Tiered Implementation of the Bay TMDL

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Discussion with Principals' Staff Committee 20 December 2024

Based on "Tiered Implementation of the Chesapeake Bay TMDL: STAC Prospectus", Kurt Stephenson, Denice Wardrop, Leonard Shabman, Lee McDonnell, Gary Shenk, Kenny Rose, Mark Monaco, William Dennison, Jeremy Testa, Rich Batiuk, Zach Easton

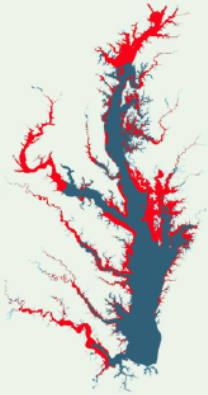
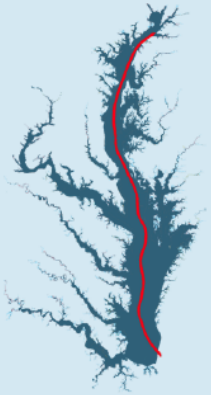
The Problem

The Scientific and Technical Advisory Committee's Comprehensive Evaluation of System Response (CESR) report highlighted several challenges that make achieving 100% of the Chesapeake Bay water quality standards much more difficult than expected. Specifically, meeting dissolved oxygen goals in the deep waters of the Bay's main channel is expected to take decades rather than years under current practices and programs.

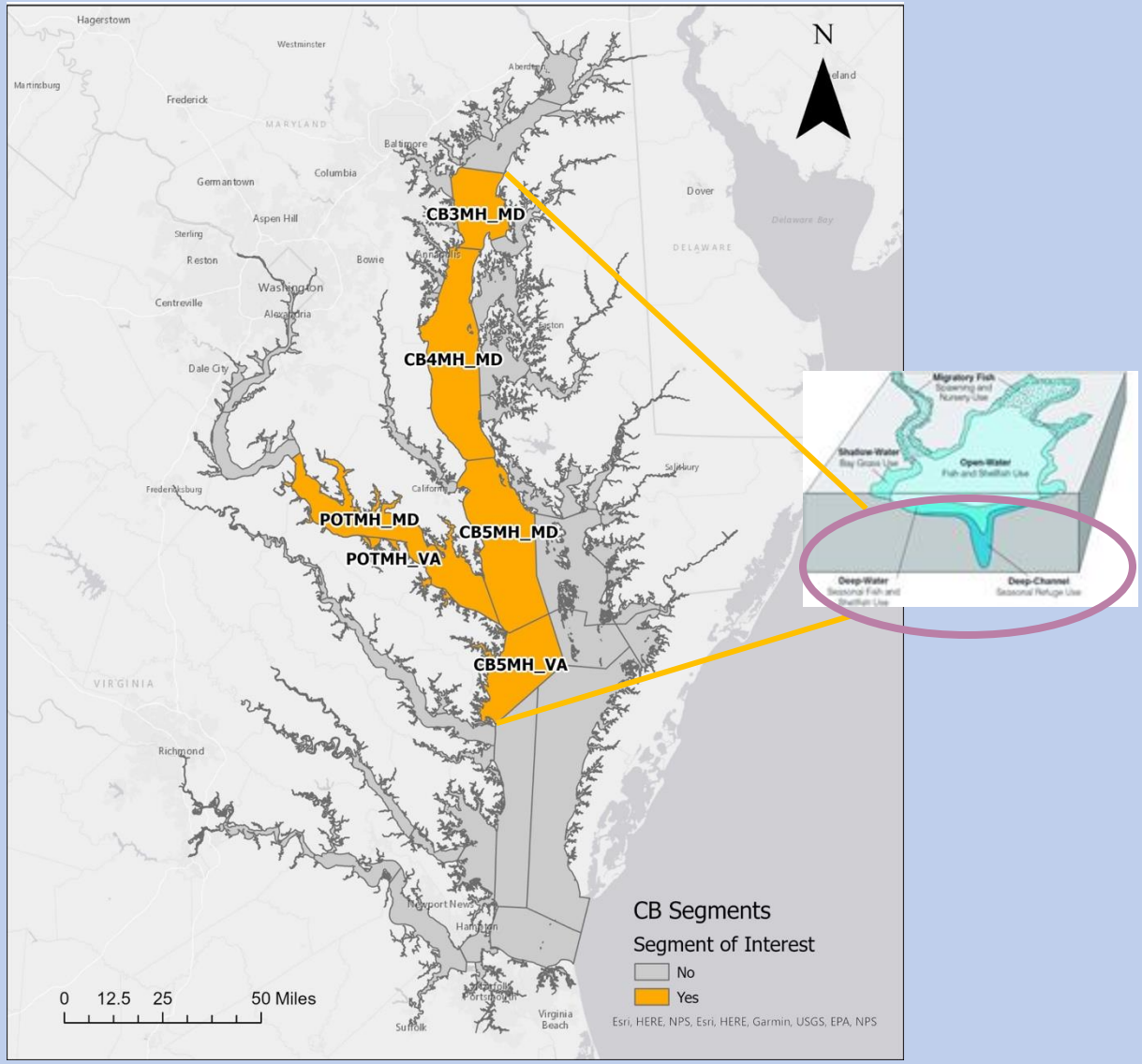
Definition

A tiered approach to TMDL implementation establishes staggered timelines, with interim goals that prioritize pollutant load reductions to segment/habitat regions of the Bay that can provide the greatest anticipated benefit to living resources

Approaches to Implementing the Chesapeake Bay TMDL

	Tiered Approach	Conventional Approach
Areas prioritized to benefit from nutrient reductions	 Areas where water quality (DO, water clarity) improvements can improve high priority living resource habitats	 Areas necessary for full attainment of water quality criteria (DO in deep water habitats in the main channel)
Implementation objective	Water quality and other habitat factors	Water quality
Implementation horizon	10-15 yrs for interim goals	10-15 yrs for final TMDL target
Final load targets	Same	Same
Permittee obligations	Same	Same

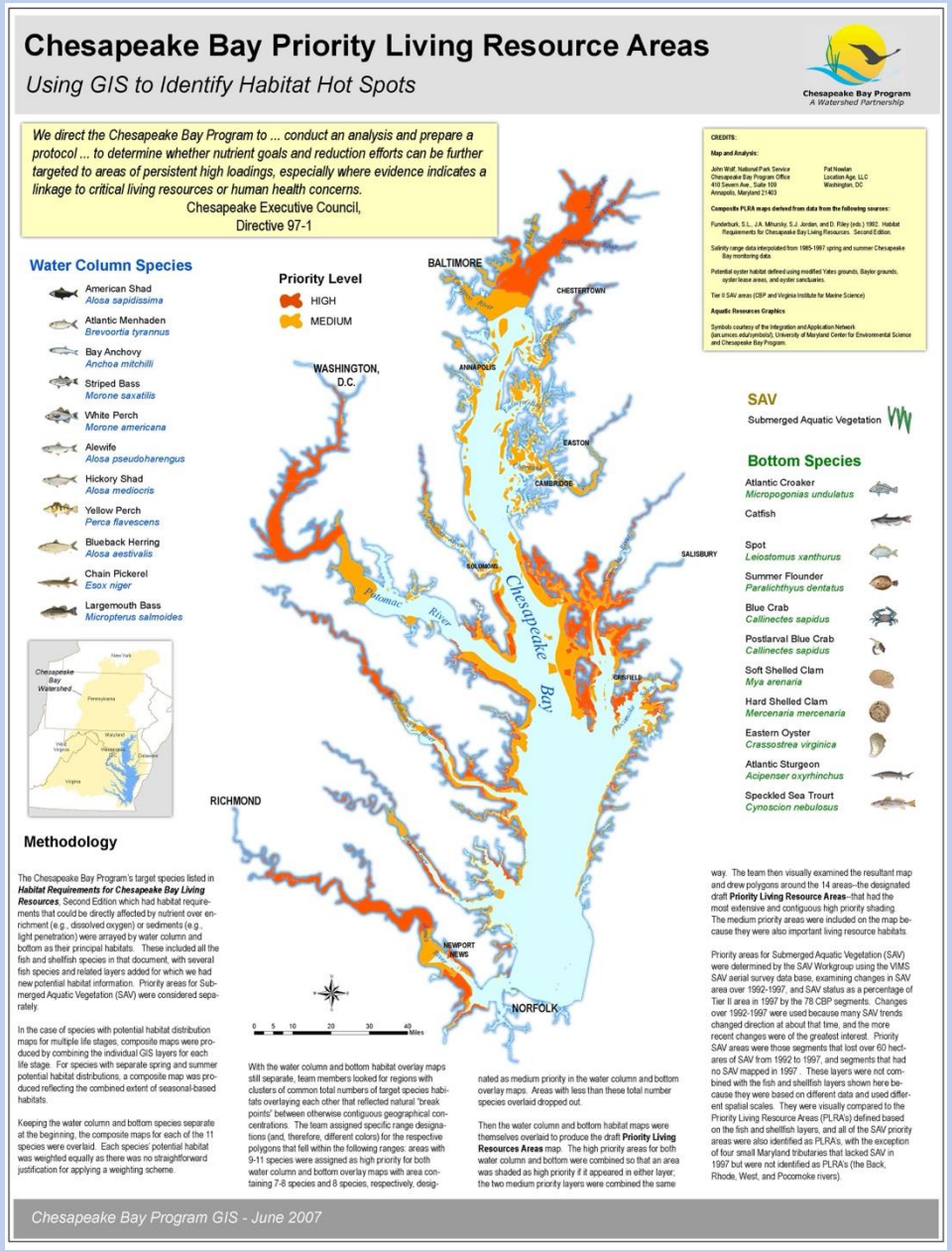
Existing Approach to TMDL Implementation



Nutrient load targets set to 100% WQS, focus on most challenging to achieve: DO criteria in deep water habitats in 4 segments (orange, left).

Nutrient effectiveness across watershed is set based on DO impact in these areas

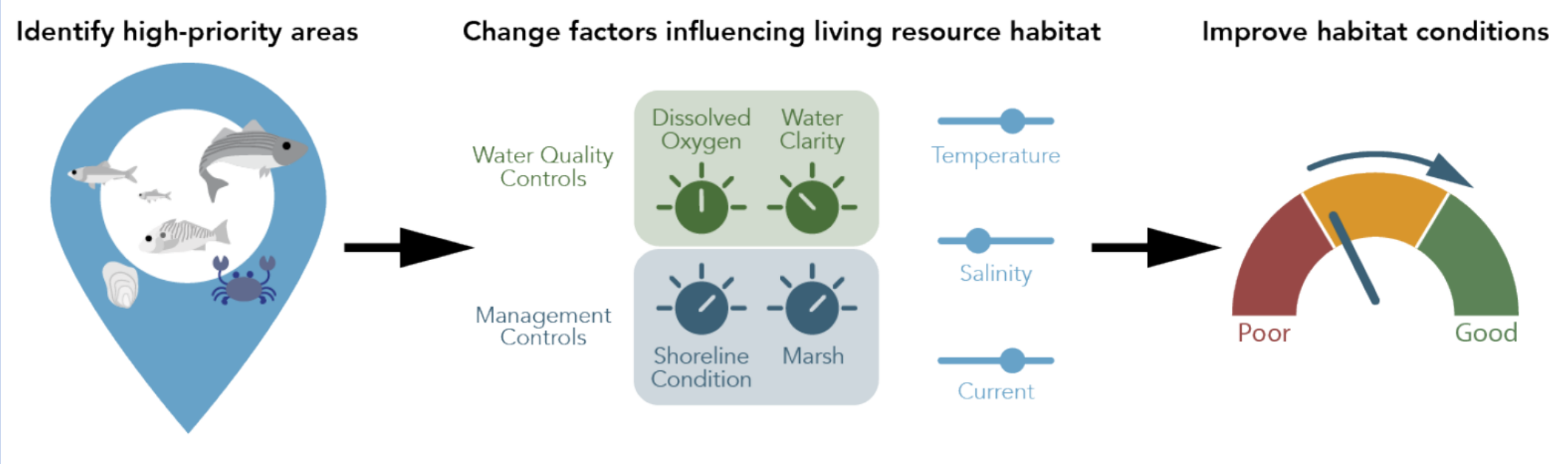
Tiering TMDL Implementation



Establish interim nutrient and sediment targets based on places where water quality is a factor for living resource potential (red & orange, left), while acknowledging:

- interdependence across areas (including progress in main channel);
- importance of local, non-WQ living resource factors/stressors.

Select where changes in water quality can potentially improve habitats



Summary:

1. Prioritize water quality improvements based on impact to living resources

2. Achievable, more impactful pollutant reductions

3. Science and technical capacity to implement but will require time and effort