

A photograph of three ducks swimming in a pond. The water is dark and rippled. A log is partially submerged on the left side. The ducks are dark-colored with yellow beaks. The text is overlaid in white.

New Outcome and Attainment Tracking System

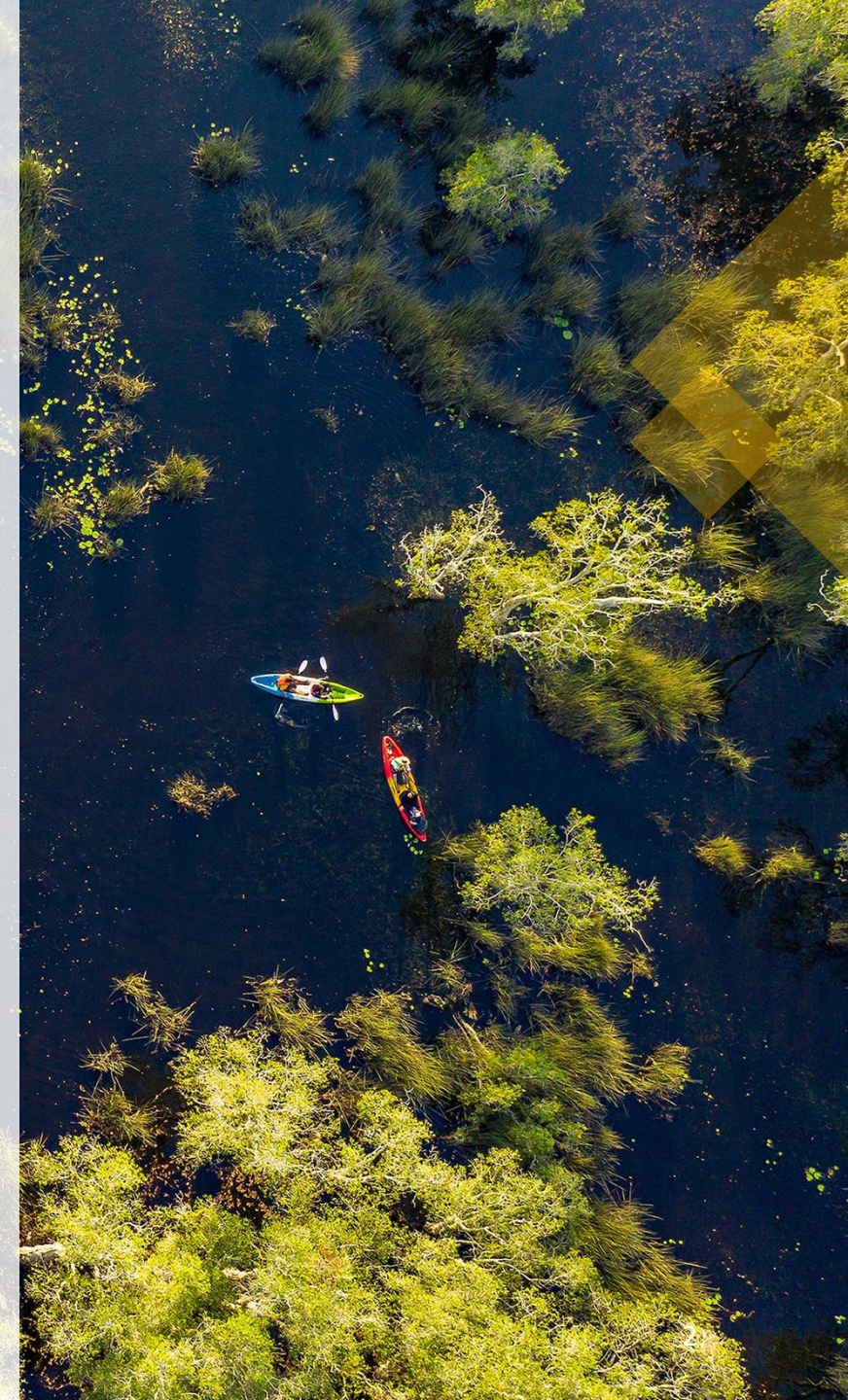
Habitat Goal Implementation Team

November 15, 2022

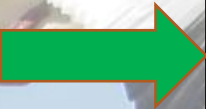
Olivia Devereux & Helen Golimowski, Devereux Consulting, Inc.

Habitat Tracker

- Project initiated in Fall 2021 after discussion with the Management Board
- Purpose: Develop a tracking tool to assess progress towards the 2014 Chesapeake Bay Agreement's Vital Habitats' goal for the Wetland and Black Duck Outcome
- Includes tidal and nontidal areas of the Chesapeake Bay watershed
- Projects that include preservation and creation of wetlands and habitat appropriate for black ducks in natural, urban, and agricultural areas.
- Data provided by direct communication with other entities, such as Ducks Unlimited and The Nature Conservancy, as well as states and federal partners
- Data include project level information and project goals; less of a focus on tracking CAST management practices, which are limited to water quality outcomes
- <https://habitat-tracker.net/>



2014
Chesapeake Bay
Agreement:
10 Goals
31 Outcomes



GOALS	OUTCOMES
Sustainable Fisheries Goal	Blue Crab Abundance Outcome
	Blue Crab Management Outcome
	Oyster Outcome
	Forage Fish Outcome
	Fish Habitat Outcome
Vital Habitats Goal	Wetlands Outcome
	Black Duck
	Stream Health Outcome
	Brook Trout
	Fish Passage Outcome
	Submerged Aquatic Vegetation (SAV) Outcome
	Forest Buffer Outcome
	Tree Canopy Outcome
Water Quality Goal	2017 Watershed Implementation Plans (WIP) Outcome
	2025 WIP Outcome
	Water Quality Standards Attainment and Monitoring Outcome
Toxic Contaminants Goal	Toxic Contaminants Research Outcome
	Toxic Contaminants Policy and Prevention Outcome
Healthy Watersheds Goal	Healthy Watersheds Outcome
Stewardship Goal	Citizen Stewardship Outcome
	Local Leadership Outcome
	Diversity Outcome
Land Conservation Goal	Protected Lands Outcome
	Land Use Methods and Metrics Development Outcome
	Land Use Options Evaluation Outcome
Public Access Goal	Public Access Site Development Outcome
Environmental Literacy Goal	Student Outcome
	Sustainable Schools Outcome
	Environmental Literacy Planning Outcome
Climate Resiliency Goal	Monitoring and Assessment Outcome
	Adaptation Outcome

Vital Habitats Goal

- **GOAL:** Restore, enhance and protect a network of land and water habitats to support fish and wildlife and to afford other public benefits, including water quality, recreational uses and scenic value across the watershed.
- **WETLANDS OUTCOME:** Continually increase the capacity of wetlands to provide water quality and habitat benefits throughout the watershed. **Create or reestablish 85,000 acres of tidal and non-tidal wetlands and enhance function of an additional 150,000 acres of degraded wetlands by 2025.** These activities may occur in any land use (including urban), but primarily occur in agricultural or natural landscapes.
- **BLACK DUCK OUTCOME:** Restore, enhance and preserve wetland habitats that **support a wintering population of 100,000 black ducks**, a species representative of the health of tidal marshes across the watershed. Refine population targets through 2025 based on best available science.

https://www.chesapeakebay.net/what/goals/vital_habitats

Workgroups and Action Teams +

Black Duck Action Team

Brook Trout Action Team

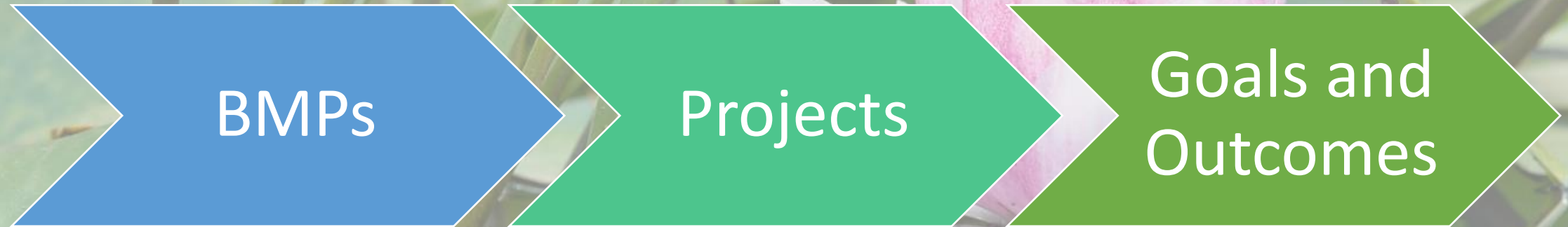
Fish Passage Workgroup

Stream Health Workgroup

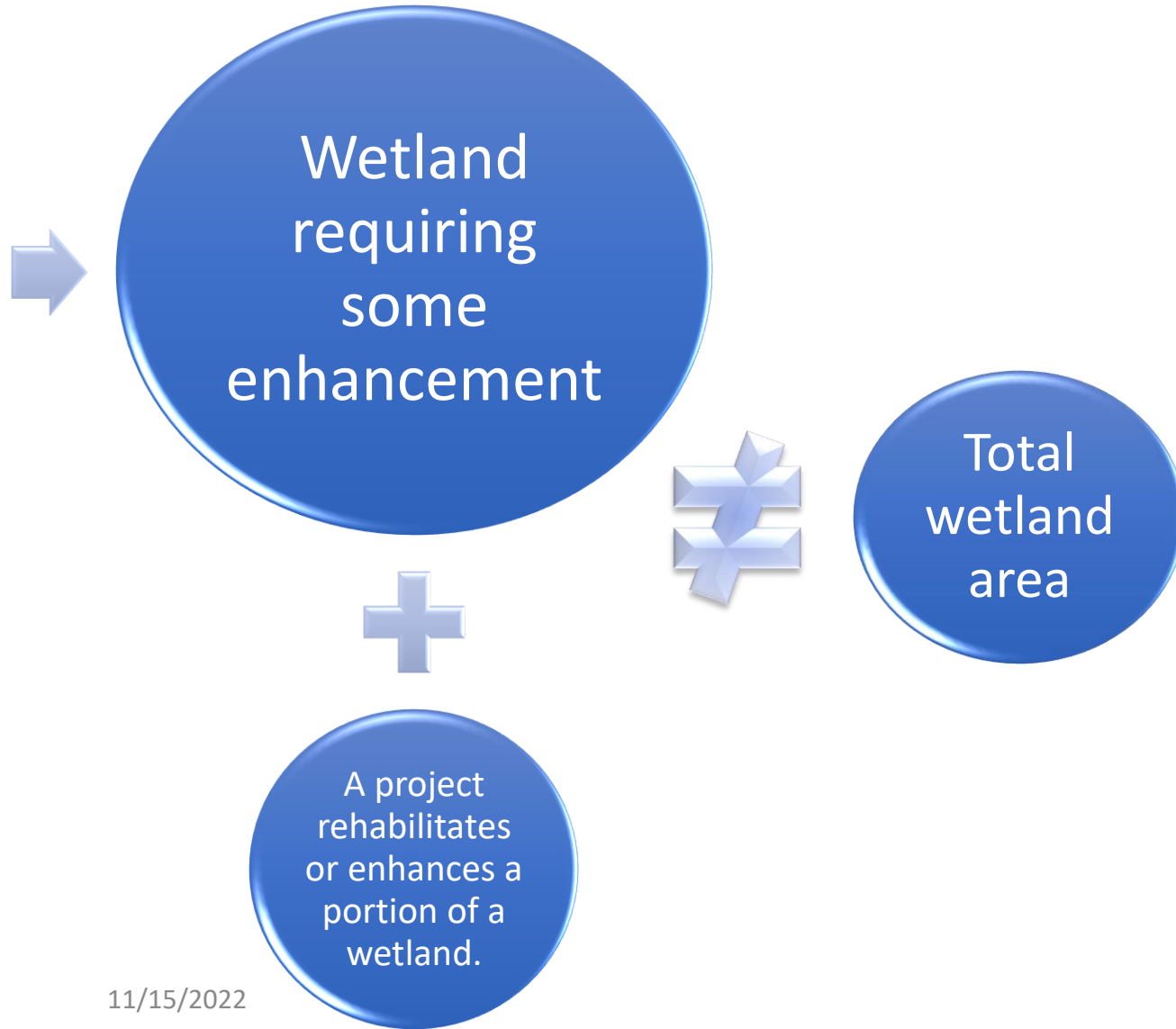
Submerged Aquatic Vegetation Workgroup

Wetland Workgroup

Paradigm Shift for Tracking Habitat Outcomes



Counting the Entire Wetland Area





Welcome

The Habitat Outcome and Attainment Tracking System is a means of collecting and managing the habitat improvement projects implemented in the Chesapeake Bay watershed. A central repository of data from multiple agencies and partners allows a streamlined approach to generate reports needed for ecosystem services tracking and assessments. The Tracking System also facilitates evaluating project implementation goals for trend and targeting analyses.

This Excel spreadsheet contains a template for reporting and tracking habitat projects. The template helps data submitters in the identification and regular reporting of projects that are expected to impact wetlands and black ducks. Reported projects are used to assess progress towards meeting the goals and outcomes established in the 2014 Chesapeake Bay Agreement.

Download the [Upload Template](#)

Please contact Helen Golimowski at helen@devereuxconsulting.com for assistance.

Habitat Tracker Conveniences

- Users upload tables in a standard format with both required and optional data fields.
- Users generate pre-defined reports of practice, programs (funders and voluntary), geography, years, and other parameters. Reports are available as downloadable Microsoft Excel files.
- Allows an upload of data from NEIEN by an administrative user once, annually for as long as NEIEN is used by the Water Quality team.
- Allows replacement of GIS data including physiographic region, Submerged Aquatic Vegetation (SAV), and tidal/nontidal areas to update all data attributes that rely on those data.

Questions that can be answered with Habitat Tracker Data and Reports

- How many acres of wetlands are newly created (trend over time)?
- How many acres of wetlands are in tidal areas near SAVs, and expected to support black ducks?
- How many acres of wetlands are in nontidal areas?
- How many projects include a plan for an environmental literacy component (examples: signage, programs)?
- What are the project funders?
- What are the acres of projects supporting Rare Threatened and Endangered (RTE) species, and which ones?
- What is the type, number, and extent of management practices implemented on wetlands?

- *The data can be parsed by year, state, and HUC-12.*

Partners for Supplying Habitat Data

- States
- Local governments
- Federal agencies including FWS, USDA, USFS
- Nongovernmental organizations
 - **Ducks Unlimited and The Nature Conservancy are providing test data**
- Others, to be identified
- Copying data in NEIEN
 - one data pull annually
- USGS/USDA ACEP program

This requires outreach and persistent effort!



Integrates with Many Chesapeake Bay Goals



Conclusions

- The Habitat Tracker will track progress toward achieving the Wetland and Black Duck Outcomes
- Input from subject matter experts will help refine the functionality of the Habitat Tracker
- Persistent effort is required to elicit data
- Ultimately, tracking can help incentivize wetland goals and show the impact of wetlands

Extra Slides

Data Submitted for Water Quality Goals

- Data submitted in the annual progress assessment for 2021
- These likely are not wetlands that are good habitat
 - Constructed wetland for septics
 - Urban wet ponds
- Accepting all others as new wetlands, which is not correct, then there are about 61,000 acres, or 45% of the goal, not considering tidal/nontidal.
- Wetland enhancement will not be credited in the next version of CAST

Submitted BMP	Sector	Unit	Amount
Wetland Restoration	Agriculture	acres	20,256
Wetland Creation	Agriculture	acres	1,516
Wetland Gains - Reestablished	Agriculture	acres	1,406
Wetland Gains - Established	Agriculture	acres	316
CREP Wetland Restoration	Agriculture	acres	25
Constructed Wetland Septic	Septic	systems	1
Wet Pond	Urban	acres	149,224
Wet Extended Detention	Urban	acres	42,969
Wet Ponds & Wetlands	Urban	acres	31,472
Constructed Wetland	Urban	acres	4,331
Wet Swale	Urban	acres	135
Wetland Rehabilitation	wetland	acres	1,489
Wetland Functional Gains - Enhanced	wetland	acres	502
Wetland Wildlife Habitat Management (not a credited practice)			1

Stream Restoration

- Stream Restoration projects are becoming more prevalent
- 1.4M feet of stream restoration plus those where the nutrient and sediment pounds are reported directly
- Wetlands are a part of some stream projects, but not reported separately
- Floodplain connectivity can be done in many ways, not necessarily by establishing wetlands and the habitat creation wetlands serves

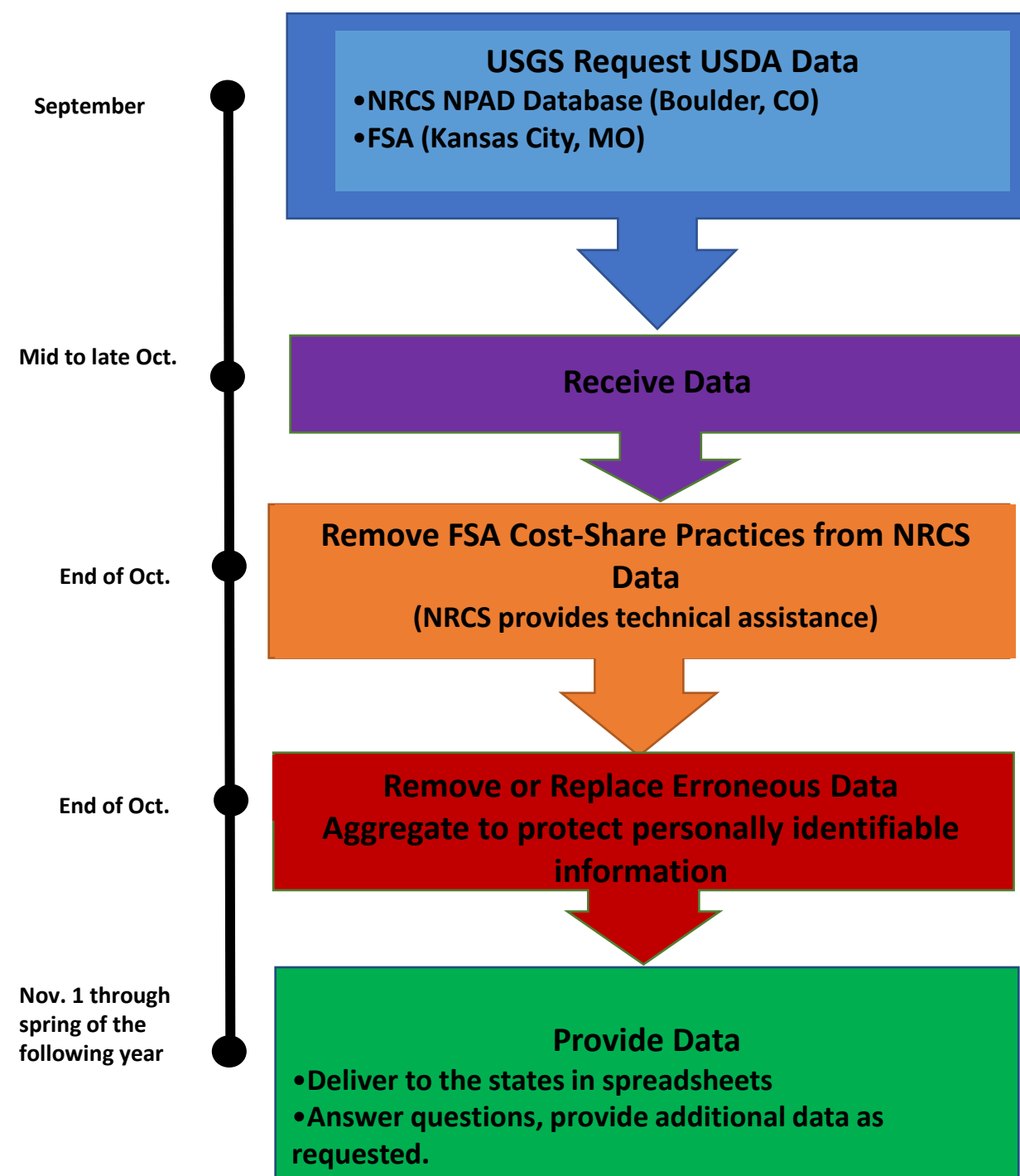
Submitted BMP	Unit	Amount
Channel Bed Stabilization	feet	10,459
Channel Stabilization	feet	8,254
Stream Channel Stabilization	feet	198,121
Stream Restoration	feet	893,198
Stream Restoration Urban	Protocol 1 TN	15,043
Stream Restoration Urban	Protocol 1 TP	6,882
Stream Restoration Urban	Protocol 1 TSS	5,858,565
Stream Restoration Urban	Protocol 2 TN	5,858
Stream Restoration Urban	protocol 3 TN	156
Stream Restoration Urban	protocol 3 TP	23
Stream Restoration Urban	protocol 3 TSS	65,496
Streambank and Shoreline Protection	feet	290,147
Streambank Restoration	feet	3,450
Streambank Stabilization	feet	41,056

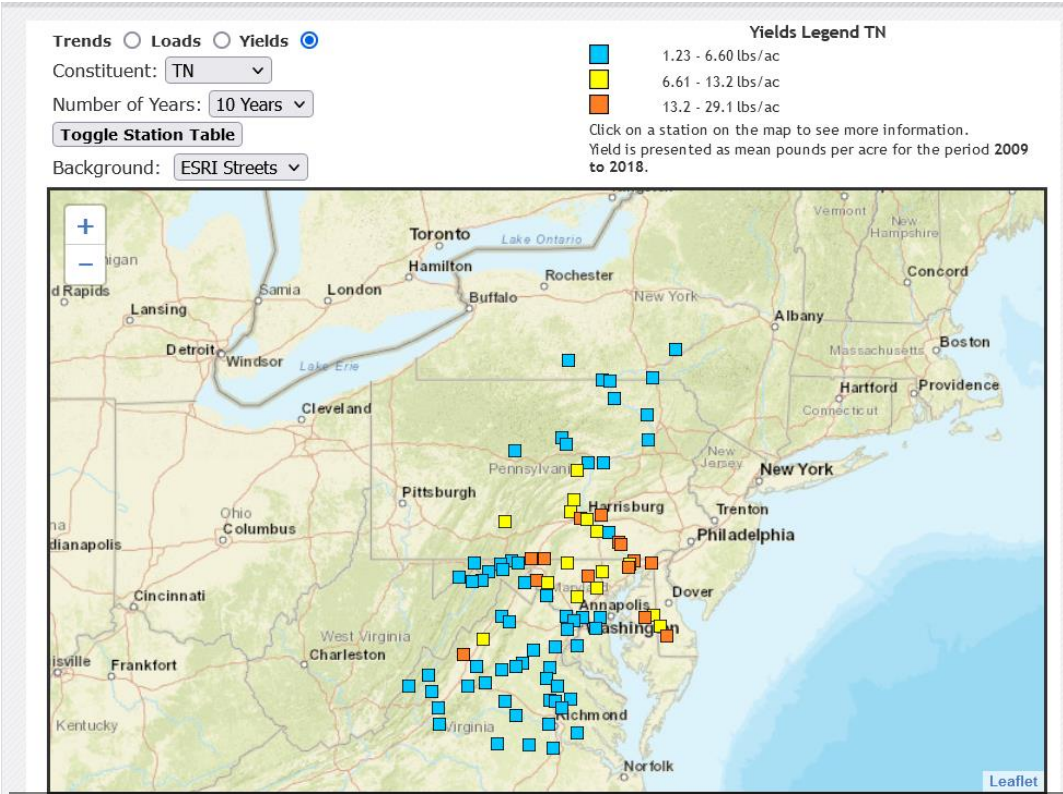
USDA: Potential Data Source

- **USGS** works with USDA to acquire practice data for conservation practices including Agricultural Conservation Easement Program (ACEP)
 - ACEP protects the agricultural viability and related conservation values of eligible land by limiting nonagricultural uses which negatively affect agricultural uses and conservation values, protect grazing uses and related conservation values by restoring or conserving eligible grazing land, and **protecting and restoring and enhancing wetlands on eligible land.**

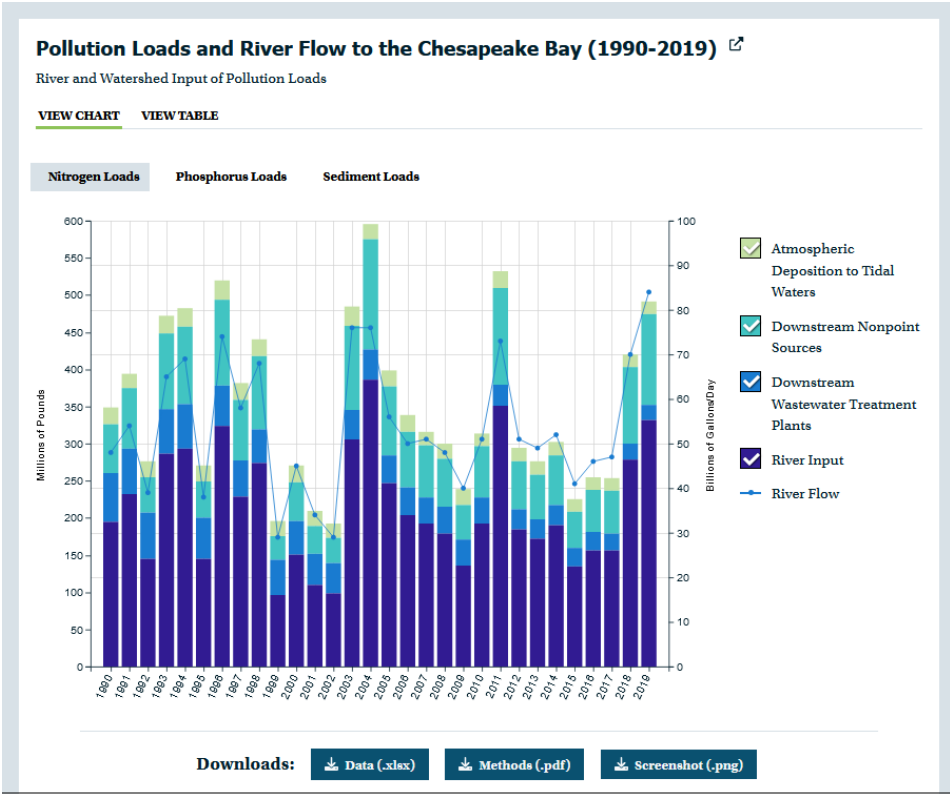
<https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/easements/acep/>

11/15/2022





<https://cbrim.er.usgs.gov/maps/index.html>



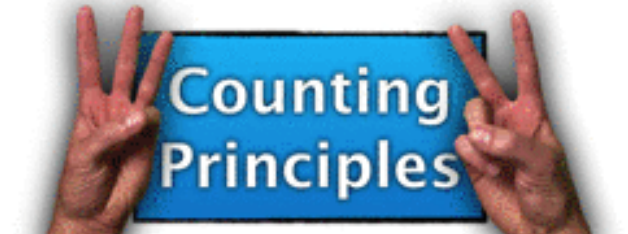
<https://www.chesapeakeprogress.com/clean-water/water-quality>

Duplication

- Minimizing duplication is important for data accuracy
- It is expected that for projects that have multiple partners, the lead agency will provide data.
- The tracking system will include the ability to report all project partners to help identify and reduce the duplication of records.

Conservation

Understanding that the count for a set group of objects stays the same no matter whether they are spread out or close together.



Data Upload Template

AutoSave Off Data Upload Olivia Devereux OD

File Home Insert Page Layout Formulas Data Review View Help ACROBAT Team

Clipboard: Paste, Copy, Format Painter

Font: Calibri, 11, Bold, Italic, Underline, Paragraph, Color, Text Color

Alignment: Wrap Text, Merge & Center

Number: General, Currency, Percentage, Decimals

Styles: Normal, Bad, Good, Neutral

Cells: Insert, Delete, Format

Editing: AutoSum, Fill, Clear, Sort & Filter, Find & Select

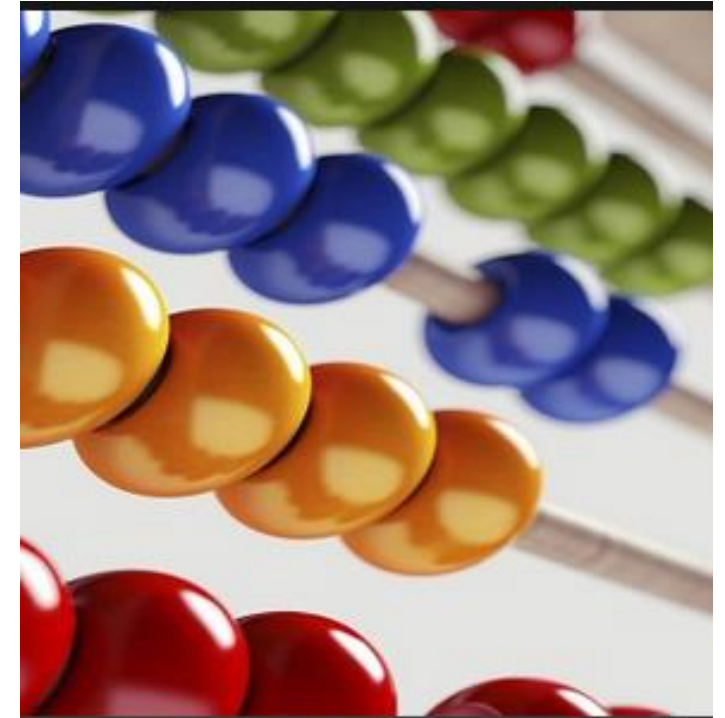
Analysis: Analyze Data, Sensitivity

Filter, Clear, Spelling

PRACTICE ID	BMP NAME	LAND USE	UNIT	PRACTICE AMOUNT	PROJECT NAME	DATE INSTALLED	DATE INSPECTED	INSPECTION STATUS	PROJECT FUNDERS	LATITUDE	LONGITUDE	WETLAND TYPE	PROJECT PUBLICLY ACCESSIBLE	RECREATION AREA	SPECIAL FLOOD HAZARD	FEMA FLOOD EXCEDANCE AMOUNT	PRESENCE OF RTE	PRESENCE OF BROOK TROUT	PRESENCE OF BLACK DUCK
1	Wetland Wildlife Habitat Management	ag	ac	5	wetland functional gains	2/25/2020			USFS	38.378291	-76.495682	Lotic	Yes	Yes		0.02	Yes	Yes	Yes
2	Constructed Wetland	ms4cssnonregulated	Acres Treated	19	Urban Skeeters	6/30/1999	6/1/2009	Passed	FWS	38.378291	-76.495682	Lentic	No	No	No		No	No	No
3	Constructed Wetland Elevated Mound	ag	acres	1	North Shore	7/2/2010	7/1/2020	Failed	Ducks Unlimited	38.378291	-76.495682	Lentic	No	No	No		No	No	No
5	Constructed Wetland Septic	septic	Systems	3	septicseceenhance	8/7/2015			private	38.378291	-76.495682		No	No	No				
6	Constructed Wetland Shallow Pressure	ms4cssnonregulated	acres treated	4		4/5/2016			USFS	38.378291	-76.495682		No	No	No				
7	CREP Wetland Restoration	ag	acres	5		8/31/2020			USDA	38.378291	-76.495682	Lotic	No	No	No				
8	Headwater CREP Wetland Restoration	ag	Acres	1.2		9/1/2020			USDA	38.378291	-76.495682	Lentic	Yes	No	No				
3	Headwater Wetland Creation	ag	Acres	1.6		3/2/2010	7/6/2020	Passed	USDA	38.378291	-76.495682	Lotic	No	No	No				
10	Headwater Wetland Gains - Established	ag	AC	0.6		3/3/2011	7/7/2021	Passed	USDA	38.378291	-76.495682	Lentic	No	No	No		Yes	Yes	
11	NRCS Easement Conservation Practices	ag	Non-Tidal Emergent Area	28	Bog Turtle Species Enhancement	9/4/2013			USDA	38.378291	-76.495682		No	No	No		No		Yes
12	Stream and shoreline restoration	shore	kilometers	2.4		6/5/2016			USDA	38.378291	-76.495682		No	No	No		No		Yes
13	Stream buffers	stream	miles	0.54		1/6/2021	7/10/2020	Passed	USDA	38.378291	-76.495682		No	No	No		No		Yes

Data Elements (Draft List)

- Geographic location as latitude and longitude
- Funders (multiple including “voluntary”, null is okay)
- Wetland type as lotic or lentic
- Practice name
- Practice amount
- Practice unit
- Land use type
- Date implemented
- Date inspected
- Inspection status
- Project publicly accessible (yes or no)
- Project creates a recreation area (yes or no)
- Project meet FEMA Special Flood Hazard Area guidelines (yes or no)
 - If yes, Flood Exceedance probability (numerical, e.g.: 0.1 0.02)
- Presence of Rare, Threatened, Endangered species (yes or no)
- Increased presence of brook trout as a result of project (yes or no)
- Increased presence of black duck as a result of project (yes or no)





11/15/2022

Geographic Location Attributes

Assign attributes using the reported latitude and longitude and GIS layers

- Does not require judgement on the part of the reporter
- Leads to greater consistency in data
- Allows for reanalysis of data based on changing knowledge of locational characteristics
- State
- HUC-12 Watershed Boundary
- Subaquatic vegetation (SAV) proximity in units of miles
 - The Virginia Institute of Marine Science (VIMS) SAV geographic layer will be used to assign proximity to this black duck food source.
- Tidal or nontidal
 - A look-up service will be developed using the tidal/nontidal boundary used in the development of the Habitat Vulnerability Assessment for Wintering Black Ducks USGS online tool

