



Chesapeake Bay Program
Science. Restoration. Partnership.

September 1, 2026

Chesapeake Bay Program

Indicators 101

Katie Ayers

EPA CBPO | Indicators Coordinator

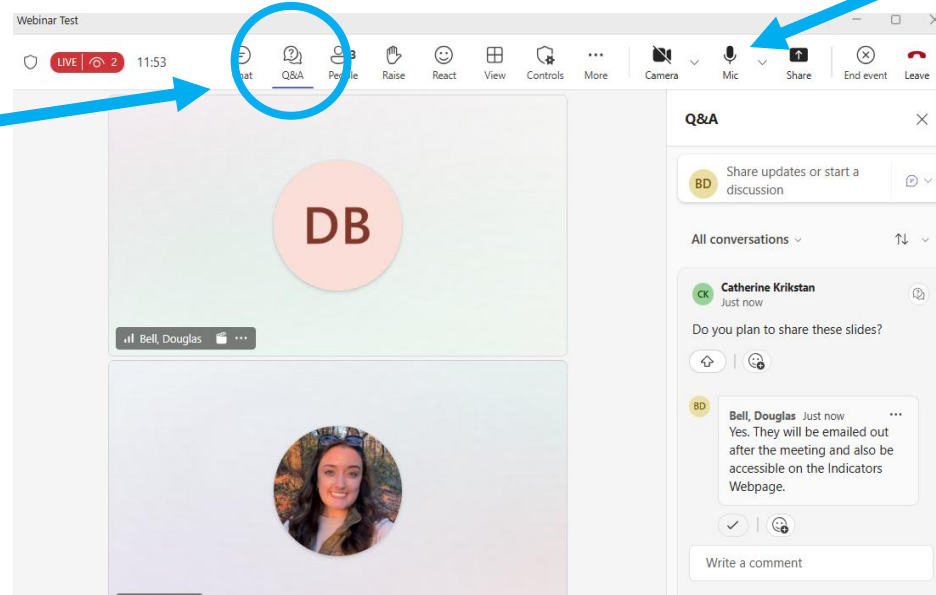
Doug Bell

EPA CBPO | Accountability Team Lead

Housekeeping

Participants have mic access.

Please ask questions!
Type them into the Q&A
Box located...

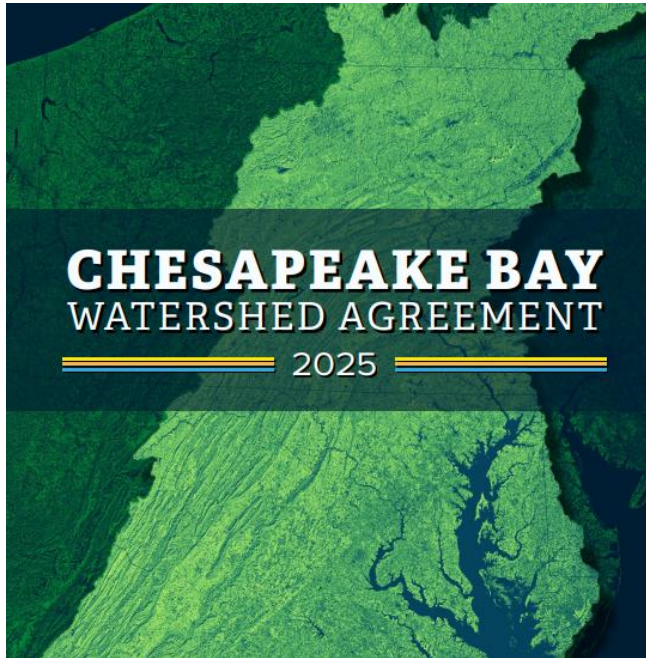


This webinar is being recorded. It will be posted to the Chesapeake Bay Program's YouTube page: <https://www.youtube.com/c/chesbayprogram>.

Agenda

- 1 **Context** – Why, What, and Who
- 2 **CBP Indicators** – What
- 3 **Developing Indicators and Alternatives** – Who, How
- 4 **Updating Indicators** – Who, How, When

Indicators are used to demonstrate progress towards implementing the *Watershed Agreement*.



Specific
Measurable
Achievable
Relevant
Timebound

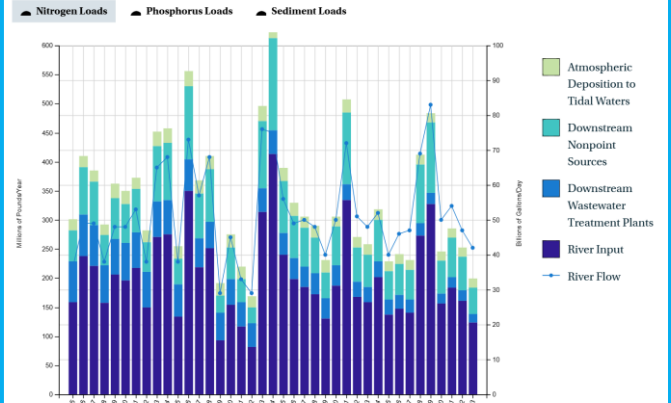


Nutrient and Sediment Loads and River Flow to the Chesapeake Bay (1990-2023)

River and watershed input of nutrient and sediment loads. Years denote the water year measured between October 1 and September 30.

[VIEW CHART](#)

[VIEW TABLE](#)



Indicators are a product that requires effective design, maintenance, and tailoring to an audience.

Data

Raw and Processed Data



Analyses

Data Visualizations and Interpretations



Publications

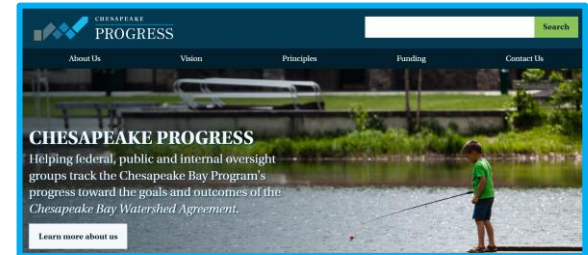
Reports, Press Releases, and Articles



Chesapeake Bay Program Data Resource Deliverable Guidance



Indicators Framework



Indicator content serves many audiences and products.



Primary Audiences:

- 1) Federal Oversight
- 2) Public Oversight
- 3) Internal CBP Oversight
- 4) CBP Staff

Secondary Audiences:

- 1) Media
- 2) Educators



Recent Press Releases

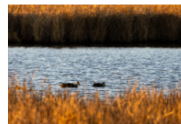


August 6, 2026

Chesapeake Bay watershed jurisdictions continue working toward nitrogen and phosphorus goals, with sediment goal already achieved

New target date set with revised Chesapeake Bay Watershed Agreement

[Read story >](#)



January 20, 2026

What black ducks can tell us about the state of the Chesapeake's wetlands

Updated data reveals progress, persistent challenges and new goals for the future

[Read story >](#)



There are many people involved with Indicators.

Data

Raw and Processed Data



Analyses

Data Visualizations and Interpretations

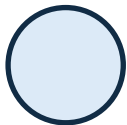


Publications

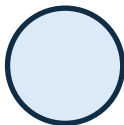
Reports, Press Releases, and Articles



Outcome Group



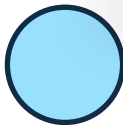
Goal Team



Data Supplier(s)



Outcome Representative



Angie Wei, **GIS Analyst**



Katie Ayers,
Indicators Coordinator



Catherine Krikstan,
Web Product Manager



Doug Bell,
Accountability Team Lead



Marisa Baldine,
Communications Director



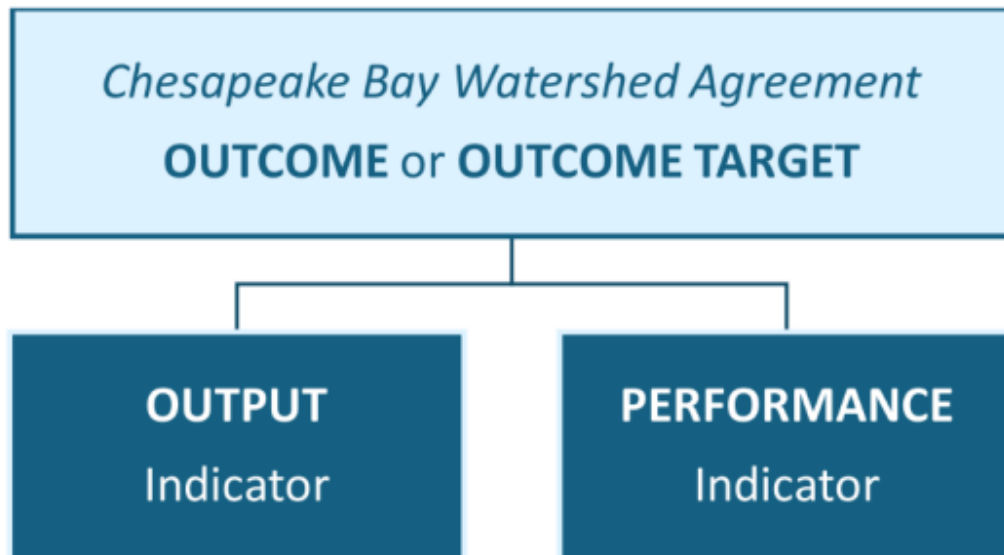
Jake Solyst,
Web Content Manager

INDICATORS TEAM

CBP Indicators have specific criteria.

- ✓ **RELEVANCE AND UTILITY:** Must relate directly to an **Outcome** or **Outcome Target** and illustrate measurable progress over time.
- ✓ **FEASIBILITY OF IMPLEMENTATION:** Must be able **sustain data collection**, analysis, and maintenance over time.
- ✓ **REPRESENTATIVENESS:** Methods for sampling, measuring, and analysis must be **robust and consider variability** over time and space.
- ✓ **TRANSPARENT INTREPRETATION:**
 - A [Data File](#) is required for each Indicator, which collates relevant data, calculations, required metadata, and **summarizes meaningful information** into tables or figures.
 - An [Analysis & Methods \(A&M\)](#) document is also required for each Indicator, which documents how data are collected, analyzed, **interpreted, and communicated**.

CBP Indicators will generally fall into two categories.



***Multiple Indicators may be needed** to effectively track and report progress toward an Outcome.*

An **Output Indicator** communicates the direct outputs of actions or projects implemented over time.

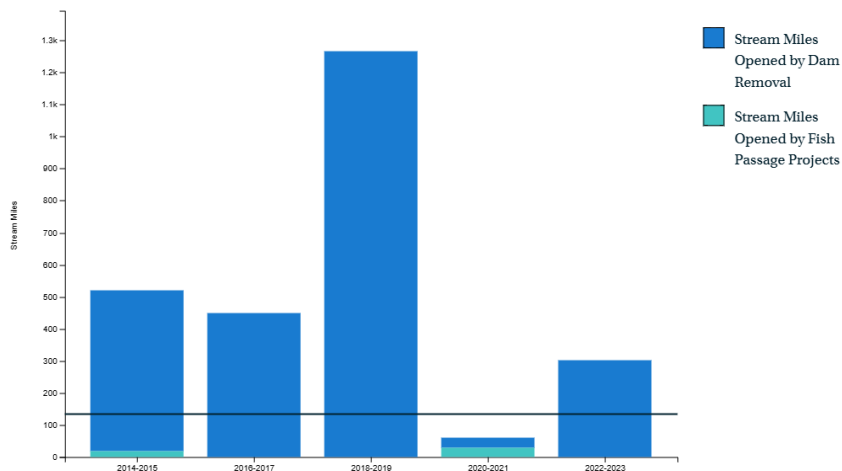
Fish Passage Outcome

Improve habitat and water quality while creating more resilient and sustainable populations of fish and other aquatic organisms **by removing barriers** throughout the Chesapeake Bay watershed's coastal and freshwater rivers and streams.

- Restore passage and connectivity to **at least 150 miles of aquatic habitat every two years.**

Stream Miles Opened to Fish Passage (2014-2023) 📊

[VIEW CHART](#) [VIEW TABLE](#)



A **Performance Indicator** measures environmental, programmatic, or system conditions.

Submerged Aquatic Vegetation (SAV) Outcome

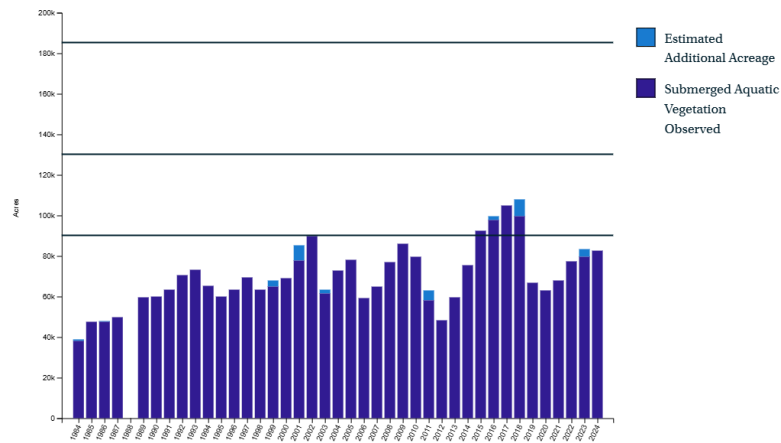
Sustain and increase the **habitat** and ecosystem benefits of SAV in the Chesapeake Bay. Achieve and **sustain the outcome of 196,600 acres** of SAV Bay-wide necessary for a restored Bay.

- Measure progress against the following targets for each salinity zone:
 - Tidal Fresh: 21,700 acres.
 - Low Salinity: 13,100 acres.
 - Medium Salinity: 126,000 acres.
 - High Salinity: 35,800 acres.
- Measure progress toward this Outcome against interim targets of 90,000 acres by 2030, 95,000 acres by 2035 and 100,000 acres by 2040.

Submerged Aquatic Vegetation (SAV) Abundance (1984-2024) 📊

Factors such as adverse weather conditions, water clarity and security restrictions over military air space have prevented researchers from collecting aerial imagery. For these unmapped areas, estimates of SAV acreage are based on the prior year's survey. Data was not collected in 1988.

[VIEW CHART](#) [VIEW TABLE](#)



Not every Outcome requires an Indicator.

In some cases, alternative tracking methods supported by qualitative information may need to be developed outside the Indicators Framework for publication on ChesapeakeProgress.

Outcomes without an Indicator should be able to describe:

1. How progress toward the Outcome will be demonstrated.
2. How often progress will be updated and assessed.
3. How the CBP will communicate progress to support decision-making and adaptive management.

Land Use Planning and Decision Support Outcome

- Develop at least five use cases annually, informed by and provided at the county, watershed or municipal scale to inform land use planning and decisions and maintain the ecological integrity of watersheds supporting good stream health.
- Highlight at least two widely applicable land use cases annually to showcase best practices and share this information with local governments and partners through diverse communications products.

Progress: Demonstrated by creation and publication of use cases, highlighting use cases and best practices through written narrative, map visual of project sites, links to communications products, etc.

Outcome groups are responsible for developing Indicators or alternative methods for tracking progress.

Development Phase

- A new Indicator should be **proposed, and ultimately approved, by an Outcome group.**
- An **Outcome Representative** will work with the **Indicators Team, Goal Team and Workgroup chairs**, and additional **subject-matter experts (SMEs)** to:
 1. Review the proposed Indicator and required documentation (Data File, Analysis & Methods document).
 2. Establish expectations for the update and reporting process.

Update Phase

- The **Outcome Representative** is responsible for **compiling information** for the Data File and A&M and **coordinating review** of those documents by SMEs **before submitting** to the **Indicators Coordinator**.
 1. Indicators Coordinator QA/QC checks the Data File and A&M.
 2. Indicator Coordinator loops in Web Team and Communications Team and schedules meeting to discuss translation of the content for ChesapeakeProgress.
- Indicators are published on a designated **Outcome page on ChesapeakeProgress.**

Interested in learning more?

Chesapeake Bay Program Indicators Page

- Indicators Framework
- Indicators Standard Operating Procedures (SOP)
- Data File template
- Analysis & Methods template

ChesapeakeData

- Contains archive of all Indicators and associated files used to support outcomes in the 2014 *Chesapeake Bay Watershed Agreement*.
- Use "Indicator" tag to filter search.

Reading

- Environmental Indicators (GAO-05-052, 2004)
- Decision Making for the Environment (National Research Council, 2005)
- CBP Indicator Assessment (Hershner et al. 2007)
- Adaptive Management “schools” (McFadden et al. 2010)
- An oral history of the Government Performance and Results Act (Kettl, 2023)



Photo by Will Parson/Chesapeake Bay Program with aerial support by Southwings.

Thank you!

Please reach out with any questions!

Katie Ayers, EPA | ayers.katie@epa.gov

Doug Bell, EPA | bell.douglas@epa.gov

Time for Q&A!

