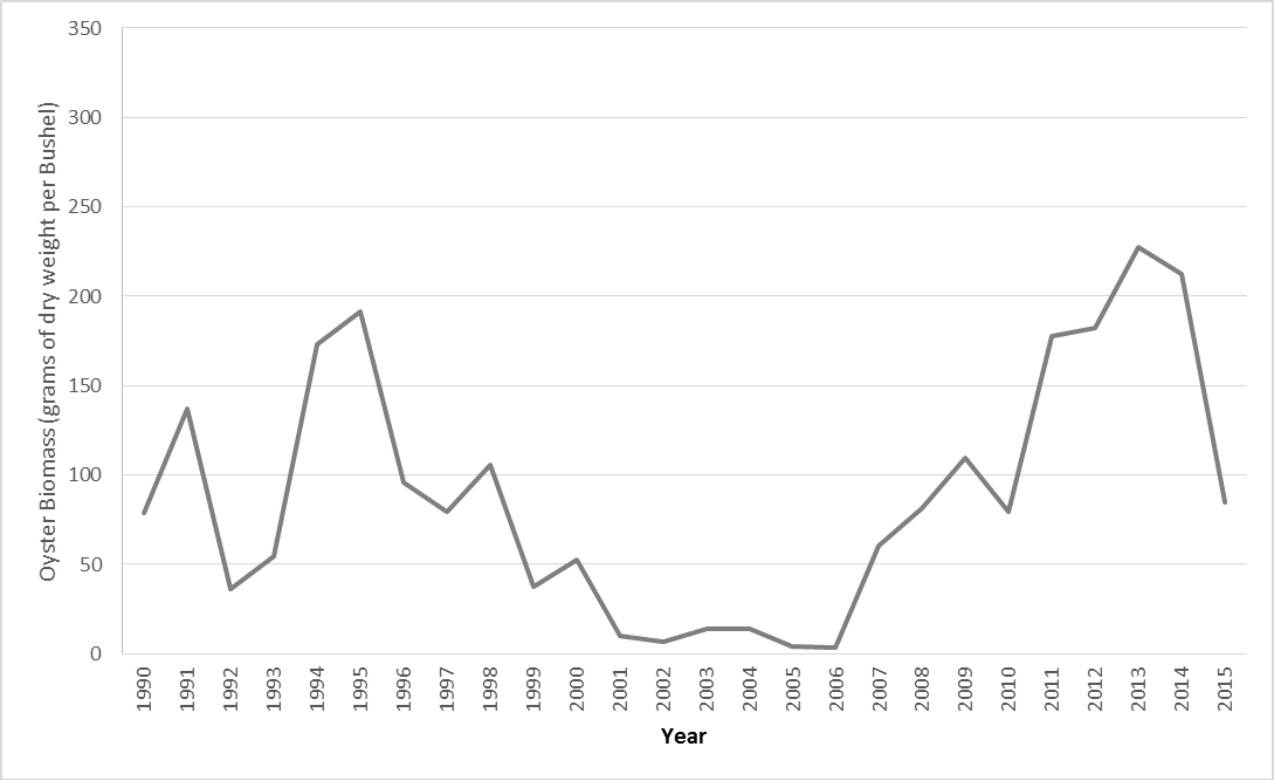
Appendix B – Fishing Bay (NOAA Code 043) Example

Annual biomass



Larger sized oysters have higher biomass

High biomass could be due from:

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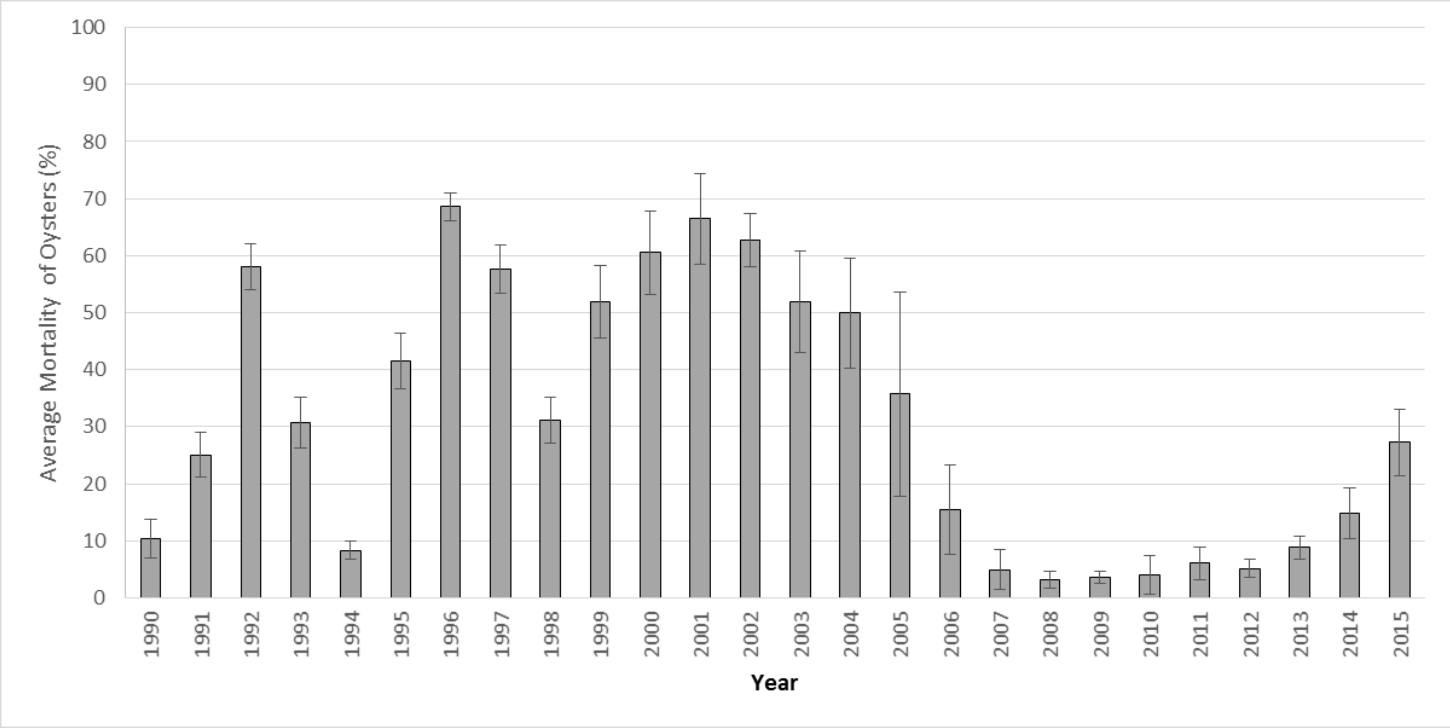
Appendix B – Fishing Bay (NOAA Code 043) Example

Annual mortality



- Based on small and market sized oysters
- Includes both old boxes and recent boxes
- 23.3% = baywide 31yr average mortality

Box = dead oyster with the two shells still attached together

Appendix B – Fishing Bay (NOAA Code 043) Example

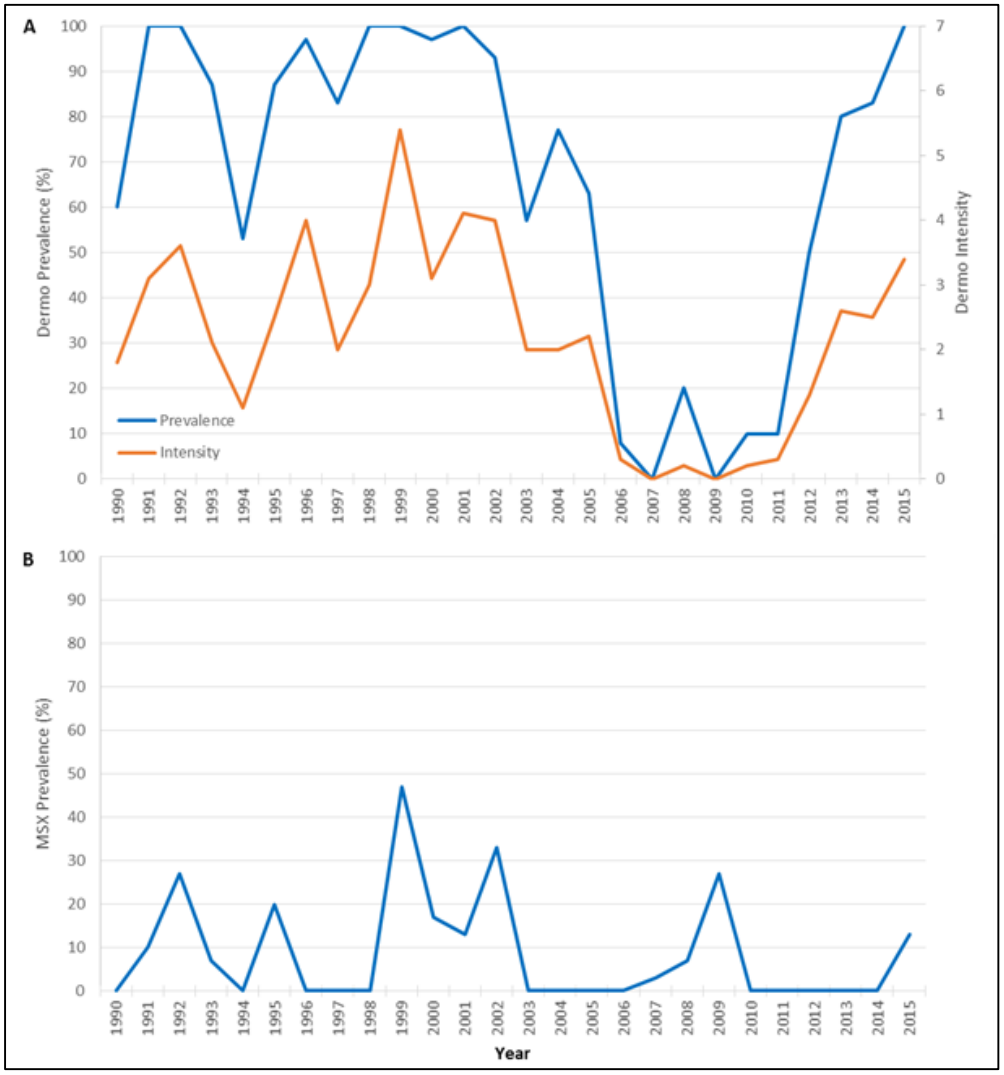


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Chart showing Dermo prevalence and intensity:

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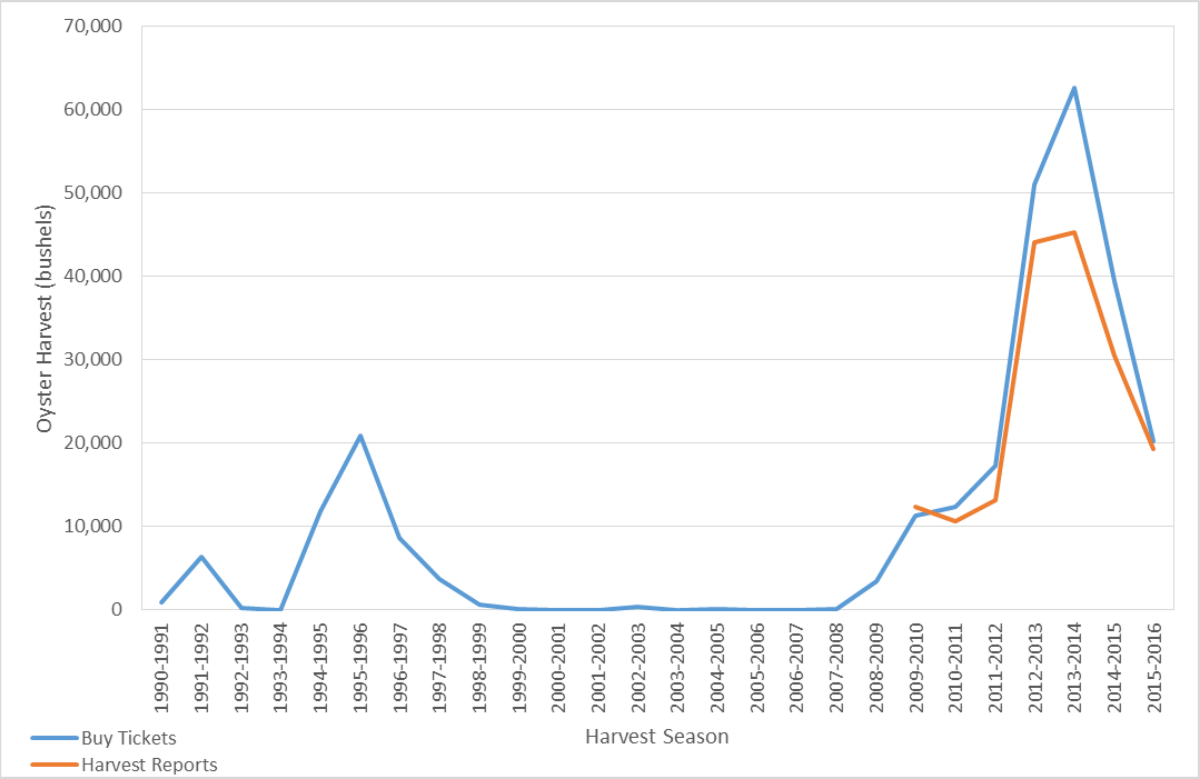
MARYLAND DEPARTMENT OF NATURAL RESOURCES

Appendix B – Fishing Bay (NOAA Code 043) Example

Harvest over time



Buy Tickets =

- Harvest reported by dealers

Harvest Reports =

- Harvest reported by watermen
- Started in 2009

Presentation Outline

- Appendix A – Sanctuary Areas
- Appendix B – Public Fishery (NOAA Code Harvest) Areas
  (The information in the appendices are utilized in chapters 4 and 5 of the report)

- Chapter 4
  - Results towards meeting objectives of each management area type

- Chapter 5
  - Metrics used to develop tiers
  - Tier results
  - Future alternatives for tiers

Purpose of the Report

"*The department has committed to reviewing the effectiveness of the locations of sanctuaries, public shellfish fishery areas, and aquaculture areas every 5 years and to propose changes where needed.*"

Preamble in the 2010 proposed oyster regulation in the Maryland Register, Vol 37, Issue 14, p. 943. Friday July 2, 2010

MARYLAND DEPARTMENT OF NATURAL RESOURCES

Management Area Acreage

Management Type	Total Area (acres)	Area of Historic Charted Oyster Bottom (acres)[1]	Estimated Productive Oyster Bottom (acres)[2]	Permitted Activities
Sanctuaries	252,285	78,520	9,000 (24%)	Shellfish restoration, clamming in some sanctuaries[3]
Public Shellfish Fishery Areas (PSFAs)	179,943	142,006[4]	27,000 (76%)	Commercial and recreational harvest of oysters. No aquaculture.
Aquaculture Areas	5,660	-	-	Aquaculture (includes both on-bottom and water column leases)

[1] Historic oyster bottom as charted in the Yates Oyster Survey from 1906 to 1912 plus its amendments.

[2] Estimate productive oyster bottom as defined in the U.S. Army Corps of Engineers, Norfolk District. 2009. Programmatic Environmental Impact Statement for Oyster Restoration in Chesapeake Bay Including the Use of a Native and/or Nonnative Oyster.

[3] Clamming is permitted only in sanctuaries established in 2010.

[4] There is an additional 109,676 acres of historic oyster bottom that is neither in sanctuaries nor in a PSFA, but is open to the public oyster fishery.

Objectives of Management Areas

Effectiveness is defined relative to the original management objectives in the 2010 proposal: to restore the ecological function of oysters and to enhance the commercial fishery for its economic and cultural benefits. The management plan adopted in 2010 sought to resolve the dual goals of ecological and fishery restoration by creating distinct management areas each with their own objectives.

Sanctuary

- Protect half of the "best bars" and investigate why these areas remain productive;
- Facilitate development of natural disease resistance
- Provide essential ecological functions
- Serve as reservoirs of reproductive capacity
- Located in all salinity zones
- Increase ability to protect sanctuaries from illegal harvesting

Public Shellfish Fishery Areas

- Retain 168,000 acres of natural oyster bars including 76% remaining productive oyster habitat
- Protect half of the "best bars" as for the benefit of licensed oystermen
- Implement a more targeted and scientifically managed wild oyster fishery.

Aquaculture

- Streamline the regulatory process for aquaculture
- Open new areas to leasing to promote shellfish aquaculture industry growth
- Provide alternative economic opportunities for watermen

Evaluation of Objectives

Area	Objective	Status
Sanctuary	Protect half of the Bay's most productive oyster grounds that remain and allow investigation of the reasons why these remain most productive	Met 1st part of objective. Working towards meeting 2nd half
	Facilitate development of natural disease resistance	Working towards meeting objective
	Provide essential natural ecological functions that cannot be obtained on a harvest bar	Working towards meeting objective
	Serve as a reservoir of reproductive capacity	Working towards meeting objective
	Provide a broad geographic distribution across all salinity zones	Met objective
	Increase ability to protect sanctuaries from illegal harvesting	Met objective

For more information: see presentation given to the OAC on August 1, 2016 and section 4.2 (page 40) in the report

Evaluation of Objectives

Area	Objective	Status
Public Shellfish Fishery Areas	Retain 168,000 acres of natural oyster bars including 76% (27,000 acres) of the remaining 36,000 acres of remaining productive oyster habitat identified in the Programmatic Environmental Impact Statement (PEIS)	Met objective
	Include half of Maryland's consistently most productive oyster grounds (Jones and Rothschild 2009 'best bars') for the benefit of licensed oystermen	Met objective
	Maintain a more targeted and scientifically managed public oyster fishery	Working towards meeting objective

For more information: see presentation given to the OAC on August 1, 2016 and section 4.3 (page 73) in the report

Evaluation of Objectives

Area	Objective	Status
Aquaculture	Streamline the regulatory process for aquaculture	Working towards meeting objective
	Open new areas to leasing to promote shellfish aquaculture industry growth	Met objective
	Provide alternative economic opportunities for watermen	Met objective

For more information: see presentation given to the OAC on August 1, 2016 and section 4.4 (page 82) in the report

Presentation Outline

- Appendix A – Sanctuary Areas
- Appendix B – Public Fishery (NOAA Code Harvest) Areas
  (The information in the appendices are utilized in chapters 4 and 5 of the report)

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Effectiveness Tiers

Four Effectiveness Tiers

- Tiers are based on data that reflect relative oyster productivity of the areas

- Productivity based on :
  - Average number of market-size oysters per bushel of material before and after 2010 or establishment of the sanctuary
  - Total number of live oysters per bushel of material over the 26-year time series
  - For sanctuaries only, oyster density based on the Patent Tong Population Survey (data not available for NOAA Codes)
  - For PSFAs – average biomass before and after 2010 (insufficient data were available to use this for sanctuaries)
  - For PSFAs - harvest before and after 2010

- 176 PSFAs were grouped in the 39 NOAA Code harvest areas

PSFA is defined as Public Shellfish Fishery Areas

Tier 0

- Areas receiving significant financial investment through restoration projects
- Areas meeting the 2014 Chesapeake Bay Watershed Agreement
- Not grouped based on productivity
- Marylanders Grow Oysters (MGO) sites in all Tier 0 areas.

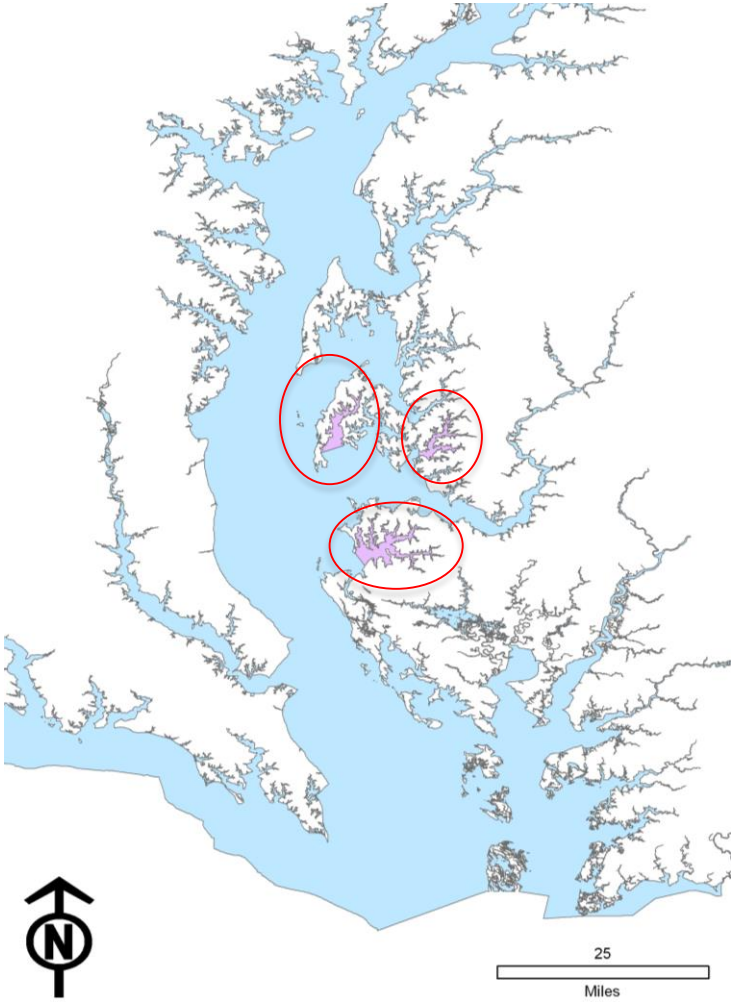
- Sanctuaries: Harris Creek, Little Choptank River, Tred Avon River

- No Tier 0 PSFAs

Future Management Alternatives:

1. Maintain current strategy
2. Remain as sanctuary, but with no continued investment

Investment is defined as reef construction and/or oyster seeding



Tier 1 Sanctuaries

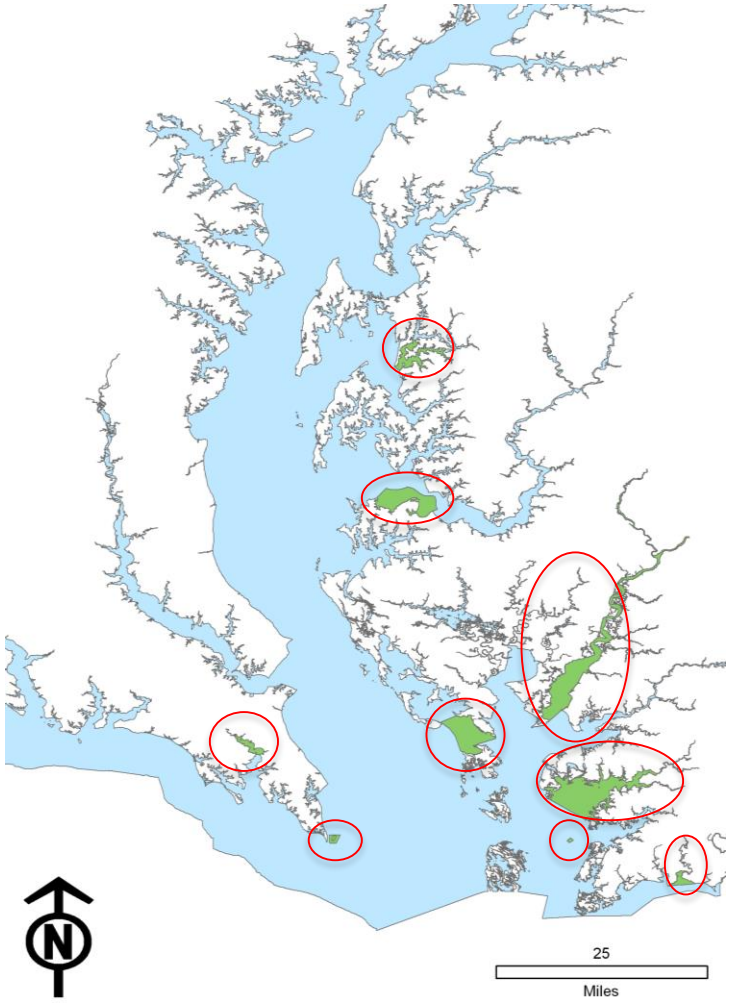
- 9 sanctuaries
- Highly productive
- Have not had significant restoration activities since 2010.
- Potential to achieve the 2014 Chesapeake Bay Watershed Agreement goals
- MGO sites in St Mary's River and Wye River

Future Management Alternatives:

1. Maintain current strategy
2. Remain as a sanctuary, but with additional investment towards restoration

Somerset Sanctuary Future Management Alternatives:

1. Declassify as a sanctuary and create a specific management plan for public oyster harvest
2. Declassify as a sanctuary



Sanctuaries: Hooper Straight, Kitts Creek, Lower Choptank River, Manokin River, Nanticoke River, Point Lookout, Somerset, St. Mary's River, and Wye River

Tier 1 - Sanctuaries

Met two or more criteria:

1. Average # of market-size oysters
   - > 50 per bushel either before or after sanctuary creation

   OR
   - Number is stable or increasing after sanctuary creation
2. Total # of live oysters
   - > 130 per bushel
   - More than 4 times since 1990
   - Represents the top 30% of all sampling events
3. Average oyster density
   - >= 2 oysters / m^2

Sanctuary	Mean # of Live Market Oysters	Total # of live oysters	Patent Tong Density
Hooper Strait	✓	✓	✗
Kitts Creek	✓	✓	ND
Lower Choptank	✓	✓	✗
Manokin	✓	✓	✓
Nanticoke	✓	✓	ND
Point Lookout	✓	✓	✗
Somerset	ND	✓	✓
St. Mary's	✓	✓	✓
Wye River	✓	✓	✓

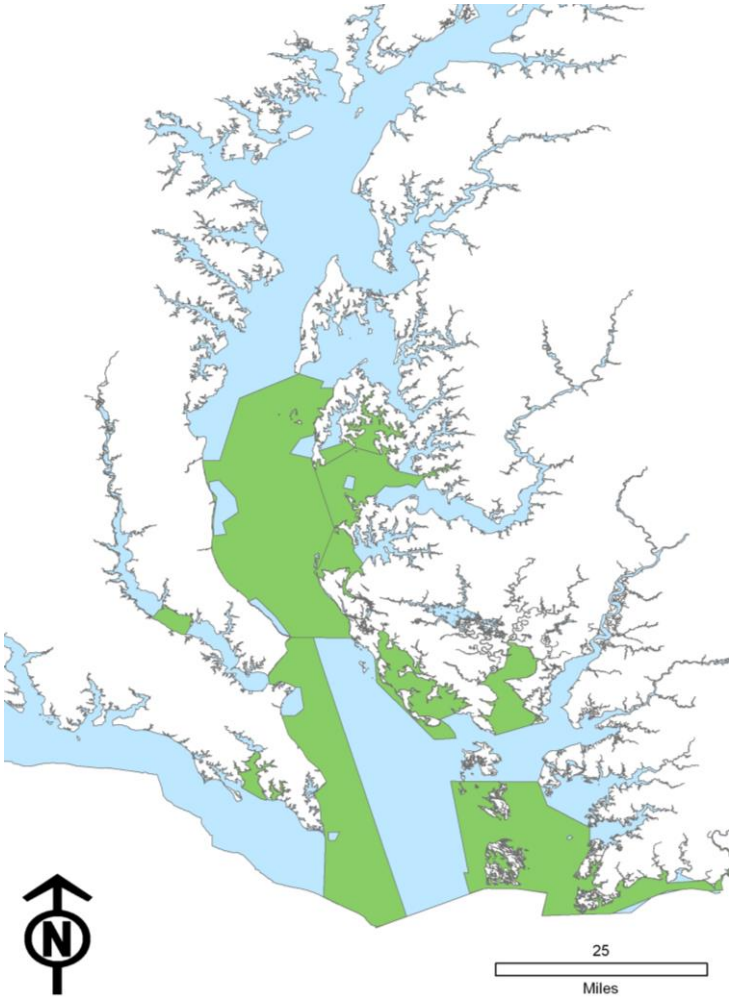
✓ = Met Criteria
✗ = Did Not Meet Criteria
ND = No Data

Tier 1 PSFA

- Highly productive harvest areas

Future Management Alternatives:

1. Maintain current strategy
2. Develop area-specific management plans
3. Conservational equivalent trade



NOAA Codes: Broad Creek, Chesapeake Bay (lower, middle), Chesapeake Bay (lower, west), Lower Choptank River, Fishing Bay, Harris Creek, Honga River, Little Choptank River, Mouth of Eastern Bay, Upper Patuxent River, Pocomoke Sound, Smith Creek, St. Mary's River, Tangier Sound SE, and Tangier Sound SW

Tier 1 PSFA

Met two or more criteria:

1. Average # of market-size oysters
   - > 50 per bushel either before or after 2010

   OR
   - Number is stable or increasing after 2010
2. Biomass increased or remained stable since 2010
3. Total # of live oysters
   - > 200 per bushel
   - More than 4 times since 1990
   - Represents the top 20% of all sampling events
4. Average annual harvest has increased in the 2010-2015 time period

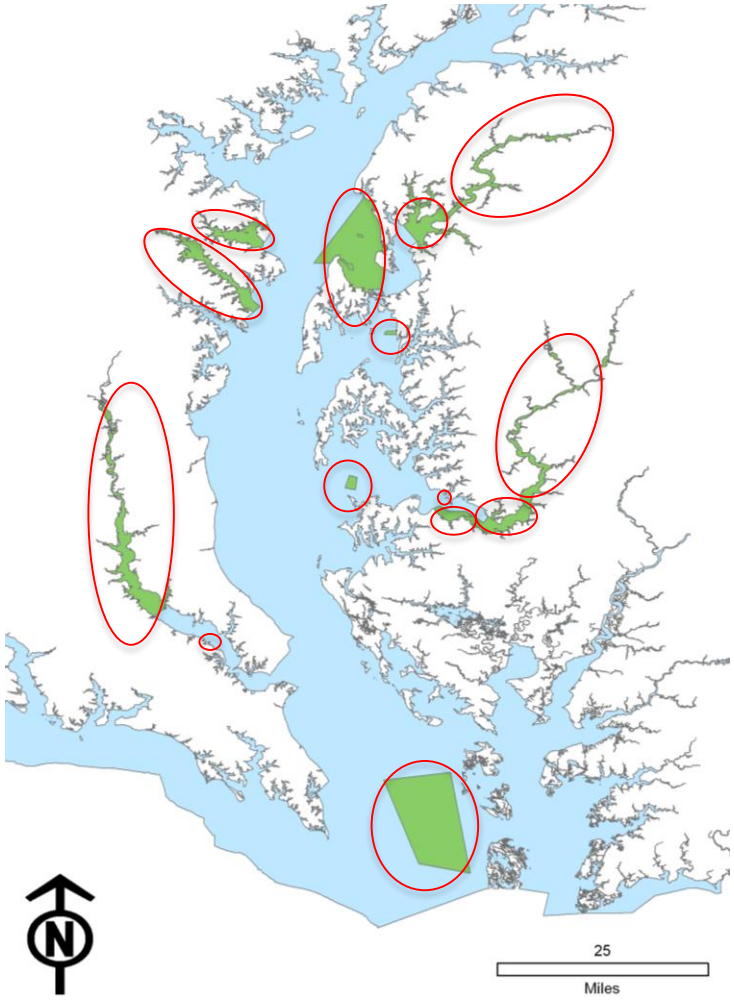
NOAA Code Area	Mean # of Live Market Oysters	Biomass	Total # of live oysters	Harvest
Broad Creek	✓	✓	✓	✓
Bay- Low Mid (027)	✓	✓	✗	✗
Bay – Low West (229)	✓	✓	✗	✗
Lower Choptank	✓	✓	✓	✓
Fishing Bay	✓	✓	✓	✓
Harris Creek	✓	✓	✓	✗
Honga River	✓	✓	✓	✓
Little Choptank	✓	✓	✓	✗
Mouth of Eastern Bay	✓	✓	✗	ND
Upper Patuxent River	✓	✓	✗	✓
Pocomoke Sound	✓	✓	✓	✓
Smith Creek	✓	ND	✓	✓
St. Mary's River	✓	✓	✓	✓
Tangier Sound SE	✓	✓	✓	✓
Tangier Sound SW	✓	✓	✓	

Tier 1A Sanctuaries

- 14 sanctuaries
- Contain oyster restoration or research projects conducted by the USACE
- Not grouped based on productivity
- Some of these projects are quite old and are no longer active
- MGO sites in Lower Chester River, Upper Chester River, and Severn River

Future Management Alternatives:

1. Maintain current strategy
2. Remain as a sanctuary, but with investment towards restoration
3. Work with DNR and the USACE to declassify portions of area as a sanctuary and create a specific management plan for public oyster harvest which includes investment



Sanctuaries: Chester Oyster Reserve Area (ORA), Choptank ORA, Cook Point, Howell Point, Lower Chester River, Lower Mainstem, Magothy River, Mill Hill, Neal Addition, Sandy Hill, Severn River, Upper Chester River, Upper Choptank River, and Upper Patuxent River

Tier 1A Sanctuaries

Although not grouped based on productivity, many sanctuaries do meet Tier 1 criteria

8 sanctuaries as denoted by "*" would meet the tier 1 criteria

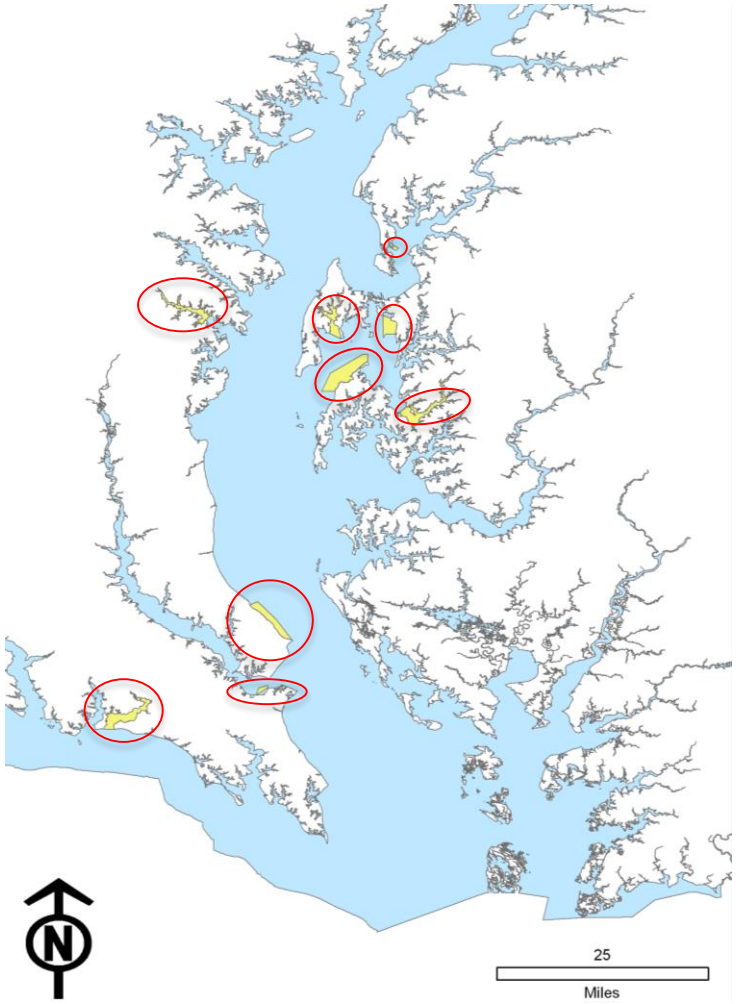
Sanctuary	Mean # of Live Market Oysters	Total # of live oysters	Patent Tong Density
Chester ORA	✗	✗	✗
Choptank ORA*	✓	✓	✓
Cook Point	✓	✗	ND
Howell Point	ND	ND	ND
Lower Chester*	✓	✓	✗
Lower Mainstem*	✓	✓	✗
Magothy	ND	ND	ND
Mill Hill*	✓	✓	✗
Neal Addition*	✓	✓	ND
Sandy Hill*	✓	✗	✓
Severn *	✓	✗	✓
Upper Chester	✗	✓	✗
Upper Choptank *	✓	✓	✓
Upper Patuxent	✓	✗	✗

Tier 2 Sanctuaries

- 9 sanctuaries
- Incomplete data sets
- Shown mixed signals
- Would benefit from more time to understand how oyster populations respond in the absence of harvest
- MGO sites in Miles River, Cox Creek, and South River

Future Management Alternatives:

1. Maintain current strategy
2. Remain as a sanctuary, but with investment towards restoration
3. Declassify some portion of the area as a sanctuary and develop an area-specific management plan which includes investment



Sanctuaries: Breton Bay, Calvert Shore, Cox Creek, Eastern Bay, Lower Patuxent River, Miles River, Prospect Bay, Ringgold, and South River

Tier 2 Sanctuaries

Did not meet two or more criteria listed for ranking as Tier 1

Some sanctuaries are close to meeting criteria

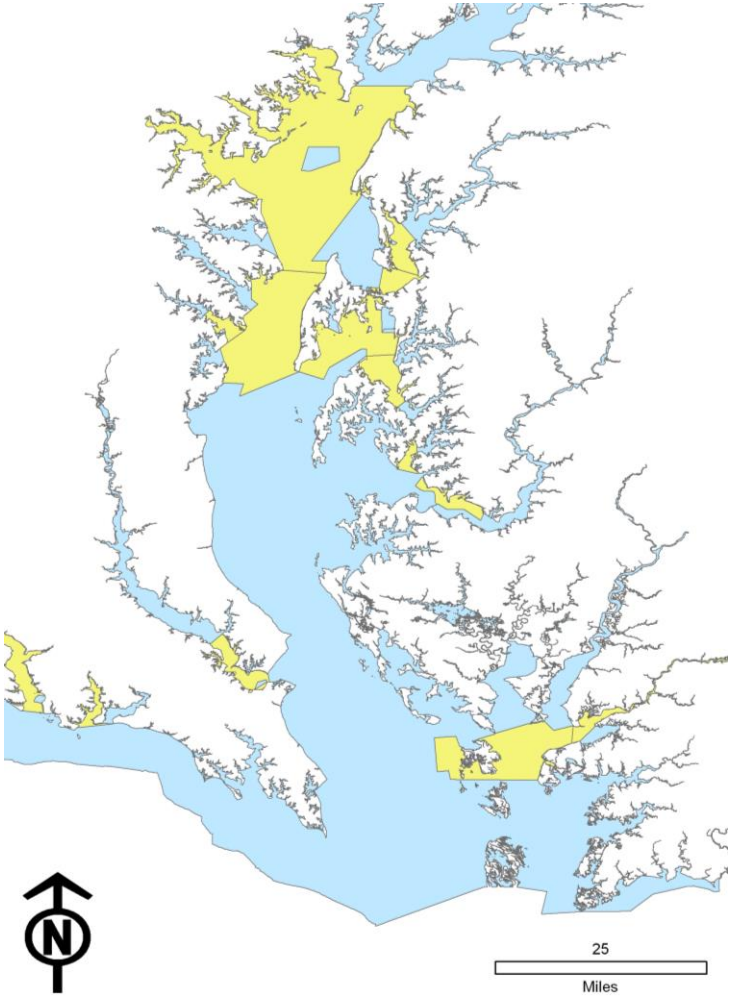
Sanctuary	Mean # of Live Market Oysters	Total # of live oysters	Patent Tong Density
Breton Bay	✓	✗	ND
Calvert Shore	✗	✗	✗
Cox Creek	✗	✗	✗
Eastern Bay	✗	✗	✗
Lower Patuxent	ND	ND	✗
Miles River	✗	✗	✗
Prospect Bay	✗	✗	✗
Ringgold	✓	✗	ND
South River	✓	✗	✗

Tier 2 PSFA

- Moderately productive harvest areas

Future Management Alternatives:

1. Maintain current strategy
2. Develop area-specific management plans
3. Conservational equivalent trade



NOAA Codes: Chesapeake Bay (upper), Chesapeake Bay (upper-middle), Lower Chester River, Middle Chester River, Middle Choptank River, Eastern Bay, Miles River, Lower Patuxent River, South River, St. Clements and Breton Bay, Tangier Sound North, Tred Avon River, Wicomico River (East), Wicomico River (West)

Tier 2 PSFA

- Less productive than Tier 1 areas.
- The total number of live oysters per bushel of material was never in the top 20% and always less than 200
- 4 areas are borderline and could potentially be shifted to tier 1:
  - Patuxent Lower, South River, Tangier Sound North, Wicomico River East

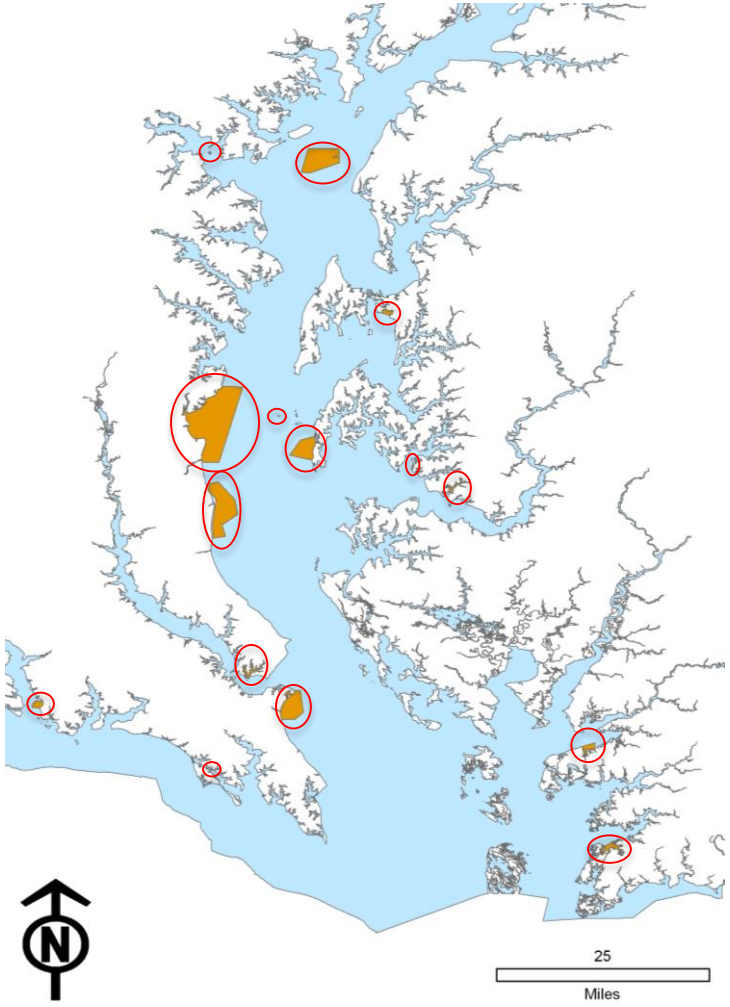
NOAA Code Area	Mean # of Live Market Oysters	Biomass	Total # of live oysters	Harvest
Bay – Upper (025)	✗	✗	✗	✗
Bay – Upper Middle (127)	✗	✗	✗	✗
Chester River Lower	✗	✗	✗	✗
Chester River Middle	✓	ND	✗	✗
Choptank River Middle	✓	ND	✗	✗
Eastern Bay	✓	✗	✗	✗
Miles River	✓	✗	✗	✗
Patuxent River Lower	✓	✓	✗	✓
South River	✓	ND	✗	✓
St. Clements & Breton Bay	✓	✗	✗	✗
Tangier Sound North	✓	✓	✗	✓
Tred Avon River	✓	ND	✗	✗
Wicomico River (East)	✓	✗	✗	✓
Wicomico River West	✗	✗	✗	✗

Tier 3 Sanctuaries

- 15 sanctuaries
- Incomplete data sets or no data
- Poor habitat and few or no oysters
- Many are pre-2010 sanctuaries – smaller sized, different goals
- MGO sites in Fort Carroll, La Trappe, Oxford Lab, Roaring Point, Solomon's Creeks, and Wicomico West

Future Management Alternatives:

1. Maintain current strategy
2. Remain as a sanctuary, but with investment towards restoration
3. Declassify some portion of the area as a sanctuary and develop an area-specific management plan which includes investment
4. Declassify some portion of the area as a sanctuary



Note: in areas that have no data, would need to conduct a survey to determine productivity prior to any declassification

Sanctuaries: Big Annemessex, Cedar Point, Fort Carroll, Herring Bay, Man O' War Gales Lump, La Trappe Creek, Oxford Lab, Piney Point, Plum Point, Poplar Island, Roaring Point, Solomons Creeks, Tilghman Island, Webster, and Wicomico West

Tier 3 Sanctuaries

Did not meet two or more criteria listed for ranking as Tier 1

Incomplete data sets or no data

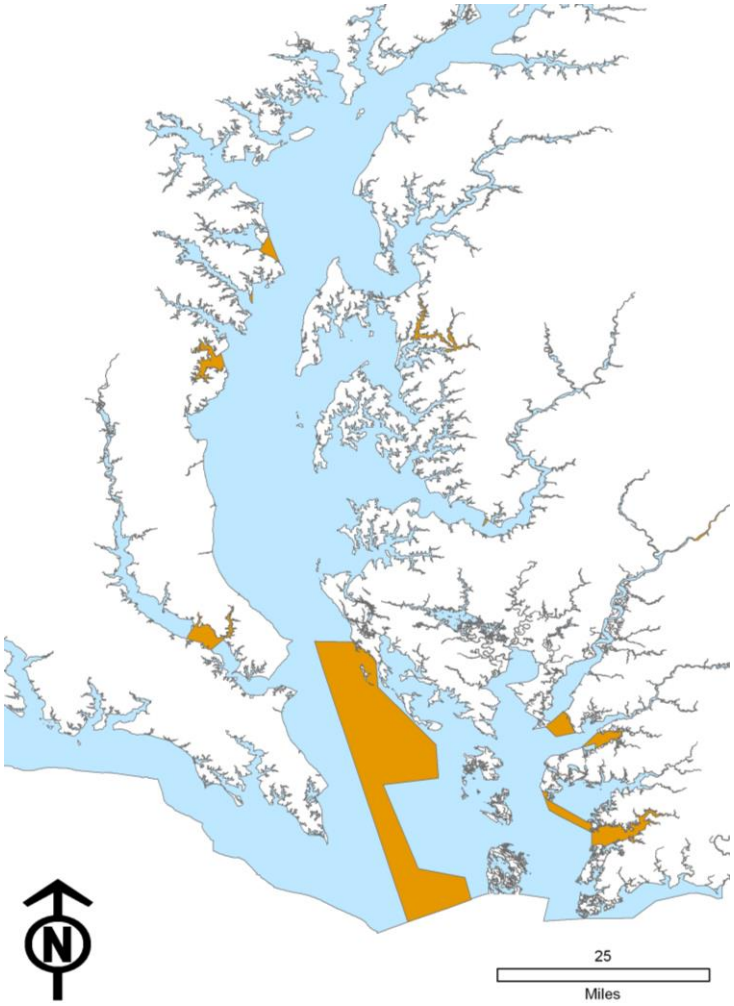
Sanctuary	Mean # of Live Market Oysters	Total # of live oysters	Patent Tong Density
Big Annemessex	ND	X	ND
Cedar Point	ND	ND	X
Fort Carroll	ND	ND	ND
Herring Bay	X	X	X
Man O' War /Gales Lump	X	ND	X
La Trappe Creek	ND	ND	ND
Oxford Lab	ND	ND	ND
Piney Point	ND	ND	ND
Plum Point	ND	ND	ND
Poplar Island	ND	ND	ND
Roaring Point	ND	ND	ND
Solomons Creeks	ND	ND	ND
Tilghman Island	ND	ND	X
Webster	ND	ND	ND
Wicomico West	ND	X	ND

Tier 3 PSFA

- Low productive harvest areas
- Some areas could be data limited or very small acreage
- Manokin, Nanticoke, and Wye Rivers NOAA Codes - small acreage and no data due to majority of NOAA Code being in a sanctuary.

Future Management Alternatives:

1. Maintain current strategy
2. Develop area-specific management plans
3. Conservational equivalent trade (in areas that have no data, would need to conduct a survey to determine productivity prior to any trading occurring)



NOAA Code: Big Annemessex River, Chesapeake Bay (lower east), Magothy River, Manokin River, Middle Patuxent River, Monie Bay, Nanticoke River, Severn River, West and Rhode River, Wye River, Upper Chester River, and Upper Choptank River

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Tier 3 PSFA

A lot of incomplete and data limited areas

NOAA Code Area	Mean # of Live Market Oysters	Biomass	Total # of live oysters	Harvest
Big Annemessex River	✗	ND	✗	✓
Bay – Low East (129)	ND	ND	ND	✓
Chester Upper	ND	ND	ND	ND
Choptank Upper	ND	ND	ND	✗
Magothy	✓	ND	✗	✗
Manokin	ND	ND	ND	✓
Monie Bay	ND	ND	ND	✓
Nanticoke	✗	ND	✗	✗
Patuxent Middle	✗	ND	ND	✗
Severn	ND	ND	ND	✗
West & Rhode	ND	ND	ND	✗
Wye	ND	ND	ND	✗

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Questions?