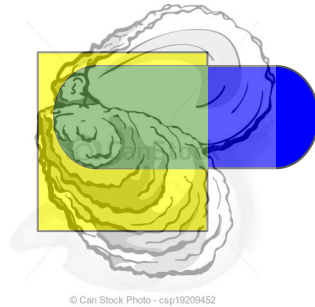


Adaptive Management: Oyster Restoration Framework Update



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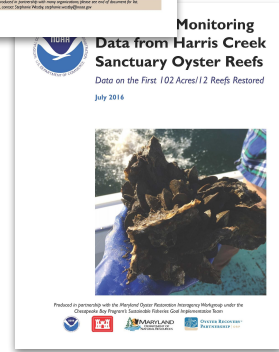
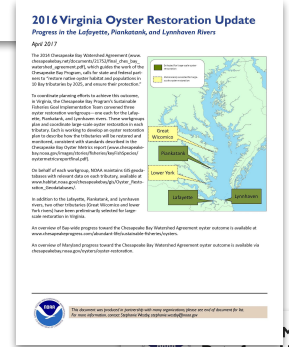
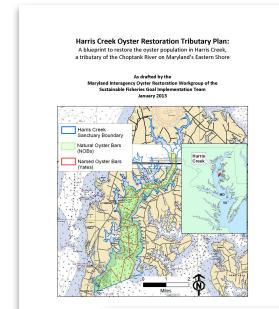
CBP Sustainable Fisheries GIT Meeting
December 18, 2017
Jay Lazar, NOAA Chesapeake Bay Office Oyster Team

Why am I here?

- NCBO Oyster Team conducted an internal review of the observed gaps in restoration logic, standards, and consistency. The proposed **Oyster Restoration Framework Update** is a result of this review.
- The request is an endorsement of this **Framework Update** on those tributaries that are either unnamed or without a tributary plan.

Why Review?

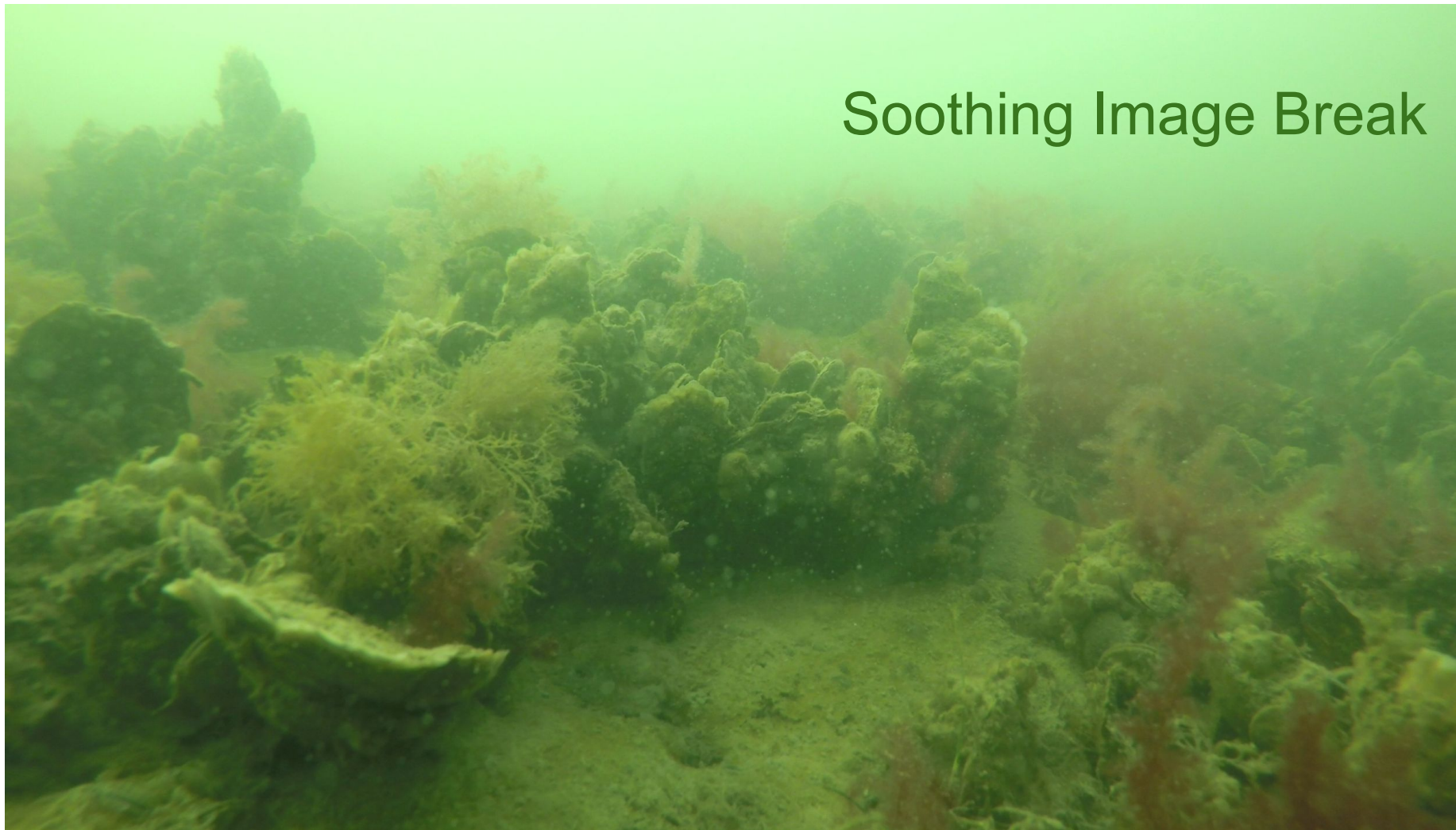
- After more than five years of planning, implementing, and monitoring restoration we have an obligation to discuss what's working, where challenges remain and ways to address them.
- Standardizing the process, where practical, eliminates some level of subjectivity and inconsistency.
- Terminology is important. Some terms have been used interchangeably confusing their intended purpose and/or have been misinterpreted.
- Restoration is expensive, and using everyone's investment and time effectively and efficiently is a key to success.



What issues did we hope to resolve?

- Some tributaries are not a good fit for the Original Framework.
- Lynnhaven River, more like a coastal bay than a mainstem tributary, does not conform to the original Maryland model of using **restorable bottom** to set the goal.
- A refined methodology to establish goals for a broader range of systems was needed.

Soothing Image Break

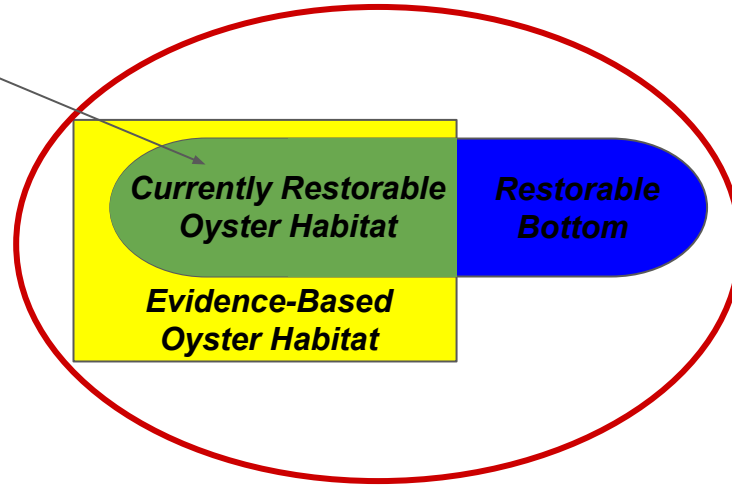


What do the **Metrics** say?

- Metrics Language
 - An operational goal of restoring 50-100% of **currently restorable oyster habitat** represents a reasonable target for tributary-level restoration. [This is different than currently restorable bottom!]
- Behind the Language
 - Dramatically increasing oyster populations and recovering a substantial portion of the ecosystem functions provided by oyster reefs within a tributary requires the successful functional restoration of a significant proportion of the historical oyster reefs within a tributary.
 - It is necessary, therefore, to establish target levels for restoration activity within a tributary that constitute operational or intermediate measures of success that facilitate restoration planning and implementation.

Getting the Lay of the 'Land'

This is your
100%



System/Tributary that you wish to restore populations and ecological services



Area of **Currently Restorable Oyster Habitat**- sets 100% for any system



Area of **Evidence-Based Oyster Habitat** (informed by historical oyster data)



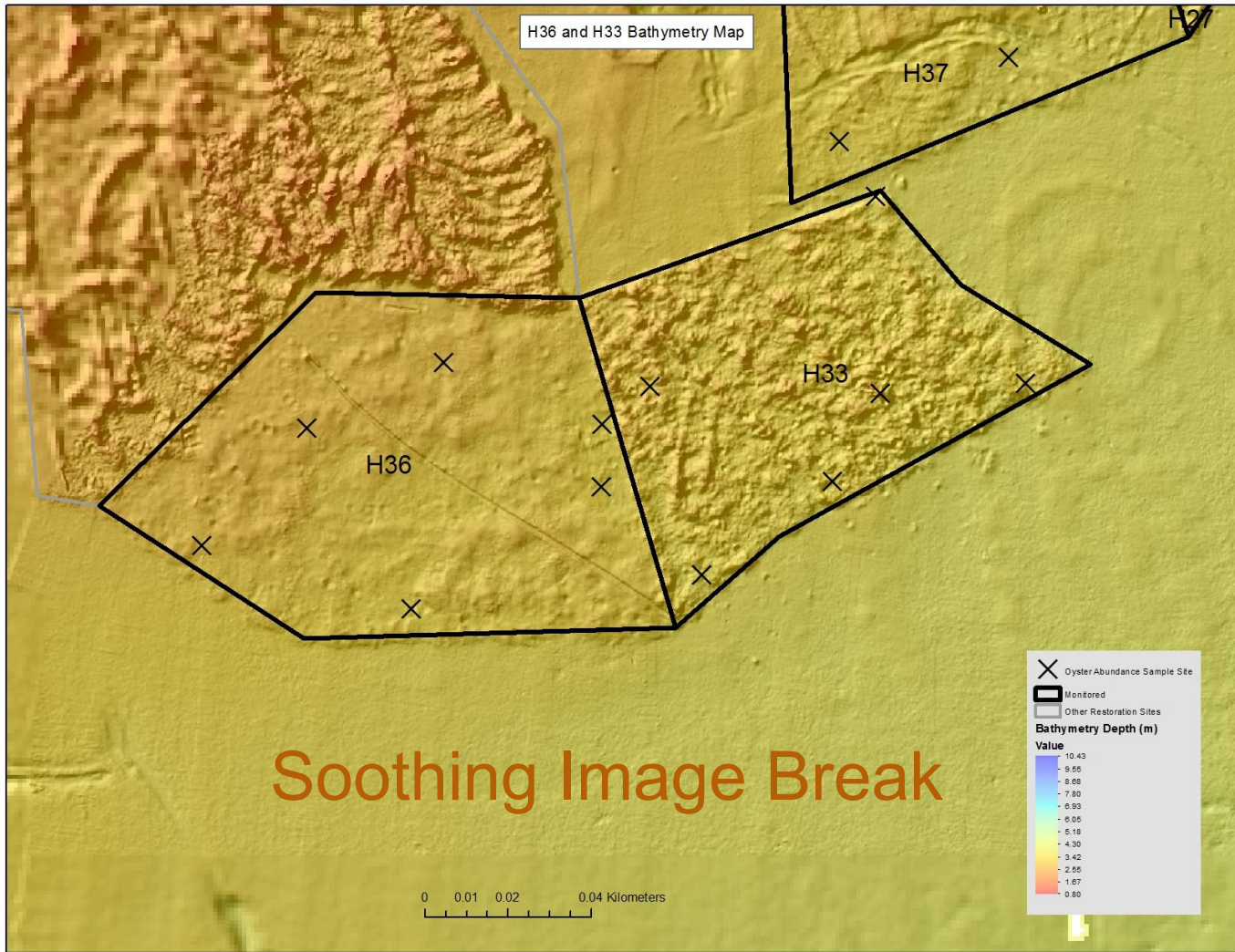
Area of workgroup approved **Restorable Bottom** - designates the best place to restore in a system

Terminology

- **Goal Setting**: the process of determining the amount of **currently restorable oyster habitat** a system has and once had in an ecologically productive state
- **Currently Restorable Oyster Habitat**: **Evidence-based oyster habitat** within the restoration constraints determined by the workgroups
- **Evidence-Based Oyster Habitat**: the seabed observed by remote sensing and ground truth data including **historical oyster habitat**
- **Historical Oyster Habitat**: known oyster habitat that has occurred in the past
- **Restorable Bottom**: hard seabed that permits the best chance of subtidal oyster restoration success informed by suitability indices
- **Restoration Targets**: agreed-upon percentage equal to or greater than half of the determined 100% of **currently restorable oyster habitat**

The Big Picture

- Distinguishing and standardizing **how we set the goal** and **develop targets** from **where we restore** and from **what is counted toward meeting the goal** are critical steps toward advancing large-scale oyster restoration.



Soothing Image Break

Restoration Acreage Goal Setting (Subtidal Subtext)

- Original Method: Quantify **restorable bottom** to determine 100%:
 - 4' shallow depth limit (approximate survey extent and approximate historic SAV habitat)
 - Tributary-specific deep depth limit (proxy for DO and where you would restore)
 - Hard bottom (Includes sand and muddy sand seabeds in addition to viable oyster habitat)
- Proposed Method: Quantify **currently restorable oyster habitat** to determine 100%:
 - Shallow depth limit is tributary specific and can include historical oyster habitat more shoal than that limit
 - Quantifies all restorable oyster habitat above tributary specific deep depth limit (proxy for DO)
 - Excludes sand and muddy sand seabeds, unless evidence of some substantive shell quantity is observed
 - Does not designate **restorable bottom**, just sets the goal

Effects on “Restorable Bottom”

- No changes are proposed
- Workgroups define the extents and ranges of what is “restorable” within a tributary by defining **restorable bottom**
 - **Does NOT exclude intertidal restoration from occurring (spoiler: and being counted)**
- Workgroups maintain the flexibility to revise extents and ranges as they see fit
 - Includes the use of geographically distinct subsegments of a tributary
 - Shallow depth limit is a tributary-specific value and takes into account other critical and existing habitats
- Restoration can occur outside of **restorable bottom**

Implications of the Proposed Goal-Setting Method

- **Working groups operating in both** dynamic and shallow tributaries with little **evidence-based oyster habitat** and larger, deep tributaries with significant **evidence-based oyster habitat** are not artificially burdened with increased acreage goals associated with sand and muddy sand seabeds
- With **standardized** methods for setting the goal, flexibility to meet the goal is placed within the workgroup structure
- **Restorable bottom** gives the workgroup the flexibility to conduct/construct restoration in areas that avoid use conflicts

Implications to Acreage

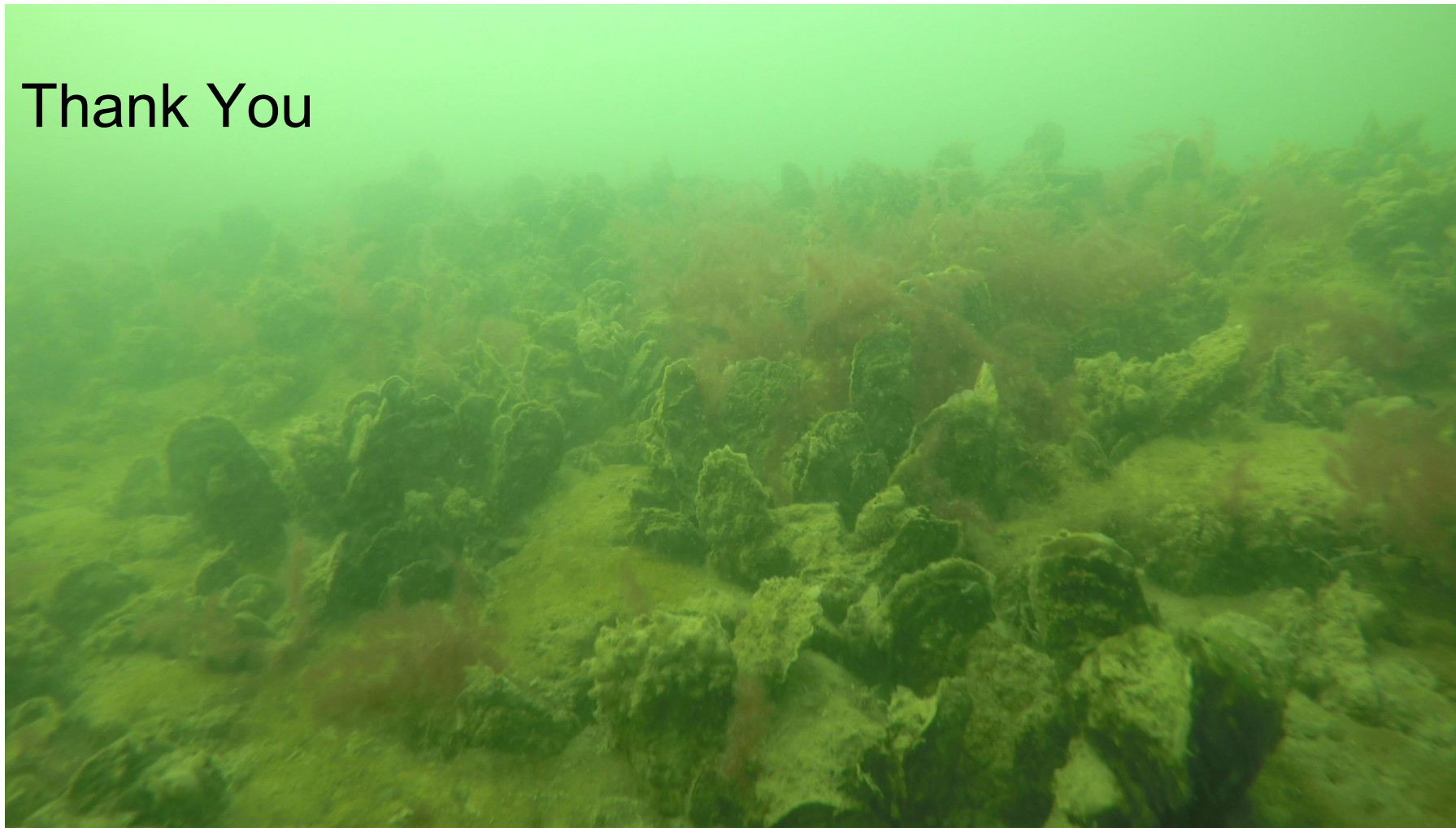
Numbers are in acres	Little Chop	Harris	Tred Avon	Lafayette	Lynnhaven	Piankatank
Tributary Plan RBA 100%	685	600	251	146	TBD	924
50% of goal	342.5	300	126	73	TBD	512
Plan target (acreage and %)	440/64%	350/58%	147/58%	80/55%	TBD	TBD
Proposed Method CROH 100%	717	454	249	120	108*	456
Minimum restoration target	358.5	227	125	60	54	228

*Lynnhaven River numbers represent a starting point. 108 acres are the currently restorable oyster habitat (CROH in the table) per the geodatabase and do not include any historical evidence based areas that may be included to an updated 100%.

Fisheries GIT Approval Needed

- Endorse application of the **Oyster Restoration Framework Update** to tributaries currently without tributary plans and to any newly selected tributaries

Thank You



Setting Goals and Targets

