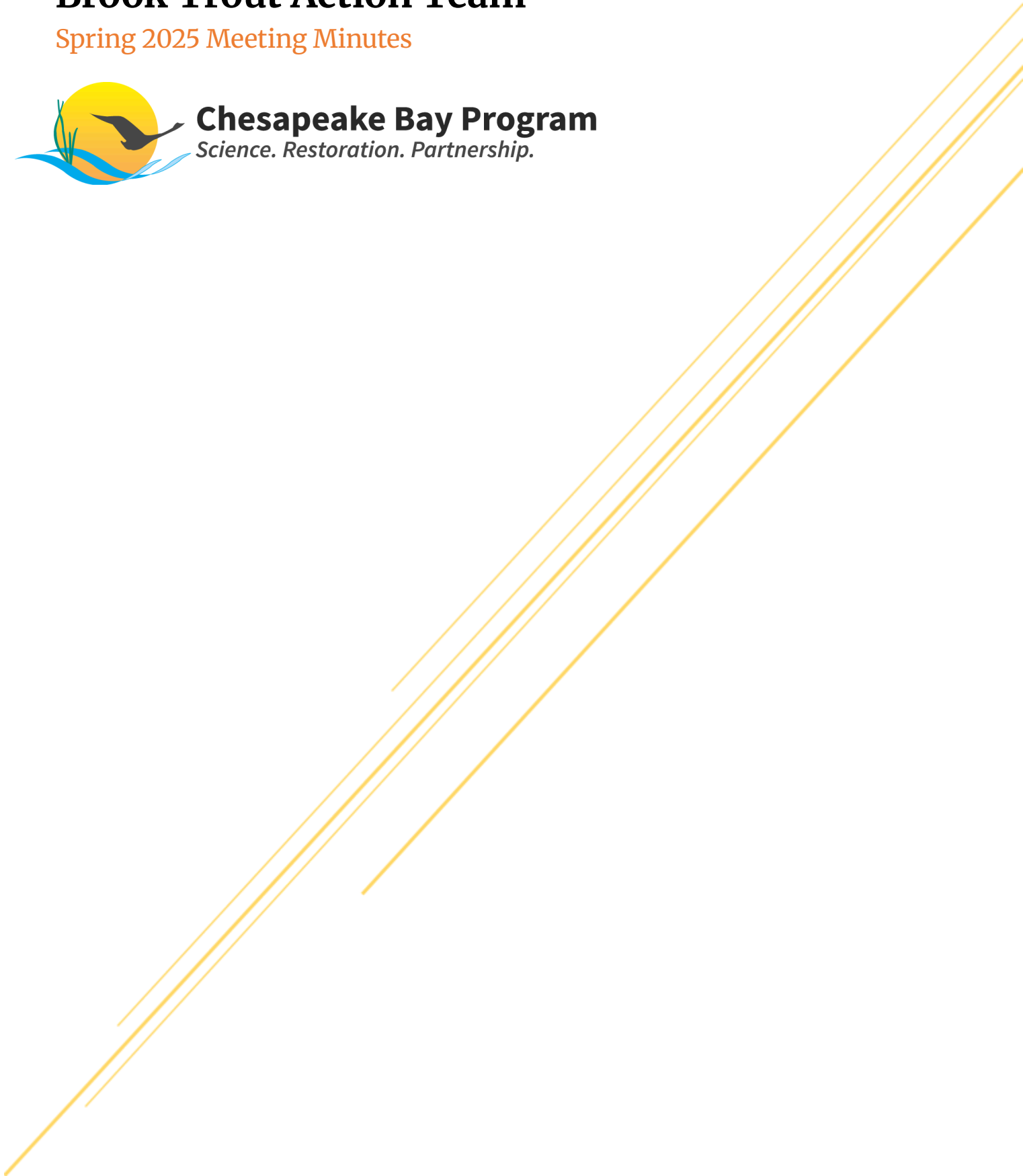


Brook Trout Action Team

Spring 2025 Meeting Minutes



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BROOK TROUT WORKGROUP SPRING 2025 MEETING

Wednesday, May 21st, 2024, from 9:00 am - 12:00 pm ET

[Link to Meeting Details](#)

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Actions and Decisions from the Meeting:

Action #1: Determine feasibility of an in-person meeting for Fall 2025.

- Consider travel restrictions for federal partners as well as some of the venue suggestions given in the meeting.
- Reach out to state partners for potential venues as well as the possibility to highlight some of their work via field trips.
- Consider wood addition site visits and projects reducing nutrient and sediment to engage other water quality partners.

Action #2: Set up a follow up meeting with New York and the Brook Trout Workgroup Chairs to further discuss long term monitoring.

Action #3: Brook Trout Action Team Leadership will coordinate with Lori Maloney and Matt Mayfield to understand whether the “Number Projects/miles/acres (GIT Report)” column relates to the whole Bay or if it is more specific to head water or brook trout areas. This will help determine whether it is appropriate to apply the ratio of 13.7% to the column to estimate amount of number of projects/miles/acres that should be done in brook trout habitat.

Action #4: With insights from Action #3 refine the proposal for how the workgroup will fill in the XX% of our resiliency outcome.

Action #5: Consider EBTJV’s role as a potential coordinator of a multi-state initiative to define a sampling strategy for monitoring/defining sympatric zones for brook trout and other species.



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9:00 – WELCOME, ROLL CALL, & INTRODUCTIONS (10 minutes)

Presenters: Workgroup Co-Chairs Katie Ombalski (Woods and Waters Consulting) and Dan Goetz (MD DNR)

Attendance:

- | | | |
|--|--|--|
| • Helen Golimowski
Consulting/CBPO
contractor | • Emily Young ICPRB | • Sara Weglien MD DNR,
Stream Health Workgroup
Co-chair |
| • Matt Lawrence MD DNR | • Jenifer Christman
Western PA Conservancy | • Karli Rogers USGS, Fish
Biologist |
| • Matt Mayfield Trout
Unlimited | • Kyle Glenn TU (NY) | • Keith Bolt EPA |
| • Dustin Wichterman
Associate Director-Trout
Unlimited-WV, MD, VA | • Allison Lutz TU (PA) | • Dan Goetz MD DNR |
| • Brad Fink VA Dept.
Wildlife Resources | • David Thorne West
Virginia DNR | • Katie Ombalski Woods
and Waters Consulting |
| • Jacob Fetterman TU (NY) | • Lori Maloney EBTJV | • Peter Tango USGS |
| | • Guido Yactayo MDE | |
| | • Jason Detar PA FBC | |
| | • Chris Guy HGIT
Coordinator | |

9:10 – UPDATES AND ANNOUNCEMENTS (10 minutes)

Presenters: Katie Ombalski, Dan Goetz

- **HABITAT GIT SPRING MEETING:** The Habitat Goal Implementation Team Spring Meeting was on April 29th, 2025. This was a virtual meeting with the main discussion about improving collaboration and effectiveness within our GIT.
 - [LINK TO MEETING INFORMATION & MATERIALS](#)
- **STAC Workshop**
 - Pennsylvania: Lakeview Lodge in DuBois, PA (Clearfield County) on May 29th
 - [In-person RSVP](#) by: **May 22**
 - Maryland: McDaniel College in Westminster, MD (Carroll County) on June 3rd
 - [In-person RSVP](#) by: **May 27**
 - Q&A
- **Upcoming Meetings:**
 - Fall Brook Trout Meeting: November 19, 2025

Undecided if this will be a in-person, hybrid, online

TBD travel restrictions for members of the workgroup

Some suggestions for Annapolis, Leetown USGS Science Center, and Shenandoah Valley



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Lori Maloney: Would it be possible to see some wood addition sites? Perhaps it could be an opportunity to bring other audiences, such as water quality agencies, out to see the nutrient and sediment reduction benefits of wood additions.

9:20 – HABITAT TRACKER UPDATE (20 minutes)

Presenter: Helen Golimowski

See [Appendix I](#) for slides

[GIT-funded project](#) compiled available data on brook trout projects.

[Habitat Tracker Website Link](#)

Upload Template button can be used to download the template to report data to habitat tracker

- primary fields : unique project id, construction end date, and project type, and location (LAT/LONG, HUC12, or county)
- First sheet within the template has instructions

Helen's Contact is on the home page and is available to submit projects to, or answer any questions.

Report types that can be generated:

- Project Template By Geography
- Environmental Literacy Report
- FEMA Flood Hazard Acres
- Project Funders
- RTE Species Report
- Project Acres
- BMP Summary

After choosing a report type you can choose what scale you want the report to summarize by (State, County, HUC6, or HUC12)

Types of graphs that can be synthesized based on the outputted reports (See [Appendix I](#) for graphs)

- Progress of Brook Trout Project Implementation by Type (cumulative by Year)
- Cumulative Upstream Miles Opened Over Time

Context for this: When we started the git funded project we did it because we had no way to track progress. The Habitat Tracker is the culmination of all the data that was aggregated by that project.

9:40 – NEW OUTCOME TARGET METRIC DISCUSSION (1 hour 35 minutes)

Presenters: Katie Ombalski, Dan Goetz



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Protect and enhance brook trout within the Chesapeake Bay watershed by increasing occupancy, abundance and resilience to changing environmental conditions.

- By 2035, increase brook trout occupancy by 1% in watersheds supporting healthy populations while achieving no net loss in other watersheds.
- By 2035, increase abundance at 10 long-term monitoring sites.

Q: What does each state have in terms of long-term monitoring sites?

MD – Matt Lawrence or Jason Cessna

- *Has an annual survey network with 51 stations starting in 2023, a lot of these stations have historical data. Only 4 have less than 5 years. many have 20+years*
- *Each sight has brook trout population data, fish community data, temperature, and habitat metrics.*
- *Network is diverse, not only in strongholds, some in at-risk populations*
- *Monitor at risk populations that are being stressed by stressors such as development and impervious surfaces, AMD, ag practices, non-native trout populations.*
- *~14 stronghold sites ~35 sites are going to be other types of sites*
- *Protocol:*
 - *Site lengths : 2-3 pass depletion*
 - *Station length: ~100 meters*

PA – Jason Detar

- *several monitoring sites where there are large wood additions and future large wood*
- *monitor these sites every other year*
- *relative abundance of brook trout, species data, habitat data, water quality data*
- *flexible and willing to add more sites*

VA – Brad Fink

- *2014 we standardizing sampling protocol on 32 streams*
- *1 pass sampling annually*
- *19 in chesapeake bay drainage*
 - *12 of these sites we do three pass every other year*
- *had data from 1970s*
- *also sample temperature data since 2011 for a lot of these streams*
- *most trout streams fall in national forests, some in the west that are on private land*
- *random sampling*



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- *at risk populations have at least 5-6 sample points since the 70s*
- *most sample locations are strong hold populations*
- *fulfilling this outcome goal would not be an issue for VA*
- *Protocol:*
 - *1 pass on 19 streams*
 - *100-200 meters*
 - *3 pass: every other year on 12 streams, 100-200 meters depending on sites*
 - *go to 100 then go to the next barrier*

WV – David Thorn

- *WV DNR does not have an active monitoring plan as of yet, but Dave has been trying to get something together state wide over the past few years*
- *Kyle Hartman's (WVU) lab has over 20 years of chesapeake bay drainage, water quality, three pass, habitat, temperature*
 - *mostly robust resilient populations*
 - *concern: sampling in the fall, due to original questions being around spawning.*
- *National forests have a monitoring program from the forest service.*
 - *These populations are not as robust as Hartman's sampled populations.*
- *would like to see more monitoring on not as robust populations in warmer water systems.*
- *TU has a lot of monitoring sites in WV*
- *Lacking consistent data particularly in north branch, in AMD impacted areas*
- *Protocol:*
 - *Hartman's methodology: 1 km study reach within that km they do 3 100 meter reaches.(lower,middle,upper) 3 pass within that 100 meter reach.*
 - *~25 sites across the state range. There are about 6 in the chesapeake drainage, in the north fork and south fork drainage.*

NY – Fred Henson, Kyle Glen

- *No long term monitoring sites.*
- *NY DEC, and Fish and Wildlife looking to add sites.*
- *Willing to add 2 monitoring sites in the chesapeake drainage.*

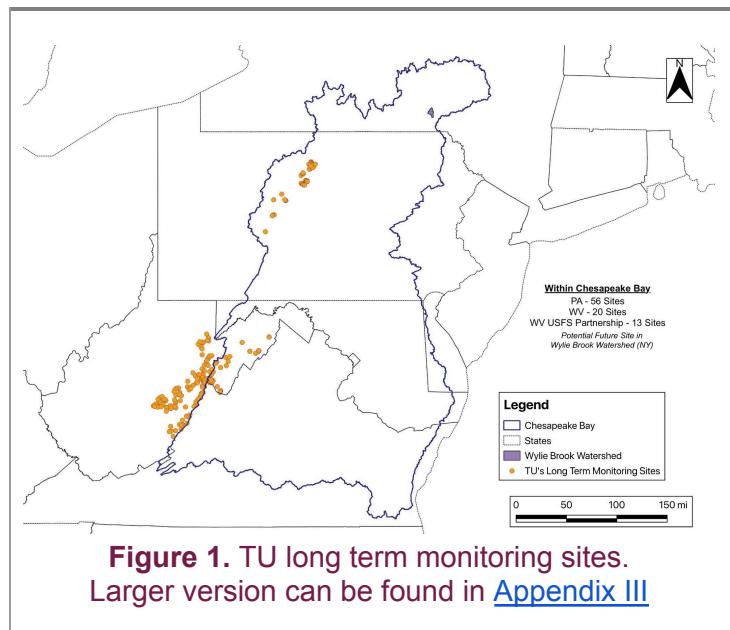


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- *TU does not have electrofishing permits, so we are leaning on the state.*
- *Universities can hold permits*
- *Need to schedule a follow-up call with Fred and Kyle*
- *Protocol:*
 - *Generally triple pass deletion.*
 - *100 meters is what we have done in other surveys across other regions within the state.*

Q: Does Trout Unlimited have long term monitoring sites? – Dustin Wichterman, Allison Lutz



- *Allison: Within PA's bay drainage, 56 sites where we monitor BT. some red survey data only, biomass recovery from AMD sites, sample fishery with triple pass, 100 meter sites, and collecting other fish species data, macroinvertebrate and water quality.*
 - *monitor wood addition sites as well with triple pass and habitat metrics*
- *Dustin: WV about 51 long term sites within the bay drainage, about 186 across WV. DEP has some great datasets since 2013 or even longer with annual data. TU has 20 long term sites since ~2013, resilient and at risk with varying types of restoration with control sites outside of restoration.*



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- *About 13 sites we sample with the forest service, TU hired crew that is on a 3-5 year basis.*
 - *100 meter site and rigorous for habitat work*
- *Most TU is annual basis*
 - *Not as standardized, some sites are triple some, are single, some are the whole project length.*
- *Student on track to graduate next May, preliminary case studies will be available for some partners potentially in this summer.*

→ *Dan Goetz: Does everyone record numbers and weight?*

- ◆ *WV is a mix*
- ◆ *Usually a yes of PA-TU*
- ◆ *Will be a yes for NY, they have the capacity.*
- ◆ *Yes for everyone else*

10:15 – BREAK (15 minutes)

- By 2035, reduce identified threats by XX% to increase brook trout resilience in watersheds supporting healthy populations.

Draft example approach for resiliency targets:

Type	Number Projects/miles/acres (GIT Report)	10 Year Adjustment	Percent in BKT Patches (13.67)
AMD	5	7	7
AOP (miles opened)	232	331	45
Brook Trout Reintroduction	3	4	1
Dirt Gravel Roads (miles)	730	1043	143
Instream Habitat Enhancement (miles)	78	111	15
Land Protection	13881	19830	2711
Riparian Restoration (acres)	3421	4887	668
Other	222	317	43

Within the resiliency outcome there will be a series of outputs. These outputs (example types above) are measures to mitigate a specified threat to sustained brook trout populations. These can be tracked by number of projects, number of acres, or miles that are addressed in each project type.



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Dan's proposed methodology for filling in the XX%:

For each threat type above whether measured in miles, project number, acres etc. the workgroup will agree to a 10 year goal and an annual goal.

To fill in the XX%:

- numerator: target number decided by the workgroup
- denominator: total of all threats (AMD, barriers, dirt and gravel roads)

How do we get these numbers:

- Taking data from the recently completed [GIT-Funded Report](#) we can get the number of projects/miles/acres from each type of project completed within the watershed.
- Applying a ratio of

$$13.7\% = \text{Percent bay strong \& persistent} = \frac{(\text{Brook trout acres Persistent and stronghold})}{(\text{Total area bay watershed}) \text{ in acres}}$$

to each project type, we can get an approximation of the appropriate target for each output of resiliency outcome:

Brook trout acres Persistent and stronghold	5,600,000
Total area bay watershed	40,960,000
Percent bay strong/persistent	0.137
Chesapeake Bay Annual Progress 2017-2023	23,548
10 Year Goal	4608.68
Annual Goal	500 Acres/year

Figure 2. Calculation of 13.7% where "Total area bay watershed" is in acres and the "Brook trout acres Persistent and stronghold" is informed by the [Trout Unlimited Eastern Brook Trout Conservation Portfolio](#). See Note II below for explanation of "Chesapeake Bay Annual Progress 2017-2023".

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Figure 3. Applying 13.7 % to each 10 year adjusted "Number of projects/miles/acres", we are left with the amount of projects/miles/acres that should be strived for by 2035 to keep current momentum of brook trout threat mitigation.

Note I: An assumption was made that all AMD projects were being done in brook trout strong/persistent patches, so the 13.7% was not applied to this output type. Additionally, brook



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trout reintroduction should not have 13.7% applied so the “percent in BKT Patches (13.67)” column should read “4” instead of “1”

Note II: 668 “Riparian Restoration (acres)” seemed low and instead of using data from the GIT-Funded Report, there was a suggestion to use Chesapeake Bay Annual Progress 2017-2023, which showed 23,548 riparian buffer acres planted within the Bay Watershed. Applying 13.7% to this number and extrapolating for a 10 year goal you get 4608.68 acres. Dividing by 10 you conclude at an annual goal of 500 Acres/year. This number seems more reasonable than a 60 acre/year restoration goal for riparian plantings which was informed by the GIT-funded report’s data.

- Lori Maloney:

15 seems low for instream habitat enhancement.

- Dan Goetz:

Note that the GIT report did specifically mention the amount of projects that were done in brook trout waters, but they were in the single digits. So the idea of using the 13.7% ratio is because we should be prioritizing work to be done in areas that will have the highest effect on brook trout populations.

- Lori Maloney:

A consideration for that methodology is that the GIT funded report did attempt to get projects that were done with an eye on brook trout. However, not all the partners sent us projects that were only in brook trout areas because it would be a heavy lift for them to parse the data.

We were able to filter those instances down more and other partners were able to send us projects that they believed were more targeted towards headwaters. Therefore, I wouldn’t say that the GIT-funded report’s dataset is at all representative of the entirety of the Chesapeake Bay watershed because we were trying to get headwater projects and I think 13.7% may be too low of a ratio to apply.

- Nick Staten:

Not sure if I am misunderstanding, but how is the list of outputs informing the resiliency outcome’s XX% that we need to fill in?

- Dan Goetz:

The number in the third column would be the total and then that would be



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divided by the total number of potential projects of acreage that's out there.

- Nick Staten:

So we would sum the whole column?

- Dan Goetz:

We would either break it down by a total miles or a number of projects because there is a mean acres planted each project or a mean stream distance for each project reported.

- Dan Goetz:

As for next steps we need confirmation from Matt Mayfield and/or Lori Maloney on how the first column of numbers relates to the whole Bay or if it is more specific to head water or brook trout areas.

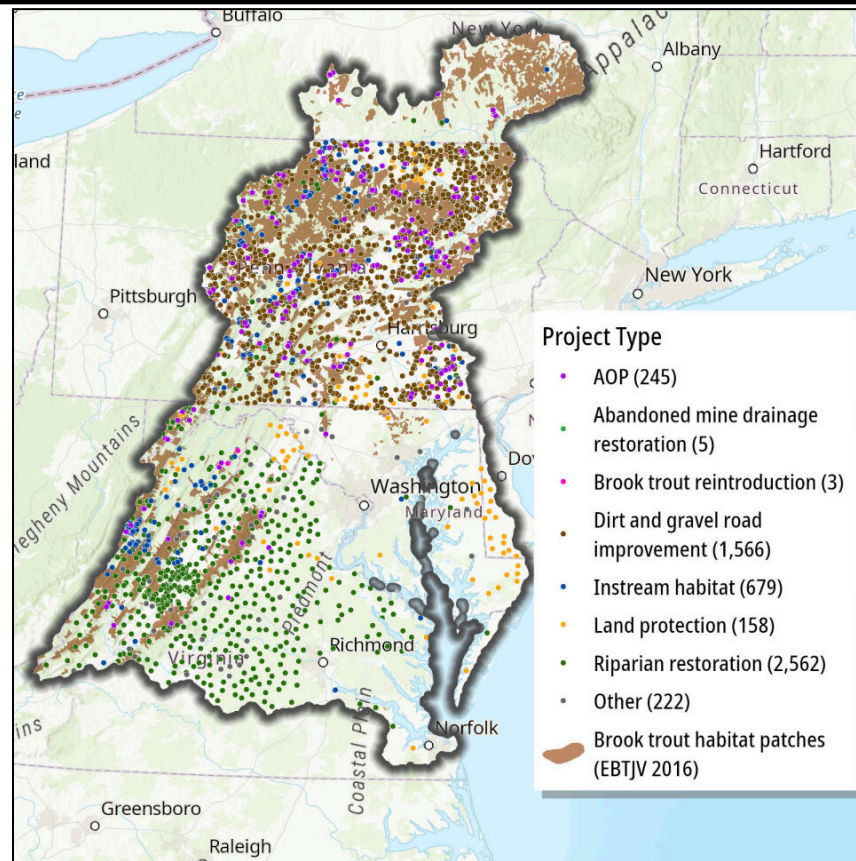
- Matt Mayfield:

Here's a look at the distribution of our projects against BKT patches for reference:



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- Lori Maloney: I would suggest we take a look at this by going through each threat and giving states time to consider what they would offer for their area or what their state TU chapter could offer. They could put their organization's 10 year projection under each of those restoration activities.
- Dan Goetz:

Katie and I will go back and work with Lori and Matt to refine these numbers, as work with those we are convening with next week at our STAC workshop, and send out a refined proposal once we have a better understanding of the data and projections.

11:15 – MEMBER UPDATES (35 minutes)

Presenters: multiple

MD - Matt Lawrence (5 minutes)

- 140 temp loggers this year
- Surveying starts in June



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- in addition to the 51 sites for the brook trout network, were looking at 112 bt surveys, 73 of which are deletion, and 39 are single pass surveys.
- Continue to reintroduce brook trout. 3 projects in progress which started last fall. Monitoring this year to see if reintroduction was successful.
- 8 total streams, considering more projects.
- Later this year we are starting bt propagation project
 - Modeling the work from WV
 - Building isolated hatchery for raising bt
 - Pilot effort this year
 - Long term looking at piedmont areas for targeted streams
- Non-native trout removal project started for the upper savage river (brown trout). This is our best of the best brook trout stronghold. Not a huge problem but we are concerned that as the temperatures warm we will see increased competition between the two species. Will be moving the brown trout to another system.
- Several habitat projects that we are collaborating on, but a lot of infrastructure damage from recent flooding
- Moving into brook trout genomics project. Collecting data for micro satellites to start moving into genetic sequencing.

PA - Jason Detar (5 minutes)

- Dry Spring from March and April. Fully turned around so far in May with 6-7 inch of rain over the past few week.
- Sampling should start in June.
- Large wood projects this winter especially in the northern tier of the state.
- Habitat crews are out getting started on their projects. More recently been doing some plantings in priority watersheds as well.

VA - Brad Fink (5 minutes)

- Mid June starts our sampling season.
- Reintroduction initiative starting this summer with actual reintroductions in winter.
- Uncertainty with how the droughts we have been seeing are affecting brook trout.
- Trying to collect data to make it more clear how major flooding events are affecting the brook trout populations.
- Attempting to knock back rainbow trout populations with a collaboration with people in North Carolina and the Smoky Mountains.

WV - David Thorne (5 minutes)

- Low numbers last year due to drought.
- Difficulty finding adequate numbers of field spawning fish.



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-
- Added fingerlings into streams from stock that have been held in a facility for the past few years.
 - Large rain events did not affect the spawning populations.
 - Concerns of Rainbow Trout moving further upstream in the Seneca Creek fishery which is one of the best West Virginia Brook Trout populations.

NY - Kyle Glenn (5 minutes)

- We're tied very closely to DC with our monitoring strategy for this year. We have over 75 temperature loggers that we're going to be putting out in four of the major upper Susquehanna tributaries.
- These are tributaries that hold large riverine populations of brook trout that utilize all of their sub tributaries as well so they're kind of prioritized.
- Habitat monitoring and triple pass deletion electrofishing efforts with the state to potentially change stream classification to reduce stocked brown trout.
- 2024 we are in the wiley brook watershed doing fisheries assessments and habitat work, and we've identified a few priority strategic wood addition sites which would be the first of its kind in New York State forest land. Implementing on those.
- Moris Brook watershed looking at a dam removal and supporting monitoring efforts there.
- Implementing thermal drone flyovers to quantify cool water patches within these tributaries to give a cold water patch resiliency score.
- Using drones more intensively.
- Drones used mostly in winter to have the most contrast.

Trout Unlimited - Allison Lutz (5 minutes)

- Haven't started sampling yet
- Continuing large wood addition monitoring - pre and post project implementation.
- Unassessed waters initiative work to identify unknown populations in virginia
- AMD monitoring work is continuing as well

Eastern Brook Trout Joint Venture - Lori Maloney (5 minutes)

Vermont Fish and Wildlife initiated a conversation with some other EBTJV biologists about how to best monitor and track the line of sympatry for brook trout. They are not necessarily seeing shifts in this line yet in VT, but are aware that other states have observed that this transition zone has moved higher in some watersheds over time.

They are seeking input on a sampling protocol to be prepared to detect these changes if and when they do happen over the next 10 years. If others are also interested in developing a strategy or funding increased sampling, we could discuss applying for funding through a Multi-State Conservation Grant.



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USGS has been put in the crosshairs of the most recent threats to federal funding and staffing. We have already seen losses to other agencies. USGS has been a crucial partner and without them this workgroup probably would not be where it is today. USGS is collecting letters of support about the various ways USGS staff and research have helped support ecosystem and fish and wildlife management.

11:50 – FINAL REMARKS (10 minutes)

- The Fall meeting will be mostly covering the STAC workshop, but other ideas include:
 - Woody Debris - Jason Detar , WPC, and/or TU could potentially give a presentation on what is happening in PA.
 - AMD/other Toxins - Joint Session with Fish Passage and Water Quality

12:00 – MEETING ADJOURNED



Appendix I: Habitat Tracker Presentation Slides

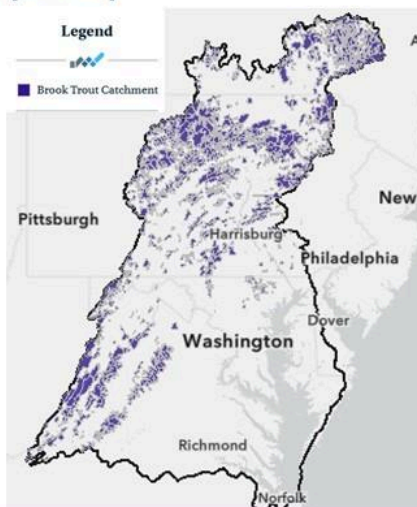


May 21, 2025

Habitat Tracker Update

Brook Trout Workgroup

Brook Trout Catchments in the Chesapeake Bay Watershed (2015)



Tracking Progress Toward Brook Trout Outcome

Goal: Restore and sustain naturally reproducing brook trout populations in headwater streams, with a target of an **8% increase in occupied habitat by 2025.**

- **Update:** No progress toward the Brook Trout outcome have been reported since 2015 when there was a special project to collect project data and identify priority locations
- **2019 Logic & Action Plan:** Established a streamlined reporting process for Chesapeake Bay Program partners to track restoration efforts and habitat improvements

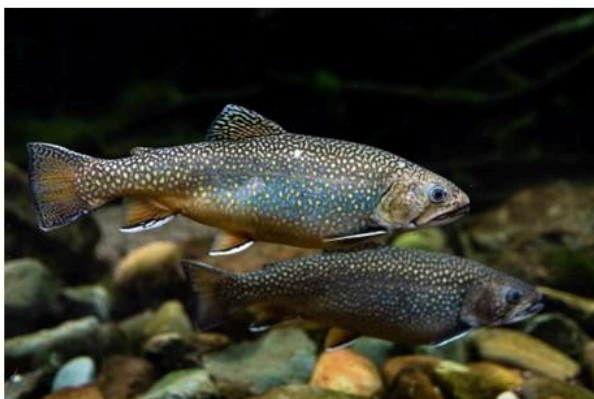
Map Source: Chesapeake Progress – Brook Trout Catchments (2015)



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Purpose of the Habitat Tracker



- **Support Functional Assessment**
Collect data to evaluate the functional benefit of wetlands and habitat conditions for indicator species across the Chesapeake Bay watershed.
- **Track Progress on Restoration Goals**
Develop a tracking tool to monitor progress toward the **2014 Chesapeake Bay Agreement's Vital Habitats Goal**, specifically for the **Wetland, Black Duck, and Brook Trout Outcomes**.
- **Project Scope**
Includes projects affecting **habitat for indicator species**
- **Data Sources**
Information is gathered through direct collaboration with:
 - Ducks Unlimited
 - The Nature Conservancy
 - Trout Unlimited
 - Chesapeake Bay Watershed jurisdictions
 - Federal Partners

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
	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
Toxic Contaminants Goal	Water Quality Standards Attainment and Monitoring Outcome
	Toxic Contaminants Research Outcome
Healthy Watersheds Goal	Toxic Contaminants Policy and Prevention Outcome
	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
	Student Outcome
Environmental Literacy Goal	Sustainable Schools Outcome
	Environmental Literacy Planning Outcome
	Monitoring and Assessment Outcome
Climate Resiliency Goal	Adaptation Outcome

Habitat Tracker

A data management system designed to **collect, organize, and track data** related to the habitat goals and outcomes in the Chesapeake Bay Watershed.

- Supports progress tracking for the **Wetland, Black Duck, and Brook Trout Outcomes**
- Aggregates data to visualize and communicate progress toward **Vital Habitats Goals**



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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.

Looking for SAV reports? Click [here](#).

Additional Resources

The USGS, in partnership with the William Penn Foundation and the Smithsonian Institute, quantified the capacity of floodplains surrounding wadable non-tidal streams and small rivers in the Chesapeake Bay and Delaware River watersheds to retain sediment (and associated nutrients) and flood waters and estimated the monetary value of those two services. Results from this study indicate that floodplains provide substantial benefits by trapping sediments and nutrients, with a net annual benefit of at least 100 million USD in the Chesapeake Bay Watershed. The data and publications are available on the [USGS website](#). The [Floodplain Ecosystem Service Mapper](#) displays floodplain extent, stream channel metrics, and field site data.

The [SHORE.BET Marsh Restoration Community Benefit Calculator](#) calculates the economic value of select key coastal community benefits to be gained by using living shoreline techniques that restore marshes. This tool helps to account for these ecosystem services so that coastal communities can be better informed when making decisions impacting their environment, economy, and overall quality of life.*

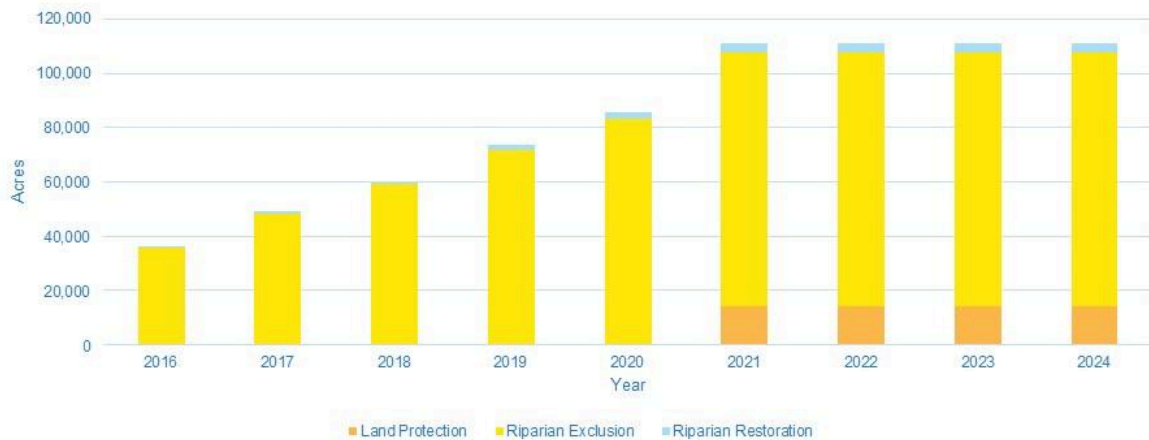
BMP Summary Report

Geography	Year Installed	BMP Type	Land Use	Amount	Unit	Recent Inspection Year	NEIEN Credit Duration	Expiration Year	Number Of Projects
PA	2007	Not Specified		.000				10/2017	1
PA	2015	Instream Habitat		.000	feet			10/2025	1
PA	2016	Instream Habitat		13855.000	feet			10/2026	5
PA	2016	Livestock Exclusion Fencing Not		.000				10/2026	2
PA	2016	Not Specified		.000				10/2026	17
PA	2016	Riparian Restoration		6.700	acres			10/2026	3
PA	2016	Upstream Miles Opened		10.170	miles			10/2026	2
VA	2016	Instream Habitat		450.000	feet			10/2026	1
VA	2016	Livestock Exclusion Fencing Present		.000				10/2026	21
VA	2016	Not Specified		.000				10/2026	14
VA	2016	Riparian Exclusion		14826.418	acres			10/2026	294
VA	2016	Riparian Restoration		282.160	acres			10/2026	40
MD	2017	Livestock Exclusion Fencing Present		.000				10/2027	1
MD	2017	Not Specified		.000				10/2027	4
MD	2017	Upstream Miles Opened		2.000	miles			10/2027	2
PA	2017	Instream Habitat		19756.730	feet			10/2027	18
PA	2017	Livestock Exclusion Fencing Not		.000				10/2027	5
PA	2017	Livestock Exclusion Fencing Present		.000				10/2027	3
PA	2017	Not Specified		.000				10/2027	14
PA	2017	Riparian Restoration		23.650	acres			10/2027	7
PA	2017	Upstream Miles Opened		21.800	miles			10/2027	2
VA	2017	Livestock Exclusion Fencing Present		.000				10/2027	40
VA	2017	Not Specified		.000				10/2027	8
VA	2017	Riparian Exclusion		20598.050	acres			10/2027	356
VA	2017	Riparian Restoration		240.790	acres			10/2027	43
VA	2017	Upstream Miles Opened		11.000	miles			10/2027	4
WV	2017	Not Specified		.000				10/2027	1
MD	2018	Not Specified		.000				10/2028	2
NY	2018	Upstream Miles Opened		4.600	miles			10/2028	5
PA	2018	Dirt and Gravel Road Improvement		919.000	feet			10/2028	26
PA	2018	Instream Habitat		9290.830	feet			10/2028	12
PA	2018	Livestock Exclusion Fencing Not		.000				10/2028	1
PA	2018	Not Specified		.000				10/2028	21
PA	2018	Riparian Restoration		14.640	acres			10/2028	8
PA	2018	Upstream Miles Opened		39.700	miles			10/2028	48

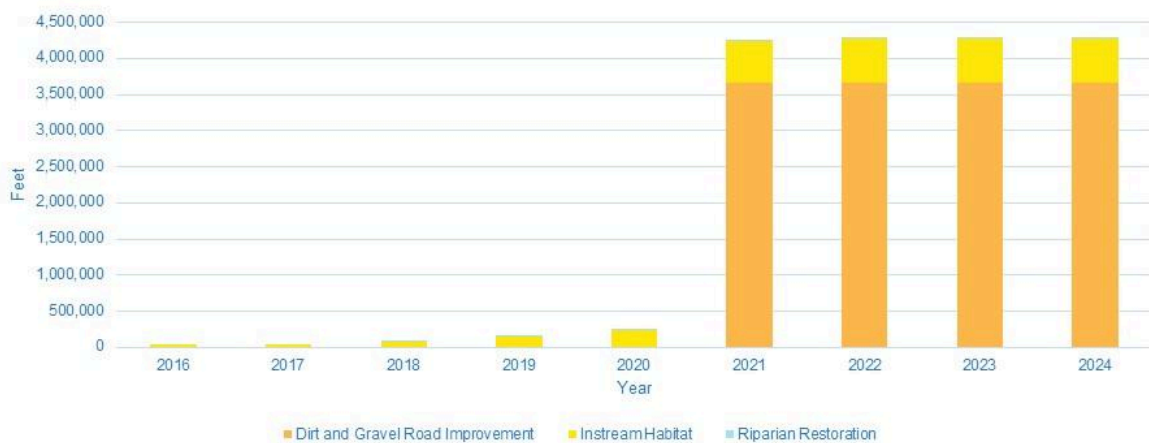
- Summarizes projects with a positive impact on Brook Trout Habitat
- Reports include:
 - Activity type and amount
 - Project location
- Projects are summarized by:
 - Total amount
 - Number of projects
 - Year
 - Geography
- Data from the [TU/EBTJV GIT-funded report](#)



Progress of Brook Trout Project Implementation by Type (Cumulative by Year)

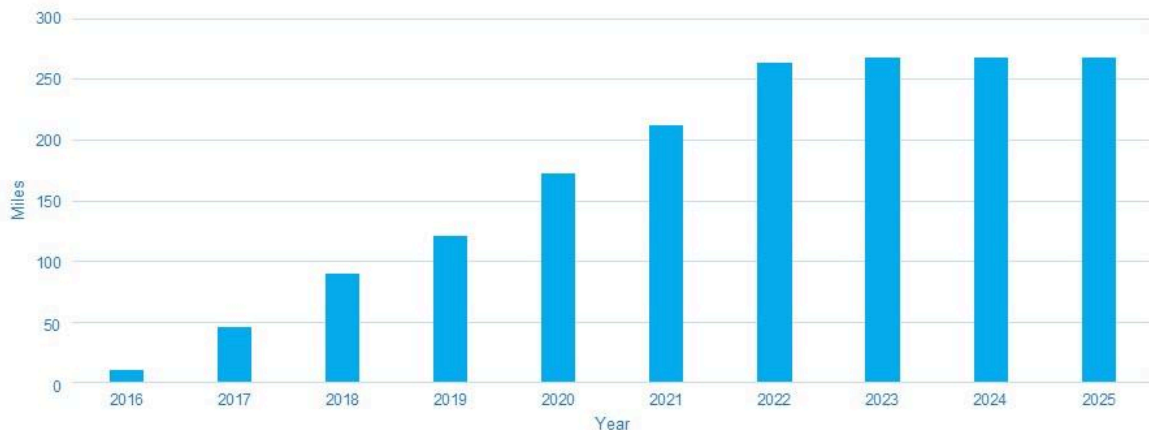


Progress of Brook Trout Project Implementation by Type (Cumulative by Year)





Cumulative Upstream Miles Opened Over Time



Conclusions

- **Habitat Tracker** supports evaluation of progress toward the **Vital Habitats Goals and Outcomes** in the Watershed Agreement
- Ongoing **tracking and analysis** can help demonstrate the impact and **incentivize habitat preservation and restoration**
- **Sustained outreach and effort** are essential to collect meaningful data
- Collected data will inform future updates to **Chesapeake Progress**



Appendix II: Long Term Monitoring by State compiled by Lori Maloney (EBTJV)

State/or g	Length (m)	Pass methodology	# sites in CB watershed	#s and weight	notes
MD	100 m or 75 m	2-3; decision to do 3rd depends on depletion at 1 and 2	51	yes	where 75 reach, maintained to be consistent with historic sampling
VA	100-200	1 pass annually	19	yes	Reach length might vary site to site but is consistent at site year to year
VA	100-200	3 pass, even years	12 (of the 19)	yes	Reach length might vary site to site but is consistent at site year to year. Most are robust sites - VA lots of forest. has very few streams except in SW, that are on private land but every trout stream that is at risk has data.
WV - WV U	1 km study reach w/ 3 100 m reaches	3 pass, even years	6 (all in NF and SB)	mix	WV doesn't yet have an active monitoring plan in place. Pretty good data on S. Br; lacking consistent data in NBr. For AMD. check Hartman for documentation. 20 yrs data on stronghold/robust streams. Also WQ, habitat data.
NY	100 m	3 pass, even years		yes	TU can't obtain a sampling permit but state and universities can. TU is working with NY DEC on a plan. Might work with a SUNY branch but not currently. Wants to follow similar protocol as PA
PA - TU	100 m	3 pass, even years		yes	
WV - TU	100 m or 75 m	mix of 3 and 1 pass but consistent site by yr.	20		long term since 2013, mix of stronghold and at risk. Working with WVU student on monitoring at restoration projects
WV- FS	100 m		13		



Appendix III: Trout Unlimited Long term monitoring sites within PA and WV

