

COMPREHENSIVE EVALUATION OF SYSTEM RESPONSE (CESR) to Water Quality Management Efforts, Part 2

Chesapeake Bay Commission 18 November 2022



Two Premises

- Achieving our desired outcomes is proving more challenging than we expected.
- There are opportunities to improve our effectiveness, but they will require a significant change in our thinking and our programs.

Chesapeake Bay Agreement: Sustainable Fisheries, Vital Habitat - Water Quality, Toxic Contaminants Heathy Watershed, Climate Resiliency, Land Conservation, Stewardship, Public Access, Environmental Literacy **Clean Water Act** Establish Water Quality Standards [1] Designated Uses: Living Resources (defined as 5 habitats) Water Quality Criteria (WQC) Dissolved Oxygen, Water clarity/SAV, & Chl-a across 5 habitats Monitor & Assess [2] Establish TMDL [3] Pollutant Stressors: Nitrogen (TN), Phosphorus (TP), & Sediment (TSS) Pollutant Targets TN: 214.6 m/lbs/yr TP: 13.4m lb/yr TSS: 18,587m lb/yr Design & Select Implementation [4] Implementation Programs [5] Federal Permitting Fed/State Nonpoint Programs Funding TMDL Accounting & Accountability System Response Climate Economy Population Technology

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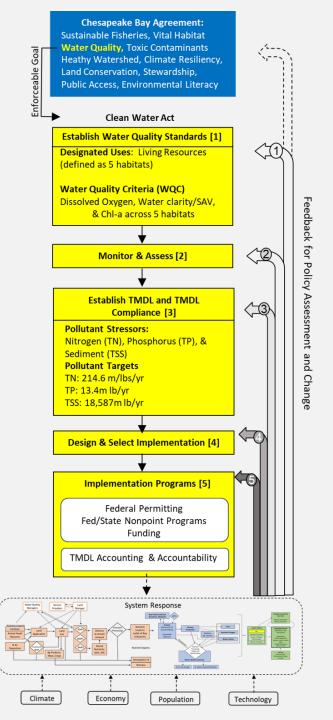
Climate

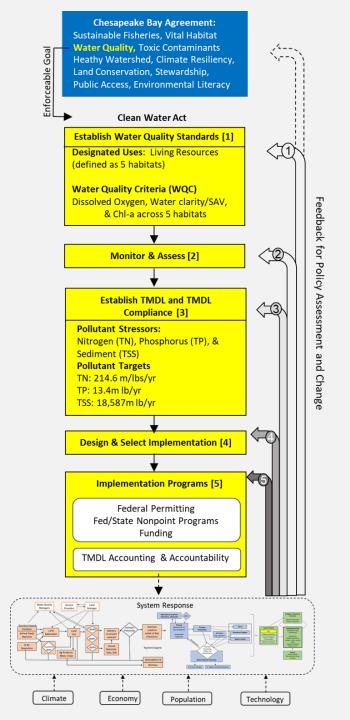
Economy

Technology

SUMMARY OF FINDINGS

- Uncertain if it is possible to achieve water quality criteria (DO, SAV), but efforts have stemmed further declines in water quality.
- Existing nonpoint source water quality programs are insufficient to achieve the nonpoint source reductions required by the TMDL
- It might not be possible to meet the all TMDL and WQ goals but this may not be necessary to enhance and support living resource goals.
- The existing adaptive management process has limited capacity to effectively address the uncertainties and response gaps described in this report.





Implications



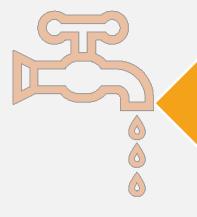
Improving effectiveness of nonpoint source management programs



Improving living resource response to water quality management efforts

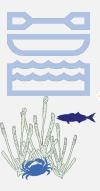


Expand adaptive management



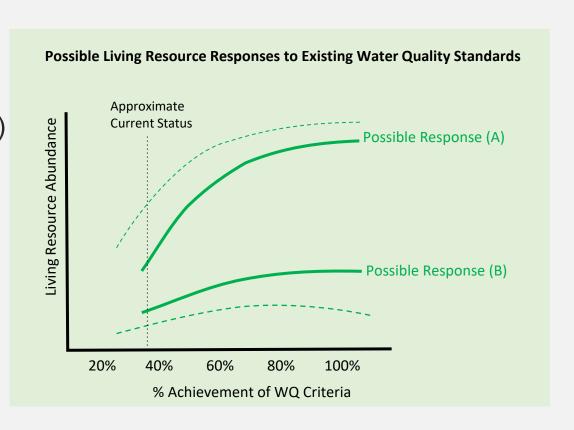
Improving effectiveness of nonpoint source management programs

- Spatial targeting
- Outcomesbased incentive programs
- Targeted, performancebased requirements
- Facilitating policy innovation through "sandboxing"



Improving living resource response to water quality management efforts

- Expression of the criteria can be shifted to more accurately reflect necessary conditions for habitat suitability (value, mode, how and where measured)
- Achievement of TMDL targets could be prioritized according to location (segments) or habitat type.
- Addition of management actions to elevate LR response to WQ management efforts.





Expand adaptive management

 Expanded AM will need to include all levels of policy feedback are learning in the existing CWA approach (arrows 1 through 4).

- Who?
- How?
- Now is an opportunity to developed expanded adaptive management processes

