Chesapeake Bay Program Reaching 2025

A Progress Report

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Executive Council Charge

Charting a Course to 2025 and Beyond

- October 11, 2022, directed to the Principals' Staff Committee
- Part 1: This report, Reaching 2025
  - Progress toward achieving the 2014 Outcomes by 2025
  - Additional focus on water quality/TMDL, emerging science and monitoring, climate and DEIJ, wetlands and forest buffers
  - Considerations for actions beyond 2025
- Part 2: Beyond 2025
  - Process began in June

Outcome Attainment by 2025

17 Outcomes Are on Track*

Water Quality	Watersheds	Stewardship	Partnerships	CRWG
WIP 2017 WQ SAM	Land Use M&M Land Use Opt.	ELIT Public Access Sustainable Schools Protected Lands	Local Leadership	Climate Monitoring
Habitat	**Fisheries**			
Fish Passage Stream Health	Blue Crab Abun. Blue Crab Man. Fish Habitat Forage Fish Oysters			

*Two Uncertain: Healthy Watersheds and Stewardship

Outcome Attainment by 2025

12 Outcomes Are off Track

Water Quality	Watersheds	Stewardship	Partnerships	CRWG
WIP 2025 Forest Buffer Toxic P&P Toxic Research Tree Canopy		Diversity Student		Climate Adaptation
Habitat	**Fisheries**			
Brook Trout Black Duck Wetlands SAV				

Important Successes

Stream Health

- Clean streams with healthy invertebrate communities
- Key support for freshwater species
- Accounting, tracking, monitoring in place

Fish Passage

- Opened 619 stream miles/2 years, far above target of 132
- Shad, herring, striped bass, eel
- Key to the economy and ecology of the region
- Key targeting and accounting systems in place

Important Successes

Public Access

- 231/300 access sites complete
- 21 new sites per year
- Key for equity and inclusion
- Important for public support and well being

Oysters

- 7/10 tributaries complete + bonus tributary
- York River on deck this summer
- Internationally recognized success
- Generate more oysters, fish habitat, and clean and clear water

Common Challenges

A little more than 1/3 of the outcomes are off track.
Some common (although not universal) challenges have emerged.

- Quantitative and qualitative outcomes have their place, the latter often a precursor for the former (ELIT, forage fish). However, concrete milestones to measure qualitative progress are still needed.
- Geographic and numerical targets, standardized measures of success, accounting and monitoring systems are critical for quantifiable outcomes.
- Jurisdictional and federal commitments, roles, and responsibilities for each outcome need to be clear. Success is often driven by a federal champion/coordinator looking across jurisdictions, coupled with one or more state (or NGO) champions/coordinators for regional relevance/legitimacy. Collectively they are working on behalf of the Partnership.

Common Challenges

A little more than 1/3 of the outcomes are off track.
Some common (although not universal) challenges have emerged.

- Ambitious outcomes are inspiring and help drive change, and they must be set with a reasonable understanding of the costs and commitments and who will try to cover them.
- Avoid implementing many small projects that can dilute financial and staff resources. Focus on high-impact actions that advance toward outcome attainment (operate at appropriate scale).
- Many outcomes would benefit from better engagement with communities, nonprofit organizations, and private landowners to identify high-priority geographies and match outcomes with local partner interests and address diffuse private landowner negotiations (e.g., nonpoint, forest buffer, fish passage, living shoreline).

Common Challenges

A little more than 1/3 of the outcomes are off track.
Some common (although not universal) challenges have emerged.

Tragedy of the Commons

- The CBP is a distributed network centered around EPA Program Office
  - Cross-program staff, funding, and mandate.
  - Funding is modest relative to resources spent in the watershed (CBARA), and highly constrained.
- It is often unclear who should answer calls for additional resources to accelerate progress toward outcomes. This is a collective CBP responsibility that is not well addressed.
- If something is everyone's responsibility, it may be no one's.

TMDL and Phase III WIP

Some Clear Bright Spots (really)

- Targeting, tracking, roles and responsibilities, cost estimates, implementation plans in place.
- 49%N, 64%P, 100%S: not where we want them to be, but real progress nonetheless.
- Climate change and population growth estimates considered, quantified, and planned for inclusion.
- Conowingo WIP, financing, etc.: challenging, but progress.
- Fertilizer analysis: important challenge recognized.

TMDL and Phase III WIP

Challenges to Be Addressed

- Non-point source pollution is where future gains are likely to come from. Capacity to work with private landowner to target and incentivize high-impact BMP.
- Targeting BMP implementation in high-impact areas, prioritizing resources in these locations.
- Implement Conowingo WIP, include climate/development numbers in model, and update fertilizer estimates in model.
- Increase understanding of desired system response resulting from BMP implementation (DO, Clarity, SAV, Chlorophyll a).

Emerging Science, Monitoring, and Analysis

Recent advances in geospatial analysis, high-resolution monitoring (spatially and temporally), and biological and physical modeling will allow new management paradigms to emerge to address well known conservation challenges including those emerging with climate change and increased development pressure.

Some Examples

- High-resolution land cover data
- Targeted shallow-water modeling & habitat suitability modeling
- 4D Interpolator
- Ecological thresholds (shoreline hardening, impervious surface, temperature)
- Continuous hypoxia sensors
- Expanded use of satellite data for Bay-wide monitoring

Emerging Science, Monitoring, and Analysis

These advances, coupled with analyses such as the *Comprehensive Evaluation of System Response* and *Rising Watershed and Bay Water Temperatures* reports, suggest new approaches be considered beyond 2025.

- Shift the emphasis of science and monitoring from tracking TMDL attainment in the deep trench to focusing on improving conditions in culturally, ecologically, and economically important places in the watershed with an increased focus on shallow-water areas.
- Implement high-resolution modeling and monitoring in prioritized areas to provide feedback on living resources and habitat condition.

Emerging Science, Monitoring, and Analysis

- Enhance capacity building and community engagement strategies to develop a collective vision resulting in scientifically informed conservation and restoration practices that achieve the CBP outcomes in prioritized geographies.
- Incorporate more social information/data into CBP geospatial products to help better understand communities and inform work (e.g. increasing/decreasing population, languages spoken, household income).

Climate: Outcomes

Bin 1: Logic and action plans progress through prioritization (climate)

- Marsh migration and green infrastructure.
- TMDL model inclusion of climate impacts.
- Development and implementation of temperature and precipitation indicators.
- Significant concerns over how to address a universal challenge (climate change) with current working group structure.

Climate: Directives

2014 Climate and Diversity Outcomes Strengthened by Directives

Climate Directive

- Address the threats of climate change in all aspects of the partnership's work.
- Prioritize communities and habitats most vulnerable to ever-increasing risks.
- Connect Chesapeake Bay restoration goals with emerging opportunities in climate adaptation, mitigation, and resilience.

Diversity: Outcomes

Bin 1: Logic and action plans progress through prioritization (diversity)

- Inclusion of DEIJ criterion in SRS process.
- Changes in grant criteria to increase representation.
- Enhance education and training opportunities for CBP staff.
- Initiation of Workforce Action Team.
- Development of C-StREAM program.
- Disconnect between outcome (community engagement focus) and target (CBP representation focus).

Diversity: Directives

2014 Climate and Diversity Outcomes Strengthened by Directives

Diversity Directive

- Strengthen and improve DEIJ…organizational structure, leadership, policy, goals, restoration activities, work plans, grant guidance… "everywhere."
- Foster equitable recruitment.
- Develop long-term relationships, partnerships, collaborations.
- Ensure CBP program benefits are distributed equitably.

Overview: Climate and Diversity Directives

- The Directives are ambitious, far reaching, and appropriate but not sufficiently or consistently supported.
- The Diversity and Climate Resiliency working groups are making progress on the outcomes with some intersection with the Directives.
- The Distributed CBP network is making some additional progress on the Directives, but in an uncoordinated and unaccountable manner.
- Without specific objectives/actions, cost estimates, commitments (roles/responsibilities), and accounting.
- While good work is happening, tragedy of the commons is a concern; CBP doesn't have a good structure to work towards cross-cutting outcomes.

Wetlands and Forest Buffers

These outcomes are large, ambitious, and important.

- CBP recognized the need to accelerate progress because of cross-outcome benefits for fish and wildlife habitat, climate resiliency, clean water, TMDL, and DEIJ.
- Advancements have been made.
  - Jurisdictional wetland action plans and buffer action strategies.
  - Recent increases in planning and implementation funding leading to on-the-ground gains.
  - Clear crediting links to TMDL as approved BMP.

Wetlands and Forest Buffers

Current approaches are producing results that are **orders of magnitude** away from what is necessary to achieve successful outcomes.

- Value proposition for freshwater wetland and forest buffer implementation is insufficient for landowners.
- Most common freshwater wetland and forest buffer programs are unable to provide sufficient compensation, implementation, and maintenance solutions to affect change.
- Freshwater wetland and forest buffer programs require local community engagement that is not taking place at a scale to create desired change.

Wetlands and Forest Buffers

Some improvements can be made to the current system.

- Develop and implement sufficient targeting, tracking, and reporting systems.
- Establish criteria-driven geographic targeting coupled with restoration and maintenance cost estimates.
- Incorporate climate and DEIJ considerations into geographic criteria.
- Identify federal and state representatives to lead restoration and conservation efforts in high-priority areas.
- Split freshwater and tidal wetland outcomes in the future given the differences related to their conservation and restoration requirements.

Conclusions

- Roughly ⅔ of our outcomes are on track and represent significant accomplishments.
- In spite of those successes, we have work to do on the remaining ⅓ of the outcomes:
  - Targeting, developing cost estimates, tracking, monitoring, and reporting are critical components of quantifiable outcomes.
  - Champions who take responsibility for leading/coordinating outcomes are critical. Often they include a federal representative along with a jurisdictional one, or in some cases an NGO. Champions often contribute and advocate for catalyzing funding, staff, and resources.
  - Developing networking systems to engage and incentivize private landowners and communities to address challenges such as nonpoint source pollution, living shorelines, forest buffers, and freshwater wetlands.

Schedule

Draft made available for public review planned for 7/19

Summary presentation for PSC 7/21

Management Board comments due 8/11

Public review closes 8/18

Final Management Board review 8/25

PSC review 8/28-9/11

Steering Committee discussion of PSC comments 9/12-9/15

Final Report to PSC 9/26