Eastern Bay Habitat Survey Results

Oyster Coalition Workgroup - Meeting #4

July 31, 2024

ORP Habitat Mapping Survey Goals

- Identify locations for future investment for oyster fishery
- Identify marginal habitat that could be opened for other uses (aquaculture, clamming, etc.)
- Survey designed using MGS Sidescan sonar maps, DNR harvest and planting data, and stakeholder input



Habitat Survey

- 1. Initial Sampling
 - Sampled areas of interest that were not actively being harvested/planted
 - Used sounding pole, ponar sediment grabs, GoPro video to identify bottom type
- 2. Patent Tong sampling
 - Sampled areas where Initial Sampling found substrate, plus additional bars based on stakeholder interest
 - Measured: Substrate types and volumes, oyster density



Overall "score" High score = area to focus enhancement Low score = consider using for other activities



- Focused initial sampling on bars that were not being harvested/planted
- Added some areas based on stakeholder input (Scotland, West End, NE Bodkin Shoals/Bodkin Shoals Add 1)



- Where is there substrate?
- Where is there *no* potential habitat (mud/sand)?
- Where should we focus the Patent Tong sampling?



• Using all initial sampling data, classified "bottom type":

Initial Sampling Bottom Type

- SAV
- Mud
- Sand
- Large rock
- Sand and small rocks
- O Sand and shell hash
- Sand and loose shell
- Shell/oysters



Initial Sampling Results

- Darker return on MGS sidescan harder bottom (hard sand or shell)
- Lighter return was generally mud/sand
- Oysters and habitat primarily along deeper sloping edges





Miles/Wye River Horseshoe Turtleback Persimmon Tree Hambleton Hill West End Hambleton



SAV Mud

Sand

Large rock

• Shell/oysters

Sand and small rocks

Sand and shell hash

Sand and loose shell

0

0

0

0

0

0



Initial Sampling Results

Miles River Wye Town Sycamore Wild Ground Scotland





Initial Sampling Results

Miles River Ash Craft **Second Point Old Orchard Gibsons Flat**







- SAV
- Mud
- Sand
- Large rock
- Sand and small rocks
- Sand and shell hash
- Sand and loose shell
- Shell/oysters



Initial Sampling Results Cox Creek/West Eastern Bay Cox Creek Stevens Pine Tree Bunker Hill Brick House Hill





Initial Sampling Results

Prospect Bay and Crab Alley Bay Bodkin Shoals/Bodkin Shoals Add 1 Normans Fine Eyes Normans Marsh/ Normans Marsh Add 1 Parsons Island Narrows Bald Eagle Add 3 Off of Bugby

SS EDA



- Used initial sampling data to determine where to focus Patent Tong sampling:
 - •SAV
 - Mud
 - Sand
 - Large rock
 - Sand and small rocks
 - Sand and shell hash
 - Sand and loose shell
 - Shell and/or oysters





Patent Tong Sampling

- Patent Tonged all points that had substrate based on initial sampling
- Added Patent Tong samples on additional bars of interest
 - Potential bars for planting: Bugby, Bodkin Shoals, Greenwood Creek, Batts Neck, Wildground (EB North), Cedar Island, Crab Alley Lumps, Herring Island, Hood
 - Sanctuaries: Tilghmans Point, Saw Mill Creek



Patent Tong Sampling

Questions

- 1. Is there substrate present? If so, how much?
 - 1. Recorded primary, secondary, and tertiary substrates
 - 2. Measured total volume of material (shell, hash, rocks, and oysters)
- 2. Are there oysters there? How many?
 - 1. Counted number of live and dead oysters (adults and spat)



Created a composite score based on:

- Total volume (L/m²)
- Live oyster density $(\#/m^2)$
- Primary substrate
- Bottom type from initial sampling (if sampled)

Score: <25%





26-50%



51-75%



76-100%









Miles River Ash Craft Second Point Old Orchard Gibsons Flat





Miles River Wye Town Sycamore Wild Ground Tidemill Scotland





Miles/Wye River Turtleback Hambleton Hill Hambleton Persimmon Tree Herring Island West End





Bugby Greenwood Creek Horseshoe Coffee





Prospect Bay Normans Marsh/ Normans Marsh Add 1 Parsons Island Narrows Bald Eagle Add 3 Hood Saw Mill Creek





Eyes

Cox Creek/West EB Cedar Island Stevens Batts Neck Crab Alley Wild Ground Lumps Pine Tree **Normans Fine** Bunker Hill Brick House Hill Parsons Island **Bodkin Shoals Tilghman Point**



Lessons Learned – Approach

- Scientific and stakeholder driven data collection, included immediate needs based on current management regime
- Sampling provided data to inform management viable vs. nonviable habitat
- Monitoring regime for PFSAs is possible at basin scale
- Repeatable for other areas



Summary & Recommendations

25-100% = Areas that can support enhancement

- Few oysters
- Sufficient cultch to support oyster habitat
- Some areas require more investment
- < 25% = No existing oyster habitat
 - No cultch



Discussion

Potential priority locations for planting – near-term vs. longer-term investments



Discussion

- Potential priority locations for planting near-term vs. longer-term investments
- Are areas with no oyster habitat still valuable to manage under PFSA?



Discussion

- Potential priority locations for planting near-term vs. longer-term investments
- Are areas with no oyster habitat still valuable to manage under PFSA?
- 2,700 acres (32%) could be modified Are these areas better suited for other uses? What uses?







Scores of 50% or lower



- Composite score grade
 - Identify areas that had a "good amount" (define) of "good substrate" (define) and are "near" (define) areas with high oyster density
- Take away: Very few oysters in EB, but we can identify areas with potential (i.e., a lot of available substrate)
- Point out areas where there was really nothing (mostly identified with initial sampling)

Composite Score

	0	1	2	3	4
Total Volume (L/m²)	0	0.1-3	3-6	6-10	10+
Oyster Density (#/m²)	0	0.1-5	5-15	15-30	30+
Substrate 1	Mud/clay	Sand	Shell hash	Loose shell or Rock	Oysters
Initial Sampling Bottom Type	Mud	Sand	Sand and shell hash	Sand and loose shell; Sand and small rocks; or Large rock	Shell/oysters